DOCUMENT RESUME

ED 142 007 EC 101 365

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TITLE Madison's Alternative for Zero Exclusion: Toward an Integrated Therapy Model for Teaching Motor, Tracking and Scanning Skills to Severely Handicapped Students. Volume VI: Part 3.
INSTITUTION Madison Public Schools, Wis. Dept. of Specialized Educational Services.
SPONS AGENCY Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C. Div. of Personnel Preparation.
PUB DATE Nov 76
CONTRACT OEC-0-73-6137: OEC-0-74-7993
NOTE 263p.; Best copy available

EDRS PRICE MF-$0.83 HC-$14.05 Plus Postage.
DESCRIPTORS Curriculum; Curriculum Development; Elementary Secondary Education; Exceptional Child Education; *Models; Motor Development; *Nonverbal Communication; *Occupational Therapy; *Physical Therapy; *Severely Handicapped; Teaching Methods

ABSTRACT

The document provides information on an integrated therapy model for severely handicapped students in the public schools, and describes the development of a curriculum for teaching nonverbal communication skills. It is explained that the integrated therapy model allows for greater involvement in the home and classroom by the occupational and physical therapist. Separate sections consider the following therapy issues: neurophysiological principles, methods of teaching head control skills, and techniques using game activities to teach developmental motor skills. The bulk of the document is given to a discussion of a curriculum to teach nonverbal communication skills through basic tracking, scanning, and selection skills. Topics covered include considerations in selecting a communication system; assessment of rudimentary visual skills; and suggested activities, toys, and games that can be used to teach tracking, scanning, and selection skills. (CL)

Madison's Alternative for Zero Exclusion: Toward an Integrated Therapy Model for Teaching Motor, Tracking and Scanning Skills to Severely Handicapped Students

Volume VI: Part 3

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November, 1976

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This publication was developed in part from:

Federal Contract No. OEC-0-74-7993, "Project MAZE", with the Special Services Branch, Bureau of Education for the Handicapped, Office of Education, U.S. Department of Health, Education and Welfare.

Grant No. OEC-0-73-6137 from the Department of Health, Education and Welfare, Bureau of Education for the Handicapped, Division for Personnel Preparation, to the University of Wisconsin-Madison.

Opinions expressed in this publication do not necessarily reflect the position or policy of the United States Office of Education and no official endorsement by that office should be inferred.

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ACKNOWLEDGEMENTS

During the past several years Dr. Jean McGrew and Dr. Bill Tilley, as administrators in the Madison Metropolitan School District, have provided the support and atmosphere needed to develop the ideas, programs and services described in this book. Currently Dr. McGrew is Superintendent of the East Grand Rapids School District and Dr. Tilley is the Assistant Superintendent for Handicapped Children in the Illinois Department of Public Instruction.

The positions vacated by Drs. Tilley and McGrew have been filled by capable professionals. We would like to welcome Dr. Donald Hafeman, Assistant Superintendent for Instructional Services and Dr. Lee Greunewald, Director of Specialized Educational Services. There is little doubt that under their leadership the Madison Metropolitan School District will continue its quest to provide the most effective educational services possible to severely handicapped students.

Finally, it should be noted that Nancy Dodd of the University of Montana functioned as a technical editor and grammatical inspiration. If the contents are presented in a manner that can assist in the development of effective instructional services for severely handicapped students, Nancy Dodd should be thanked.

OVERVIEW

This book is an attempt to report on the activities of many persons as they have attempted to teach severely handicapped students in the Madison Metropolitan School District. There is little one can do to express accurately the frustrations, joys, failures and successes experienced as we discover more and more about what severely handicapped students can learn. Each year we sense increased excitement as staff and parents discover ways to enhance the functioning levels of even the most handicapped of our students.

As our ability to program for students expands across persons, settings and materials, we are learning more and more about the ability of severely handicapped students to perform competently in complex community environments. We have learned that the severely handicapped students in precarious health with minimal motoric abilities can be taught to locomote and communicate; we have learned that severely handicapped young adults will ultimately function effectively in competitive jobs; and we have learned that expectations once held only for mildly handicapped students can now be held for severely handicapped students.

In the process of learning about our students we have also learned a great deal about ourselves. Most importantly, we have learned to work cooperatively in spite of different training and disciplinary missions and we have learned that we cannot rely on any one instructional or organizational "model" to generate our strategies.

In an attempt to meet the specific needs of our readers, MAZE Volume VI has been organized into the following three parts:

Part 1:

Madison's Alternative for Zero Exclusion:
Papers and Programs Related to Public School Services
for Secondary Age Severely Handicapped Students

Part 2:

Madison's Alternative for Zero Exclusion:
Papers and Programs Related to Teaching Reading Skills
to Severely Handicapped Students

Part 3:

Madison's Alternative for Zero Exclusion:
Toward an Integrated Therapy Model for Teaching
Motor, Tracking and Scanning Skills to Severely Handicapped Students

We hope that this information will be helpful as you continue to work toward improved educational services for severely handicapped students.

L.B.
N.S.
T.C.

Occupational and Physical Therapy Services for Severely Handicapped Students: Toward a Naturalized Public School Service Delivery Model[1]

Part I

Integrated vs. Isolated Therapy Models

Janet Sternat, John Nietupski, Steve Lyon
Rosalie Messina, and Lou Brown
Madison Public Schools and University of Wisconsin[2]

Recent judicial and legislative actions have affirmed the right of all children to a public school education. Thus, public school officials throughout the nation are engaging in activities designed to culminate in the best possible educational services for students with substantial impairments in academic, motor, self-help and social skills domains. In Part I of this paper, attempts will be made to relate to selected aspects of at least two service delivery models (isolated and integrated) that have been or are being used in public school settings for severely handicapped students by physical and occupational therapists. In the isolated therapy model the therapy is offered in a segregated environment that is separate from the home and school room where the student generally functions. In the integrated model the therapy becomes part of the severely handicapped student's total developmental life space because it takes place in the school, the community and the home.

The models share common characteristics and thus are not mutually exclusive. However, for the purpose of illustration and communication examples of the sequence of treatment using the two models will be given. These examples lie at opposite ends of a continuum. Hopefully, such an

[1]This paper was supported in part by Madison Public Schools Federal Contract No. OEC-0-74-7993, and in part by Grant No. OEG-0-73-6137 to the University of Wisconsin-Madison from the Department of HEW, USOE, Bureau of Education for the Handicapped, Division of Personnel Preparation, Washington, D.C.

[2]A revision of this paper will be published in Education and Training of the Mentally Retarded. Appreciation is expressed to Nancy Dodd for her valuable contributions to Parts I and II.

artificial dichotomy will make several basic issues more clear and consequently allow for an open approach to the development of exemplary physical and occupational therapy service delivery models for severely handicapped students.

The Isolated Therapy Model

Assume that the teacher of a severely handicapped student (Billy) thought he needed physical or occupational therapy and referred him for therapy services. In a setting emphasizing an isolated therapeutic model the following sequence of events might occur:

1. Billy is removed from his classroom by the therapy staff and transported to the therapy room.
2. Through formal and informal testing the therapist secures diagnostic information presumably related to the determination of Billy's current general developmental motoric functioning level.
3. From the diagnostic information gathered it is hypothesized that Billy is operating motorically at approximately a four-month developmental level. The therapist, in collaboration with a physician, prescribes a program which is designed to induce progression through a normal developmental motor sequence. That is, the therapist will attempt to teach motor skills in the order of their appearance in normal motor development, beginning with the skills that typically appear at the four-month level.
4. Billy is brought to the therapy room twice each week. During therapy the therapist attempts to develop "pull to sitting" and "rolling to side", two motor skills which typically surface at the four-month level.
5. After therapy Billy is returned to his classroom. Often the

therapist has another student scheduled for therapy immediately after Billy. The time necessary to communicate with Billy's teacher or parents about the structure and content of the developmental motor program or progress within that program is, therefore, unavailable. Efforts by the teacher or the therapist to insure that skills taught in the therapy room are maintained and absorbed into classroom or home curricula consequently are unsuccessful. The teacher and the parents may even be unaware of Billy's motor needs and therefore the school and home environments may not allow for, or may even inhibit, the acquisition or performance of the motor skills the therapist is attempting to teach.

6. After six months of therapy Billy demonstrates little progress (When "pulled to sit" he exhibits slight head lag, but has not yet learned to "roll to side."). Although the therapist may want to continue working with Billy, the limited progress may lead to a decision to reduce therapy to weekly or bimonthly checks to allow time to work with another student with "more potential".

This hypothetical situation exemplifies a type of therapy service a severely handicapped student might receive under the "Isolated Therapy Model".

Assumptions of the Isolated Therapy Model.

There are at least four basic assumptions underlying the Isolated Therapy Model:

1. The Isolated Therapy Model assumes that the information related to motor skills which is secured in an isolated therapy room will yield information that validly represents general motoric functioning. That means that the Isolated Therapy Model assumes

that the level of motor skills observed in the therapy room is representative of the level of motor skills manifested by the severely handicapped student in the home, classroom, lunch room, on the playground, etc.

2. The Isolated Therapy Model assumes that knowledge of the sequence in which motor skills are typically acquired by "normal" children makes it possible to determine the order in which motor skills should be taught to a severely handicapped student. That is, once the therapist has assessed the motor skills of a severely handicapped student, the developmental relationship to a typically normal sequence can be determined. The therapist then can teach the absent skills in the order that they would presumably appear in the normal motor development sequence.

3. The Isolated Therapy Model assumes that episodic therapy (i.e., therapy conducted once or twice per week for 20-30 minutes per session) will result in substantial general motor skill development.

4. The Isolated Therapy Model assumes that skills acquired in one environment will be performed in other environments. For example, it is assumed that if a student performs the pincer grasp in the therapy room in the presence of a therapist, the student will perform that motor skill in the classroom, in the presence of the teacher and in the home in the presence of parents. While this assumption of skill generalization may be valid for normal and mildly handicapped students, it represents a rather high degree of instructional inference when applied to severely handicapped students.

The isolated therapy model has been effective with a variety of physical-motor problems of normal and mildly handicapped persons. Consequently, it is understandable that the isolated therapy model is being used with severely handicapped students in the public schools. The general or exclusive use of the isolated therapy model with severely handicapped students should, however, receive careful scrutiny and in most instances, be rejected. More efficacious alternatives are available.

The Integrated Therapy Model

Assume that the same severely handicapped student, Billy is referred by his teacher for physical or occupational therapy in a setting that emphasizes an integrated therapy model.

1. The therapist comes to the classroom and home and observes Billy while he engages in various activities (e.g., during play time, feeding, toileting, and group activities) and administers range of motion tests in the presence of the teacher and the parents.
2. From the information secured from observations and various informal tests the therapist concludes that Billy's primary motoric needs are in the area of head control. That is, in the various activities in which Billy engaged he rarely maintained his head in an upright position or turned his head to view objects or people to his right or left.
3. The therapist, the teacher and the parents, therefore, jointly design an instructional program that can be implemented at school and at home to develop head control skills. The program is also designed to develop a number of movement patterns which incorporate clusters of developmental skills.
4. The therapist provides direct service to Billy only twice per week.
5. In addition to direct therapy, the therapist trains

Billy's teachers and parents to implement the program both in the classroom and at home, during as many activities as possible. That is, in addition to direct therapy, Billy is taught head control during feeding, art class, Instructional Material Center activities and while watching TV or riding the school bus or playing at school or at home.

6. After two months, Billy demonstrates slight progress. The teacher, the therapist and the parents continue therapy and meet regularly to design changes that might make the program more effective.

Assumptions of the Integrated Therapy Model.

There are also at least four basic assumptions underlying the Integrated Therapy Model:

1. The Integrated Therapy Model assumes that assessment of motor abilities can be conducted most efficaciously in natural environments (e.g., classrooms, homes, busses).[3] If the therapist observes the students' motoric functioning in natural environments, he/she will be able to assess motor performance across many different natural settings, materials, cues and persons. This allows the therapist to secure a more valid representation of general motoric functioning. The integrated model also assumes that if the teacher, the therapist and parents jointly devise the program it can be incorporated into daily living and educational activities and will have direct relevance to immediate, as well as long term developmental needs. Thus, most "significant others" will be included in the therapy program. Educational activities can be arranged so that performance of target skills can be encouraged (or required) across a variety of natural settings, materials, cues and persons.

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[3]Certainly, selected "range of motion" assessments might be administered in isolated therapy rooms where necessary equipment is more readily available.

2. The Integrated Therapy Model assumes that students should be taught clusters of developmental motor skills through functional and game activities for at least 3 reasons. First, "normal" children appear to develop motor skills in clusters (i.e,, while refining the ability to sit the child is also learning to climb and achieve greater proficiency in four-point activities). Functional and game activities which incorporate clusters of developmental motor skills might, therefore, more closely approximate the normal developmental process. Second, it is felt that incorporating clusters of developmental motor skills into functional and game activities will result in more rapid acquisition. Third, functional and game activities can be incorporated into other aspects of a student's life space.
3. The Integrated Therapy Model assumes that in order for motor skill training to be effective, therapy must be longitudinal and naturalized. Therefore, therapy should be provided each day, throughout the day, in all the environments in which the student functions.
4. The Integrated Therapy Model assumes that in order for skills to be useful, they must be taught and/or empirically verified in the environments in which they will naturally occur. That is, the Integrated Therapy Model assumes that when attempting to teach skills which will be used in classrooms, homes, and/or in play settings, those skills should be taught or verified in classrooms, homes, and/or play settings.

Summary

The Integrated Therapy Model advocates several strategies based on these assumptions and consequently rejects the parallel assumptions of the Isolated Therapy Model. The Integrated Therapy Model, therefore, advocates

four basic approaches:

1. The integrated Therapy Model advocates assessing motoric functioning in the students' natural environments because it rejects the assumption that general motoric functioning can be validly assessed outside natrual environments by a therapist who is unfamiliar with the student and lacks stimulus control.
2. The Integrated Therapy Model advocates teaching clusters of skills as opposed to isolated developmental motor skills. Increasingly large discrepencies will therefore result, since it often requires many months to teach a severely handicapped student an isolated motor skill that a normal child would acquire in a few weeks. Although the normal developmental strategy often will result in substantial gains for other populations it is rejected as an effective strategy for use with severely handicapped students.
3. The Integrated Thera, Model advocates incorporating therapy continuously and naturally into the students' daily activities because it rejects the assumption that skills taught in short episodes once or twice a week will result in significant gains.
4. The Integrated Therapy Model advocates teaching skills in the student's natural environments with a variety of instructional materials, persons and cues because it rejects the assumption that skills taught in one environment by one therapist and utilizing one set of instructional materials will generalize to the student's natural environments.

It is suggested, therefore, that physical and occupational therapists working with severely handicapped students, utilize an Integrated Therapy Model that meet the following seven criteria:

1. Assessment of motoric functioning must be conducted in several natural settings;

2. Parents, teachers and therapists should design motor skill programs jointly;
3. Motor skill programs should be designed to teach clusters of developmental motor skills;
4. Clusters of developmental motor skills should be taught through functional and game activities;
5. Motor skill training should occur throughout the day, every day, and in all settings in which students function;
6. Program revisions should be based upon student progress and implemented by parents, teachers and therapists.
7. The teaching strategies utilized in developmental motor skill programs should rely upon basic principles of neurophysiological functioning (several basic neurophysiological principles are presented in Part II).

Part II

Neurophysiological Principles: Considerations for the Development of Educational Curricula for Severely Handicapped Students

Janet Sternat and Rosalie Messina
Madison Public Schools

The changes in a skill or cluster of skills along a continuum from initially unsophisticated to more complex levels generally has been referred to as developmental process. Development occurs within a context of sensory input and is integrated with motor output through contact and experience with external environments. It is known that a time when this process is especially critical is the first 24 months of an individual's life. Piaget has referred to this period as the sensori-motor stage of development. During this period the rudiments of many critical concepts are established. The developmental skills an individual acquires from interactions with external environments seem to be a function of at least three basic factors:

1. Accurate sensory intake with continual feedback from resultant motor responses;
2. The number and variety of experiences actively encountered during interactions within a variety of environments;
3. Continued maturation of the Central Nervous System (CNS) with integration (i.e., incorporation of lower center activity into a coordinated system) at higher centers along with inhibition (i.e., gradual decrease in effect) of primitive reflexive behavior.

If any of these three basic factors are not operative or are limited, problems in the acquisition and maintenance of concepts and their behavioral referents will result. In this section an attempt will be made to delineate several of the underlying neurophysiological factors that may account for

delays in normal developmental processes, distortions of those processes, as seen in severely handicapped children's actions, or deficits related to organic functioning. Visible actions that are functionally related to more difficult to observe CNS functioning, but which may be amenable to remediation will be discussed. Attempts will be made to encourage teachers and other direct service personnel to expand the number of factors which are typically considered when teaching severely handicapped students.

Accurate sensory intake

Accurate sensory intake is influenced by:

a) inhibition of irrelevant stimuli at external receptors and various centers within the CNS through complex chemical coding;

b) the ability to accommodate (i.e., adapt to) to changing stimuli;

c) feedback from sensory systems within the muscle fibers; and

d) maintenance of arousal levels necessary to perceive information.

If CNS is fragmented, high intensity stimulation may be channeled without inhibition. This may result in withdrawal and/or defensive actions. Inconsistency in the expression of socially appropriate emotional responses and hyperdistractability are two additional actions that might be observed. Thus, a situation might arise in which a student may be viewed as noncompliant when in fact distortions of sensory input may make it difficult for that student to maintain interaction with materials or surfaces.

The inability to maintain contact with surfaces or objects or grasp or keep feet flat while in contact with varied textures also may be viewed as over stimulation at CNS levels when the situation require inhibition. If a teacher forces a student to keep his/her foot in contact with a surface without adequately preparing the CNS to accept the input, the spiraling of distractability and the heightening of avoidance and

escape actions may result. If the accommodation process is impaired, each presentation of a stimulus may be interpreted differently. Therefore, the teacher must consider the effect of change itself within stimulus dimensions as having an effect on student responses.

The actions described above can occur in reaction to changes in sensory input from many sources. Some potential sources are: persons, foods, textures, temperatures, and changes in body position. Students may exhibit action sequences that avoid sudden changes in routine or emit other maladaptive responses upon encountering different intensitites of common or novel environmental variables. Programmatic considerations should include a focus on the accommodation process by systematically varying persons, materials, positions and surroundings to avoid excessive reliance on a limited number of cues. Such systematic variation may prepare the child to handle varying degrees of sensory stimulation.

While motor responses are observable, they have internal effects which are directly fed back to the CNS through a sensory system specific to muscle fibers. The feedback system allows for automatic adjustments by the CNS and thus the control of motor planning. Without accurate feedback from muscle systems, students may appear clumsy or awkward and may display discrepancies in the rate and precision of movement. Implications for programming include accurate functional motion analysis of required rate, force (e.g., acceleration/deceleration of muscle movements related to strength) and timing of coordinated muscle groups. This analysis should be followed by repeated practice to establish coded neural pathways and efficient patterns of movement. A student who is unable to achieve an accurate hand to mouth pattern

necessary for eating illustrates the importance of an adequately functioning motor feedback system. The student is required to scoop the food and bring the utensil to his mouth. Successful completion of the hand to mouth pattern depends upon feedback from length changes within the muscles and joint receptor feedback throughout the movement. Over time and trials, the number of external cues provided during instruction should be faded if automatic patterns are to emerge. That is, if students are to acquire the ability to perform the skills of concern independently.

The CNS also monitors states of arousal at specific centers. Essentially, this means that specific centers need to be chemically "primed" to accept sensory inputs. Medication, seizure activity and lack of higher level cognitive feedback may disturb the function of arousal centers resulting in heightened or suppressed arousal states that are incompatible with attending and responding to relevant aspects of the stimulus environment. Attempts should be made to obtain accurate information as to appropriate medications, dosages and possible seizure activity related to states of arousal.

Number and variety of experiences

Delayed motor development (e.g., when a child is not rolling over at six months or sitting at one year), curtails environmental interactions. If development is delayed and there is a resultant lack of independent functioning, the variety of experiences is reduced further and CNS functioning may be maintained at reflexive and primitive levels. Low rates of self-initiated movement and exploration combined with repeated attempts that fail have the effect of decreasing motivation and thus subsequent action. Stated another way, the world is perceived by the child as too risky or failure ridden.

There is evidence that supports the existence of an innate drive or motivation that is not necessarily connected to reinforcement from the environment which also should be considered (Dudlah, 1975). The developing process of CNS growth continually initiates practice and repetition of movements, leading to the establishment of neural growth and efficient neural pathways. Many severely handicapped students display low rates of movement and high rates of repetitious practice or irrelevant (stereotypic) motor actions. Low movement rates and high rates of stereotypic actions can limit the subsequent acquisition and use of higher level skills outside of highly structured settings. Programming should focus on these critical aspects of CNS developmental process which underlie present behaviors. Those behaviors which are not at maximum efficiency and/or not demonstrating integration should be determined and given sufficient repetition and practice for refinement. Motoric components absent from the students' repertoire, which are catalysts for the emergence of higher level skills should be developed to the highest possible level of efficiency.

The child's delayed and limited motor development also may have an effect on adults who are interacting with the student. General parent-child interactions often change in response to manifested growth patterns. For example, as a normal child acquires skills, parental handling may be faded. However, parents of delayed children often do not fade their assistance. If fading of parental support does not occur or if parents do not attempt to direct the child's development, the child's active experiences again have deviated from that of a normal child. For example, parents who always provide support for their child's head may be preventing the development of necessary independent head control skills.

Continued physiological naturation

Organic defects within the CNS, such as complete absence of specific brain areas, tumors, or lesions, that result in non-functional, neural centers are factors which cannot be overlooked. These defects may cause actions unrelated to environmental stimuli. Those neurological areas which are functioning may be maturing at grossly different rates leaving cognitive and motor aspects of learning out of synchronication and interfering with the child's skill acquisition and interactions with the external world.

As a result of degenerative diseases such as San Fillipo's Disease, Tuberous Sclerosis and Sicle Cell anemia, development may follow normal progressions for a time. However, when degenerative processes occur some higher level skills may be maintained while others deteriorate in apparently unpredictable patterns. If one or more of the above interfering factors exist in development may be unique, delayed or totally arrested. Unless teachers and therapists recognize and program for these possibilities, teaching methods may fail to allow students to function in accordance with their capacities.

In Part III curricular suggestions for teaching selected headcontrol skill clusters to severely handicapped students are provided. These curricular suggestions are intended to reflect the seven criteria of the Integrated Therapy Model.

Part III

Curricular Suggestions for Teaching Severely Handicapped Students Selected Clusters of Head Control Skills

Janet Sternat, Steve Lyon, John Nietupski, and
Rosalie Messina

Introduction and Rationale

A suggested head control program, designed to meet the criteria of the Integrated Therapy Model is presented below. During the 1976-1977 school year, this program or a facsimile will be implemented with several severely handicapped students in the Madison Public Schools.

Head control skills such as the ability to move (rotate, flex and extend) balance and right[5] are a vital aspect of human growth and development. Without such skills even primitive scanning, selection, inspection, retrieval and manipulation of objects would be extremely difficult. Close observation of many severely handicapped students of varying chronological ages and functioning levels often reveals substantial deficits in a variety of head control skill clusters. Even such rudimentary skills as the independence of head and eye movements may not be in the functional repertoires of some severely handicapped students.

As head control skills are crucial to almost all developmental domains, it is imperative that teachers of severely handicapped students:

a) assess functioning for the presence of crucial head control skills;

b) teach students to perform the required skills; or

c) arrange for adaptive and/or prosthetic assistance which might compensate for the inability of the student to learn independent performance of the necessary skill.

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[5]Head righting is referred to here as movement of the head: 1) to the right when the trunk is moved to the left; 2) to the left when the trunk is moved to the right; 3) raised (extended) when the trunk is moved forward, and 4) lowered (flexed) when the trunk is moved backward.

The following curricular suggestions are designed to result in the students' acquisition of three head control skill clusters: head rotation, head balancing, and head righting. These skill clusters are considered pre-requisites for many educationally crucial developmental motor skills.[6]

Instructional Sequence and Task Analysis

A. Instructional Sequence

The Schemata of Instructional Sequences Chart (see Chart I) illustrates the order in which clusters of head control skills may be taught. The skill clusters referred to in the Schemata of Instructional Sequences Chart are described briefly below:

I. Horizontal head movement (rotation) refers to teaching a student to rotate his/her head horizontally away from and toward the midline position.

II. Head Balancing refers to teaching a student to stop his/her head to the right and left of midline and above and below the level head position.

III. Head Balancing (after a rotation) refers to teaching a student to stop his/her head and hold it in a fixed position after a horizontal rotation.

IV-A. Head Righting refers to teaching a student to rotate his/her head in order to right the trunk after a side to side trunk movement.

IV-B. Initiation of Rotation refers to teaching a student to initiate a smooth and continuous head rotation.

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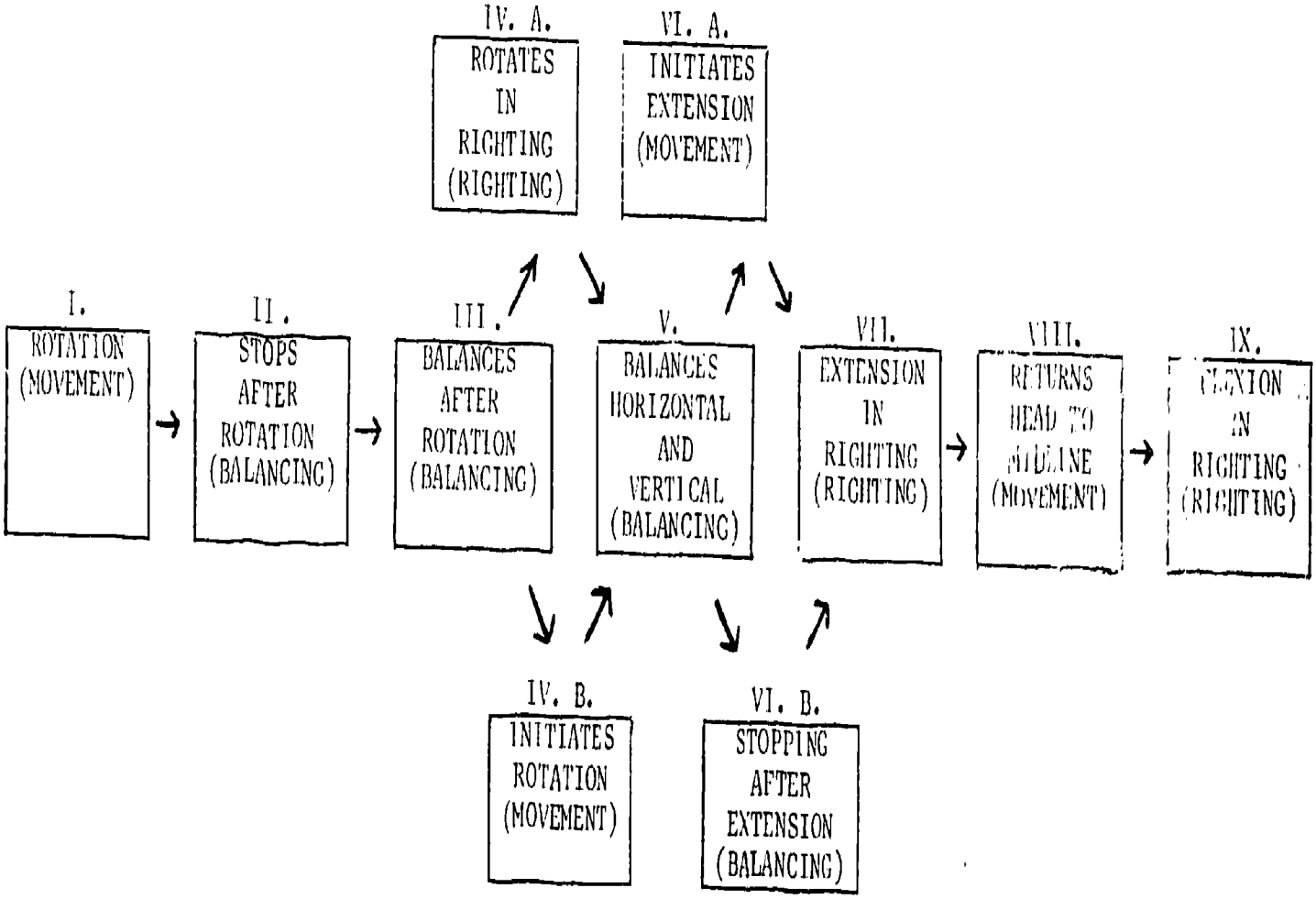
[6]This instructional program is not recommended for use with students with CA less than one to two years. For such students, it is recommended that teachers attempt to induce progressions through normal developmental motor sequences.

CHART I

Schemata of Instruction Sequences



V. Head Balancing refers to teaching a student to balance his/her head when the head is placed in any position within 45° to the right or 45° to the left of midline and 10° above or below a level head position.

VI-A. Initiation of Extension refers to teaching a student to initiate a smooth and continuous extension (a vertical head movement against gravity).

VI-B. Stopping the Head (after movement) refers to teaching a student to stop his/her head appropriately after a movement.

VII. Head Righting (extension) refers to teaching a student to extend his/her head in order to right the head with the trunk after a frontward movement of the trunk.

VIII. Returning the Head refers to teaching a student to return (by rotation, flexion, or extension) his/her head to a midline and level position after a head movement.

IX. Head Righting (flexion)[7] refers to teaching a student to flex his/her head in order to right the head with the trunk after a backward movement of the trunk.

B. Task Analysis

The following is a suggested task analysis of the head control skill clusters delineated in the Schemata of Instructional Sequences Chart. Those Phases numbered IV-A and IV-B or VI-A or VI-B indicate that the skill clusters might be taught concurrently.

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[7]Though lowering the head below the level head position is referred to here as flexion, the action results from using extensor muscles to decellerate downward head movement.

Task Analysis of Selected Head Control Skill Clusters

Phase I - Teaching students to perform basic head rotation skills

Program Objectives: To teach a student to rotate his/her head through 45^{0} both from: midline to the right and to the left; and from 90^{0} to the right or to the left of midline toward midline.[8]

Part 1: Teaching a student to rotate his/her head through 45^{0} from midline to the right and to the left of midline.

Step 1: Teaching a student to rotate his/her head through 15^{0} to the right and to the left of midline.

Step 2: Teaching a student to rotate his/her head through 30^{0} to the right and to the left of midline.

Step 3: Teaching a student to rotate his/her head through 45^{0} to the right and to the left of midline.

Part 2: Teaching a student to rotate his/her head through 45^{0} from 45^{0} to the right and to the left of midline toward midline.

Step 1: Teaching a student to rotate his/her head through 15^{0} toward midline from 45^{0} to the right and to the left of midline.

Step 2: Teaching a student to rotate his/her head through 30^{0} toward midline from 45^{0} to the right and to the left of midline.

Step 3: Teaching a student to rotate his/her head through 45^{0} to midline from 45^{0} to the right and to the left of midline.

Phase II - Teaching students to perform basic head balancing skills: Stopping the head following head rotation.

Program Objectives: To teach a student to stop his/her head in any required position within 90^{0} to the right or left of midline and 10^{0} above or below a level head position after a rotation of the head.

Step 1: Teaching a student to stop his/her head at a midline and level head position.

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[8]For those students whose heads are fixed at 90^{0} to the right or left of midline an additional part may first be required to teach those students to rotate their heads through 45^{0} toward midline. Teaching should then proceed to Part 2 and then Part 1.

Step 2: Teaching a student to stop his/her head 10° above a level head position.

Step 3: Teaching a student to stop his/her head 10° below a level head position.

Step 4: Teaching a student to stop his/her head above level and 45° to the right or left of midline.

Step 5: Teaching a student to stop his/her head in any required position within 90° to the right or left of midline and 10° above or below level position.

Phase III - Teaching students to perform head balancing skills following a rotation of the head.

Program Objective: To teach a student to balance (hold in a fixed position) his/her head for 5 seconds after a horizontal rotation of 45° toward or away from midline following a rotation away from midline.

Part 1: Teaching a student to balance his/her head for 3 seconds after a 15° rotation from midline to the right or to the left of midline.

Step 1: Teaching a student to balance his/her head for 3 seconds after a 15° rotation to right or left of midline from midline.

Step 2: Teaching a student to balance his/her head for 3 seconds after a 30° rotation to right or left of midline from midline.

Step 3: Teaching a student to balance his/her head for 3 seconds after a 45° rotation to right or left of midline from midline.

Part 2: Teaching a student to balance his/her head for 3 seconds after a rotation toward midline.

Step 1: Teaching a student to balance his/her head for 3 seconds after a 15° rotation from the right or left of midline toward midline.

Step 2: Teaching a student to balance his/her head for 3 seconds after a 30° rotation from the right or left of midline toward midline.

Part 3: Teaching a student to balance his/her head for 3 seconds after a horizontal rotation of 45° toward or away from midline.

Step 1: Teaching a student to balance his/her head for 3 seconds after a 45° rotation away from midline to the right or to the left.

Step 2: Teaching a student to balance his/her head for 3 seconds after a 45° rotation from the right or left of midline toward midline.

Part 4: Teaching a student to balance his/her head for 5 seconds after a rotation of 45° toward or away from midline.

Step 1: Teaching a student to balance his/her head for 5 seconds after a rotation of 45° from midline to the right or to the left.

Step 2: Teaching a student to balance his/her head for 5 seconds after a rotation of 45° from the right or left of midline toward midline.

Phase IV-A - Teaching students to perform basic head righting skills by rotating the head following a trunk movement to the right or left.[9]

Program Objective: To teach a student to rotate his/her head 45° in order to right the head with the trunk after a lateral movement of the trunk to the right or left a distance of 18 inches.

Part 1: Teaching a student to rotate his/her head 15° to the right or left in order to right the head with the trunk after a lateral trunk movement of 6 inches (e.g., after a lateral trunk movement to the right the head rotates to the left and vice versa).

Part 2: Teaching a student to rotate his/her head 30° to the right or to the left in order to right the head with the trunk after a lateral trunk movement of 12 inches.

Part 3: Teaching a student to rotate his/her head 45° to the right or to the left in order to right the head with the trunk after a lateral trunk movement of 18 inches.

[9]Trunk movement refers to moving the trunk at the shoulders while maintaining the buttocks stationary.

Phase IV-B - Teaching students to initiate head rotation.

Program Objective: To teach a student to initiate (begin) a smooth and continuous rotation of his/her head.

Part 1: Teaching a student to initiate a rotation to the right or to the left of midline.

Part 2: Teaching a student to initiate a rotation from the left or from the right of midline toward midline.

Phase V - Teaching students to balance their heads when the head is placed in any position within 45° to the right or left of midline and 10° above or below a level head position.

Program Objective: To teach a student to hold his/her head in a fixed position (balance) 45° to the left or to the right of midline and 10° above or below level for at least 5 seconds.

Part 1: Teaching a student to balance his/her head at a level midline head position for 3 seconds.

Part 2: Teaching a student to balance his/her head level and 15° to the right or left of midline for 3 seconds.

Part 3: Teaching a student to balance his/her head level and 30° to the right or left of midline for 3 seconds.

Part 4: Teaching a student to balance his/her head level and 45° to the right or left of midline for 3 seconds.

Part 5: Teaching a student to balance his/her head at 45° to the right or left of midline and 5° above or below level for 3 seconds.

Part 6: Teaching a student to balance his/her head at 45° to the right or left of midline and 10° above or below level for 3 seconds.

Parts 7-12: Repeat Parts 1-6 for 5 seconds.

Phase VI-A - Teaching students to initiate a smooth and continuous extension (vertical head movement against gravity).

Program Objective: To teach a student to initiate (begin) a smooth and continuous extension (vertical movement against gravity) when his/her head is placed in any position.

Part 1: Teaching a student to initiate a head extension when his/her head is placed below level head position at midline.

Part 2: Teaching a student to initiate a head extension when his/her head is placed in a midline and level position.

Part 3: Teaching a student to initiate a head extension when his/her head is placed above a level position and at midline.

Part 4: Teaching a student to initiate a head extension when his/her head is placed below level and to the right or to the left of midline.

Part 5: Teaching a student to initiate a head extension when his/her head is placed at a level head position and to the right or to the left of midline.

Part 6: Teaching a student to initiate a head extension when his/her head is placed above a level head position and to the right or the left of midline.

Phase VI-B - Teaching students to stop their heads after a vertical head movement but before the end of a range of motion.

Program Objective: To teach a student to stop his/her head after an extension of 10°:

1) from below level toward level when the head is:
   a) within 45° to the right of midline;
   b) within 45° to the left of midline; or
   c) at midline; and

2) from level toward above level when the head is:

a) within 45° to the right of midline;

b) within 45° to the left of midline; or

c) at midline.

Part 1: Teaching a student to stop his/her head after an extension of 5° from midline and below level toward a level head position.

Part 2: Teaching a student to stop his/her head after an extension of 5° from midline and level above and away from level.

Part 3: Teaching a student to stop his/her head after an extension of 5° from midline and above level.

Part 4: Teaching a student to stop his/her head after an extension of 5° from the right or left of midline and below level toward a level head position.

Part 5: Teaching a student to stop his/her head after a 5° extension from the right or left of midline at level above and away from level.

Part 6: Teaching a student to stop his/her head after a 5° extension from the right or left of midline and above level.

Parts 7-12: The same as parts 1-6 except after extensions of 10°.

Phase VII - Teaching students to extend their heads in order to right the head with the trunk after a forward movement of the trunk.

Program Objective: To teach a student to extend his/her head 45° in order to right the head with the trunk after his/her trunk is moved forward a distance of 18 inches.

Part 1: Teaching a student to extend his/her head 15° in order to right the head with the trunk after a forward trunk movement of 6 inches.

Part 2: Teaching a student to extend his/her head 30° in order to right the head with the trunk after a forward trunk movement of 12 inches.

Part 3: Teaching a student to extend his/her head 45° in order to right the head with the trunk after a forward trunk movement of 18 inches.

Phase VIII - Teaching students to return (by rotating, flexing or extension) their heads to a midline and level head position after a movement.

Program Objective: To teach a student to return (move) their heads to a midline and level head position after any two component (horizontal and vertical) head movement.

Part 1: Teaching a student to return his/her head to a midline and level position after a rotation to the right of midline.

Part 2: Teaching a student to return his/her head to a midline and level position after a rotation to the left of midline.

Part 3: Teaching a student to return his/her head to a midline and level position after a flexion down and away from midline.

Part 4: Teaching a student to return his/her head to a midline and level position after a rotation and a flexion away from midline and level.

Part 5: Teaching a student to return his/her head to a midline and level position after a rotation and an extension away from midline.

Part 6: Teaching a student to return his/her head to a midline and level position after any two component (horizontal and vertical) head movement.

Phase IX - Teaching students to flex their heads in order to right the head with the trunk after a backward movement of the trunk.

Program Objective: To teach a student to flex his/her head 45° in order to right the head with the trunk after his/her trunk is moved backwards a distance of 18 inches.

Part 1: Teaching a student to flex his/her head 15° in order to right the head with the trunk after a backward trunk movement of 6 inches.

Part 2: Teaching a student to flex his/her head 30° in order to right the head with the trunk after a backward trunk movement of 12 inches.

Suggested Instructional Strategies

A. Instructional Considerations

Prior to engaging a student in a motor skill instructional program, it is essential that the effects of general muscle tone on functional activity level be given careful consideration. The extremeties (arms and legs) are the major indicators of the state of general muscle tone, while the trunk and head are considered the critical points of control that effect changes in overall tonal quality. Only after an analysis of general muscle tone should facilitory and inhibitory events and specific handling procedures be determined.

Traditionally tonal states have been organized into the following categories:

1. Hypotonia: Too little muscle tone or an inability to maintain postures against gravity.
2. Hypertonia: Excessive muscle tone with resistance to passive or repeated movement, or an inability to isolate movements from fixed postures.
3. Hypokinesis: Too little purposeful movement and slow movements, but slowness not necessarily related to muscle tone.
4. Hyperkinesis: Excessive non-purposeful movement, but not necessarily related to muscle tone.

These traditional tonal status categories may represent partially accurate descriptions of general tonal actions. However, they fail to provide a useful method for the determination of individualized handling procedures for the following reasons:

1. Traditional categories provide only static descriptions of muscle tone which do not account for the constantly changing tonal states students may demonstrate across environments and time;

2. Classification on the basis of general muscle tone obscures the fact that specific muscle groups often exhibit tones different from general tone; and

3. Traditional categories attempt to provide a method for the determination of individualized handling procedures. However, the same handling procedure may be either facilitory or inhibitory, depending on the muscle groups involved.

In summary, it is doubtful that any single method or criterion can be used to determine appropriate handling procedures without the specification of: a) changes in muscle tone; b) the specific movement desired and c) the muscle group involved in the desired movement.

B. Suggested Strategies for the Assessment of Student Progress

To determine existing head control skills related to head movement, head balancing and head righting, the following general strategies are suggested:

First, students should be observed in natural settings by teachers, parents and other adults during activities such as eating and bathing in order to determine general levels of head control skills (see Section E: "Instructional Settings"below). Second, students should then be observed in structured settings (see Section E: "Instructional Settings" below) where more precise measurements (i.e., duration, distance and degree) can be made. In both structured and natural settings students should be assessed in prone, supine and upright sitting positions. During these initial assessment activities attempts should be made to determine the level of head control skills demonstrated without prompting or priming[10] from the

[10] A physical prime refers to providing the minimum physical assistance necessary for a student to perform a desired action. At least two types of physical primes can be utilized: a) a complete physical prime refers to physically guiding a student through all portions of an action sequence; and b) a partial physical prime refers to physically guiding a student through selected portions of an action sequence.

teacher. The structured initial assessment also should include screening for individual deformities, general tonal patterns, and individual sensitivities to various types of sensory stimulation. Third, following observations in natural and structured settings, instructional baselines can be determined for each student in relation to each skill cluster. Fourth, probes can be conducted to assess the students' progress over time.

C. Suggested Teaching Procedures

When teaching head control skills, the following instructional procedures are suggested:

Step 1: The student can be placed in a structured setting in which the performance of specific skills is required. If the student performs the required skills in this structured setting and in at least 2 natural settings in the presence of 3 different persons and when placed in 3 different body positions, and without cues to perform from persons in authority, the teacher could proceed to the next phase of the task analysis. If the student does not perform the required skills, the teacher might implement Step 2.

Step 2: The teacher could repeat the procedures described in Step 1 while providing the student with verbal and gestural cues. If the desired skills still are not performed, the teacher could implement Step 3.

Step 3: The teacher could provide repeated demonstrations (models) of the desired actions and also provide verbal and gestural cues when the student is placed in the different settings described in Steps 1 and 2. If students still do not demonstrate the desired actions the teacher might implement Step 4.

Step 4: The teacher could present an additional sensory stimulus; e.g., a sound-producing toy in an attempt to prompt the desired response.

In addition, commands and demonstrations could be presented. If the correct actions still are not performed, the teacher might proceed to Step 5.

Step 5: The teacher could place the student in different settings, etc., give commands, model demonstrations, provide additional sensory stimulation and physically prime the student through the desired actions. If correct actions still are not performed the teacher might implement Step 6.

Step 6: The teacher could place the student in a setting which is designed to maximize the probability of the performance of the desired actions and/or maximize the inhibition of inappropriate actions. The teacher then may present inhibitory/facilitory (see D below) events which are designed to bring about the desired actions. Placing the student prone on a scooter board and rapidly pulling the student by the arms around the room to facilitate raising the head to a vertical position is an example of a potentially facilitating event. If the desired actions still are not performed, the teacher should proceed to Step 7.

Step 7: The procedure for Step 6 could be repeated and the teacher could physically prime the student through the correct actions. As the level of performance more closely approximates the correct actions, the teacher could proceed through Steps 8-12.

Step 8: The teacher could fade (decrease) the amount of physical priming.

Step 9: The teacher could decrease the frequency, intensity and duration of the facilitory/inhibitory events.

Step 10: The teacher could fade the partial physical prompts.

Step 11: The teacher could decrease the frequency, intensity and duration of the presentation of additional sensory stimulation.

Step 12: The teacher could fade verbal and/or gestural cues.

Steps 1-12 may be implemented until students demonstrate the required skills in the settings, etc., referred to in Step 1 on 3 consecutive occasions in each setting, while in 3 body positions, and in the presence of 3 different persons.

D. Facilitory/Inhibitory Events

As the tonal patterns of individuals often require considerable changes before actions can be performed, some inhibitory/facilitory events may be more effective when used prior to engaging a student in the actions of concern. When less tonal change is required, some inhibitory/facilitory events may be more effective when used while engaging a student in the actions of concern. The following selected examples of inhibitory/facilitory events, when used prior to or during instructional activities, are designed to assist in the instruction of head movement, balancing and righting. Therapists, teachers and others working with severely handicapped students are encouraged to use available inhibitory/facilitory events and to continually create additional inhibitory/facilitory events that meet the individual's needs.

Selected inhibitory/facilitory events and the actions for which they may be effective are:

Suggested Inhibitory/Facilitory Events

Skill: Teaching a student to rotate his/her head to the right or left or midline.

1. Suggested events for use prior to head rotation

   A. An inhibitory event: rotate the trunk while the student is prone or supine.

   B. A facilitory event: place the student in a supine position on a large soft pillow or mat and press down on his/her side.

2. Suggested events for use during head extension

A. An inhibitory event: maintain joint compression on the neck.

B. A facilitory event: provide firm downward pressure to the lower part of the back on both sides of the spinal cord.

Skill: Teaching a student to flex his/her head downward toward a level head position from above a level head position.

1. Suggested events used prior to head flexion

A. An inhibitory event; stimulate the student to flex his/her entire body.

B. A facilitory event: place the student prone over an inflated ball and provide rapid acceleration from side to side.

2. Suggested events used during head flexion

A. An inhibitory event: maintain pressure on the sternum.

B. A facilitory event: place a vibrator on the student's sterno-cleidomastoid muscles (large muscles in the sides of the neck).

E. Instructional Settings

There are at least three types of instructional settings in which student performance can be measured in relation to precise units of distance, degree and time. In setting 1 objects are arranged on a vertical surface; i.e., on a standard room divider. In setting 2 objects are arranged on a horizontal surface; i.e., a table top. In setting 3 objects are hung from a wooden grid in such a way that those objects are suspended in varying lengths in front of the student, at various distances from the floor, and at varying distances from left to right of midline.

Several natural settings are related to each of the 3 structured settings. The natural settings are located in both schools and homes and involve different materials, persons and body positions. The three types

of structured and natural settings and suggested activities that seem relevant to these natural settings are presented in Tables 1, 2 and 3.

Summary

In Part I Integrated and Isolated therapy service delivery models were discussed. It was suggested that the Integrated Therapy Model might be longitudinally more effective when teaching crucial developmental motor skills to school-aged severely handicapped students. It was also suggested that an individualized program designed to teach these skills should meet the seven basic criteria of the Integrated Therapy Model. Part II described basic neurological principles that teachers and other direct service personnel should consider when designing a developmental motor skills program. Part III contained suggested curriculum strategies which could be used to teach selected clusters of head control skills. A head control skill instructional program designed to meet the criteria of the Integrated Therapy Model is now being developed and will be implemented during the 1976-1977 school year.

TABLE 1

Structural Teaching Setting 1 (vertical surface):

Students are placed 12 inches away from the front of a solid room divider. Objects are fastened to the divider and arranged at points both horizontally and vertically from midline and level head position.

Suggested Natural Teaching Settings

Description of Setting	Location	Adult	Materials	Body Positions	Other Concurrent Training
A. Bedtime(in crib)	1. Rest period at school 2. Home(Bedroom) 3. Relative's Home	1.Therapist 2.Parent 3.Relative	1.Mirror 2.Bubbles 3.Mobile	1. Supine 2. Sidelying 3. Sitting 4. Ringsitting	1. Eye contact 2. Body awareness 3. Relaxation training
B. Play at Toybar[13]	1. Classroom 2. Gymnasium 3. Home(playroom)	1.Older students 2.Phy Ed teacher 3.Siblings	1.Instructional Materials 2.Gym class 3.Toys	1. Kneel-standing 2. Seated 3. Standing	1. Playskills 2. Fine motor skills 3. Motor planning
C. Mealtime	1. School 2. Home 3. Restaurants	1.Student-Teacher 2.Babysitter 3.Therapist	1.Mealtime 2.Foods	1. Held semi-reclining 2. Prone 3. Sitting upright	1. Mealtime skills 2. Language 3. Social skills

[13] A toybar may be constructed by suspending objects from a fixed horizontal bar or rope at an appropriate height.

TABLE 2

Structured Teaching Setting 2 (horizontal surface):

Students are seated in the center of a hollow horseshoe table. Objects are placed at varying points from a midline and level head position of the student.

Suggested Natural Teaching Settings

Description	Location(s)	Adult(s)	Materials/ Stimuli	Body Position	Other Concurrent Training
A. Table Setting and/or mealtime preparation	1. Home 2. School 3. Picnics	1. Parent 2. Sibling 3. Teacher-aide	1. Mealtime equipment a. silverware b. plates, cups, bowls c. Foods	1. Sitting 2. Standing 3. Side-lying	1. Object Function 2. Object discrimination 3. Home living skills
B. Swimming	1. School 2. Neighborhood beach	1. PhyEd teacher 2. Parent 3. Sibling 4. Swimming instructor	1. Water toys a. ball b. animals c. innertubes d. raft e. other persons	(floating positions) 1. Prone 2. Supine 3. Upright	1. Swimming skills 2. Language 3. Gross motor training
C Placement in suspension with head halter	1. School (during instructional activity 2. Home (family room) 3. Music class	1. Teacher 2. Babysitter 3. Music teacher	1. Materials related to instructional activity 2. Toys at home 3. Musical instruments	1. Sitting upright 2. Standing 3. Sidesitting	1. Tracking 2. Scanning 3. Object manipulation

TABLE 3

Structured Teaching Setting 3 (objects suspended in space):

Students are seated under a grid (36" x 36") from which objects are suspended in space at varying distances from a midline and level head position of the student.

Suggested Natural Teaching Settings

Description	Location(s)	Adult(s)	Materials	Body Positions	Other Concurrent Training
A. Bathtime	1.Home 2.School	1.Teacher 2.Parent 3.Other relative	1.Towel, washcloth, soap 2.Clothes 3.Favorite water toys	1.Sidelying 2.Sitting 3.Supine	1.Self-care skills 2.Language 3.Fine Motor skills
B. Dressing	1.Home (bedroom) 2.School (bathroom) 3.Swimming pool	1.Respite care worker 2.Teacher 3.Phy Ed teacher	1.Clothing 2.Adaptive devices for teaching dresssing skills	1.Long sitting 2.Sitting in corner 3.Sitting in box or barrel	1. Self-care skills 2. Fine Motor skills 3. Body awareness
C. Transporting or positioning[14]	1.School 2.Home 3.Community	1.Busdriver 2.Sibling 3.Day care center worker	1.Transporting device(wheelchair or walker)	1.Inverted 2.Prone 3.Supine	1. Cross motor training 2. Social skills 3. Community living skills

[14] Many severely handicapped students need either extensive assistance or are totally dependent upon others for transportation. Because much of their day is spent being transported, it is crucial that this time be used productively by teachers, parents, and other persons.

Part IV

Use of an Integrated Therapy Model to Teach Developmental Motor Skills Through a Game Activity: The Handwalking Program

Steve Lyon, Janet Sternat, John Nietupski, and Rosalie Messina

Introduction and Rationale

In Part IV attempts will be made to describe the use of a suggested game activity, handwalking, to teach selected clusters of developmental motor skills. The handwalking activity is suggested for use in teaching motor skills for the following reasons:

1. The handwalking activity incorporates clusters of developmental motor skills which are thought to be crucial to continuing development and improvement of posture, strength, balance and movement;
2. The handwalking activity could be conducted as a game activity which could potentially have intrinsic reinforcement value for students;
3. The handwalking activity could be implemented by a classroom teacher in conjunction with therapists and parents and conducted in several classroom and home settings;
4. The handwalking activity could be used as a vehicle for the concurrent training of language or social skills; and
5. The handwalking activity could be used to assist in the development of rudimentary ambulation skills or to improve higher order motor planning skills.

In addition to teaching crucial developmental motor skills, motor skill training should result in improved student performance of

functional motor skills. The following is a listing of the clusters of skills to be taught in the handwalking activity and several functional motor skills related to those clusters:

Skill Cluster	Functional Motor Skill
1. protective extension	1a. extending arms to protect while falling
2. prone equilibrium	2a. balancing while in prone position
3. prone equilibrium on elbows	3a. supporting weight on elbows in prone position
4. pivot proneness	4a. flexing trunk to turn while in prone position
5. trunk symmetry	5a. straight postural alignment in sitting, standing or walking
6. motor planning and execution	6a. effective weight shifting and balance reactions during movement

Prerequisite Skills

Prerequisites for the Handwalking Program are contained in Part III (Curriculum Suggestions for Teaching Severely Handicapped Students Selected Clusters of Head Control Skills). Although a student need not meet all of the program objectives of the head control program, performance of at least the following actions is considered prerequisite to entry into the Handwalking Program:

1. Head rotation
   a) A student will move his/her head horizontally and vertically both away from and toward a midline and level head position;
2. Head righting
   a) A student will initiate (begin) head righting following a trunk movement to the right, left, front, or back;

3. Head Balancing

a) A student will balance his/her head for 5 seconds when the head is in any position within 45^{o} to the right or left of midline and 10^{o} above or below a level head position.

Program Objectives

When placed in the handwalking position and held by both ankles a student will traverse a figure eight pattern, and remove an object from a shoulder high platform in one minute on three consecutive occasions while demonstrating at least the following actions:

A. While Handwalking in a straight line:

1. A student will hold his/her head vertically and extend his/her legs;
2. A student will hold his/her shoulders parallel to the floor;
3. A student will place his/her palms on the floor directly under shoulders;
4. A student will extend his/her arms as straight as possible, but not locked, in line with shoulders;
5. A student will place his/her fingers in contact with the floor and pointing forward;
6. A student's trunk will be straight (not concave or convex) and parallel to the floor; and
7. A student's hips and knees will be extended.

B. While turning right or left including all previously mentioned actions during handwalking:

1. A student will rotate his/her outside hand in the direction of the turn as he/she begins to turn;
2. A student will cross his/her right arm over left arm when turning left and left arm over right arm when turning right.

C. While reaching to remove an object from a shoulder high platform:

1. A student will keep the arm which remains in contact with the floor straight;

2. A student will keep his/her shoulders level and parallel to the floor.

Task Analysis and Intructional Sequence

The suggested instructional sequence and task analysis is based on three assumptions: a) that motor development occurs from head to foot and from midline outward; b) that performance of the required actions in the absence of adult-directed cues may result from the gradual reduction of those cues; and c) that student performance of the required actions when the student is held by the ankles, may result from gradual reduction of handling position. Regardless of the current level of intervention the teacher is providing (type of cue and amount of physical priming) the student should be required to attempt to complete the full obstacle course each time the handwalking activity is conducted. This will enable the teacher to work on several motor skill clusters concurrently. The following is a task analysis of selected clusters of motor skills related to the handwalking activity.

A. Task Analysis of Selected Clusters of Skills Related to Handwalking

Phase 1: Teaching students to perform basic head control skills when placed in the handwalking position.

Program Objective: Teaching student to extend and rotate their head when placed in the handwalking position.

Part 1: Teaching a student to rotate his/her head through 45^{0} from midline to the right and to the left of midline when placed in the handwalking position.

Part 2: Teaching a student to extend (lift) his/her head up through 10^{o} to a level-head position when placed in the handwalking position.

Step 1: Teaching a student to extend his/her head to a level-head position when placed in the handwalking position.

Step 2: Teaching a student to extend his/her head up 10^{o} above a level-head position when placed in the handwalking position.

Phase II: Teaching students to maintain their trunk (back) in straight alignment during the handwalking activity.

Program Objective: Teaching a student to maintain his/her back in a straight alignment when the student is in the handwalking position and while the student reaches up to shoulder level to retrieve an object.

Part 1: Teaching a student to maintain a straight back alignment when weight bearing on his/her hands.

Part 2: Teaching a student to maintain a straight back alignment when handwalking in a straight line.

Part 3: Teaching a student to maintain a straight back alignment when placed in the handwalking position and when his/her head is rotated to the right and to the left of midline.

Part 4: Teaching a student to maintain a straight back alignment while handwalking in a straight line when his/her head is being rotated to the right and to the left of midline.

Part 5: Teaching a student to maintain a straight back alignment while handwalking in a circle to the left or to the right.

Part 6: Teaching a student to maintain a straight back alignment while reaching for an object placed half-way between the shoulders and floor.

Part 7: Teaching a student to maintain straight back alignment while reaching up to shoulder level to retrieve an object.

Phase III: Teaching students to maintain their shoulders level to the floor

Program Objective: Teaching a student to maintain his/her shoulders level when the student is placed in the handwalking position and while the student reaches for an object at shoulder height.

Part 1: Teaching a student to maintain his/her shoulders level to the floor while weight bearing on his/her hands.

Part 2: Teaching a student to maintain his/her shoulders level to the floor while handwalking in a straight line.

Part 3: Teaching a student to maintain his/her shoulders level to the floor while handwalking in a circle to the right or to the left.

Part 4: Teaching a student to maintain his/her shoulders level to the floor when the student is placed in the handwalking position and while the student reaches for an object at his/her shoulder height.

Phase IV: Teaching students to perform selected arm, elbow and hand actions while handwalking.

Program Objective: Teaching a student to extend arms, place hands palm down and flat on the floor with the fingers extended and pointed forward while handwalking.

Part 1: Teaching a student to extend his/her arms to touch objects with both hands when placed in a prone position.

Part 2: Teaching a student to extend his/her arms while weight bearing on hands in an upright position.

Part 3: Teaching a student to extend his/her arms while weight bearing on hands in a prone position.

Part 4: Teaching a student to extend his/her arms while weight bearing in the handwalking position when the head is raised above level.

Part 5: Teaching a student to extend his/her arms while weight bearing in the handwalking position when the head is below a level position.

Part 6: Teaching students to position his/her hands open and flat with palms down under the shoulders while weight bearing.

Part 7: Teaching a student to position his/her hands open and flat with palms down under the shoulders while handwalking.

Part 8: Teaching a student to position his/her fingers open and flat while weight bearing.

Part 9: Teaching a student to position his/her fingers open and flat while handwalking.

Part 10: Teaching a student to point his/her fingers straight ahead while weight bearing on hands.

Part 11: Teaching a student to point his/her fingers straight ahead while handwalking.

Phase V: Teaching students to extend their legs at the hips and at the knees while handwalking

Program Objective: Teaching a student to extend his/her legs both at the hips and at the knees while handwalking.

Part 1: Teaching a student to extend his/her legs at the hips when the student is placed in prone position.

Part 2: Teaching a student to extend his/her legs at the hips and at the knees when the student is placed in prone position.

Part 3: Teaching a student to extend his/her legs at the hips when the student is placed in the handwalking position.

Part 4: Teaching a student to extend his/her legs at the hips and at the knees when the student is placed in the handwalking position.

Part 5: Teaching a student to extend his/her legs at the hips while the student is handwalking.

Part 6: Teaching a student to extend his/her legs at the hips and at the knees while the student is handwalking.

Phase VI: Teaching students to traverse ten to fifteen steps in a figure eight pattern and to remove an object from a shoulder high platform while in the handwalking position.

Program Objective: Teaching a student to traverse ten to fifteen steps in a figure eight pattern and to remove an object from a shoulder high platform while in the handwalking position and held by a teacher at the ankles within one minute on three consecutive days.

Part 1: Teaching a student to traverse up to five steps forward while in the handwalking position.

Part 2: Teaching a student to handwalk in a circle to the right and to the left.

Part 3: Teaching a student to traverse up to fifteen steps forward while in the handwalking position.

Part 4: Teaching a student to traverse a figure eight pattern while in the handwalking position.

Part 5: Teaching a student to traverse a figure eight pattern and to remove an object from a shoulder high platform while in the handwalking position.

Suggested Instructional Strategies

A. Suggested Strategies for the Assessment of Student Progress

In addition to following this delineated task sequence it is suggested that a teacher concurrently follow the suggested sequence for prompting and priming and for holding positions. Generally, the sequence for prompting and priming and holding positions proceeds from a maximum amount of teacher assistance toward a minimum amount of teacher assistance. For example, initially a student may need to be held by the hips and provided with a partial physical prime in order to perform 50% of the required actions correctly. It is hoped that as the student participates in the handwalking activity the teacher's assistance can be reduced. The teacher would proceed through the sequences until a student performs the required actions when held by the ankles when given no additional cues or prompts from a teacher.

Data sheets should be constructed which allow for the assessment of both student entering skills and skill acquisition (Figure 1). To assess student entry skills, a teacher should place the student in the handwalking position holding the student by the ankles and require the student to traverse a figure eight pattern. The teacher

scores a "+" for those actions delineated above which occurred without additional teacher prompts. It is recommended that teaching begin at that level of assistance (prompts and primes and holding position) at which a student performs 50 of the required actions.

In an attempt to elicit the actions which did not occur when the student was held by the ankles and no additional cues were provided the teacher should then repeat the handwalking activity using the sequences of prompting or priming and holding positions. The following are descriptions of prompting and priming and holding sequences arranged in an order which is considered to be from the least amount of teacher assistance to the most amount of teacher assistance.

Teacher Prompting and Priming Sequence

1. The teacher provides no direct cues to the student (e.g., the student performs the required actions without additional teacher prompting once and student is placed in the required position and the data sheet, is marked with a "+").
2. The teacher provides a command to the student (e.g., the teacher commands, verbally and/or manually, the student to perform the required actions and the data sheet is marked with a "C").
3. The teacher provides a model of the required actions (e.g., either two teachers or a teacher and another student may demonstrate the required actions and the data sheet is marked with an "M").
4. The teacher provides sensory (visual, auditory, gustatory tactile, or olfactory or some combination of these) cues to the student (e.g., the teacher may present a preferred object

or ring a bell to direct the student, and the data sheet is marked with an "S-A").

5. The teacher provides a partial physical prompt to the student (e.g., the teacher provides light touch physical priming and the data sheet is marked with a "P1").
6. The teacher provides complete physical priming (e.g., the teacher physically primes the student through all portions of an action sequence and the data sheet is marked with a "P2").

Teacher Holding Position Sequence

1. The teacher holds the student at the student's ankles and the data sheet is marked with an "A:
2. The teacher holds the student at the student's knees and the data sheet is marked with a "K".
3. The teacher holds the student at the student's thighs and the data sheet is marked with a "T".
4. The teacher holds the student at the student's hips and the data sheet is marked with an "H".
5. The teacher holds the student at the student's hips and at the student's stomach and the data sheet is marked with an "HS".
6. The teacher holds the student at the student's hips and stomach and provides the student with additional support (such as placing a barrel under the student) and the data sheet is marked with an "O".

A matrix could be constructed (Figure 2) which would illustrate student progress and reduction of the amount of teacher assistance.

B. Suggested Teaching Procedures

To teach students the program objectives described in the task analysis the following procedures are suggested:

Step 1: The student may be placed in the handwalking position and held by the ankles without additional prompting from the teacher. If the student performs the required skills without additional teacher prompting or priming the data sheet is marked with a "+" (no additional teacher directed prompting or priming) and the teacher may proceed to the next phase of the instructional sequence. If the student does not perform the required skills, the teacher implements Step 2 of the instructional procedure.

Step 2: The teacher places the student in the handwalking position and provides verbal and/or manual cues to the student while commanding the student to perform the required actions. If the actions are then performed, the data sheet is marked with a "P". If the desired skills are still not demonstrated, the teacher implements Step 3 in the instructional procedure.

Step 3: The teacher provides the student with repeated demonstrations (models) of the required actions and provides verbal and/or manual cues to the student. If the student performs the desired actions correctly, the data sheet is marked with an "M". If the student still does not demonstrate the desired actions, the teacher implements Step 4.

Step 4: After a determination of the student's hierarchy of responses to various sensory modalities (visual, auditory, gustatory, olfactory, and tactile), the teacher presents an additional sensory stimulus to prompt the desired actions. In

addition, commands and demonstrations are to be presented concurrently with the stimulus. If a student demonstrates the desired responses to the above prompts, the data sheet is marked with an "S". If the correct responses are not yet obtained, the teacher implements Step 5 of the instructional procedure.

Step 5: The student is then placed in the handwalking position and provided with commands, modeled demonstrations, additional sensory stimulation and partial physical priming to assist the student in performing the desired actions. If a student demonstrates the correct actions following these prompts, a "Pl" is marked on the data sheet. If the correct actions are still not performed, the teacher implements Step 7.

Step 6: The student then should be placed in another setting arranged to maximize the likelihood that the desired actions will occur. The teacher then presents inhibitory/facilitory events which are designed to bring about the desired actions. If the desired actions are still not obtained, the teacher may proceed to Step 7.

Step 7: The procedure for Step 6 may be repeated and the teacher should physically prime the student through the desired actions. As the level of performance more closely approximates the correct actions, the teacher may proceed through Steps 8-12.

Step 8: The teacher fades (reduces the amount of) physical priming.

Step 9: The teacher reduces the frequency, intensity and duration of the facilitory events.

Step 10: The teacher reduces partial physical prompting.

Step 11: The teacher reduces the frequency, intensity and duration of the presentation of additional sensory stimulation.

Step 12: The teacher reduces the commands to the student to perform the task.

Step 13: The student demonstrates the required skills under the conditions defined in Step 1 of this instructional sequence.

C. Suggested Facilitory/Inhibitory Events

One of the criteria of the Integrated Therapy Model (Part I) requires motor skill programs to "incorporate facilitory/inhibitory events which reflect the neurophysiological principles delineated in Part II." The following are selected examples of facilitory events which may be used either prior to or during the handwalking activity to teach clusters of developmental motor skills. The reader is cautioned that these represent only selected examples of possible facilitory/inhibitory events which may be used to prompt desired actions. The effects of such facilitory/inhibitory events vary greatly across students and as a result, teachers need to consult with therapists in the selection of specific events to be used with specific students.

The following activities can be used by a teacher as methods to facilitate the acquisition of the targeted handwalking behaviors. Facilitory events may be utilized both prior to and during the handwalking activity. Prior facilitory events can be used as a "warm-up" to prepare students for handwalking. Facilitory events may also be used during handwalking should the student not perform the targeted behaviors.

Skill: Teaching a student to maintain his/her back straight while handwalking.

1. Suggested facilitory/inhibitory events for use prior to handwalking

   A. While the student is in the handwalking position, apply a vibrator to the student's back along either side of the spine at the spine from the lower back to shoulder level.

   B. While the student sits on a backless chair, on a barrel or on the floor, grasp both of the student's ankles and slowly lift them, maintaining flexion at the knees, until the student compensates by leaning forward. The teacher may lower the student's legs and repeat this procedure 2 or 3 times.

   C. While the student is sitting with his/her back erect, compress the joints of the spine through shoulders in the direction of the length of the back. The teacher places his/her hands on the student's shoulders on either side of the neck or on top of the student's head.

2. Suggested facilitory/inhibitory events for use during handwalking.

   A. Apply a vibrator along the length of the student's spine on the muscles parallel to the spine from the lower back to shoulder level.

   B. Apply pressure to the muscles along the spine by "poking" firmly with fingertips from the lower back to shoulder level.

C. Tickle the abdominal muscles with light touch of the fingers or with a pleasant textured swab.

Skill: Teaching a student to extend his/her legs at the hips during handwalking

1. Suggested facilitory/inhibitory events to be used prior to handwalking

A. Place the student in position "1C" so that the student is bearing weight on his/her hands with the barrel touching his/her thighs between the hips and knees for increased periods of time.

B. Approximate the joints of the students' legs in an extended position by holding onto an ankle or a heel.

2. Suggested facilitory/inhibitory events to be used during handwalking

A. Drop one leg while holding the opposite leg up. "Tap" the student's free leg into extended position from under the thigh or the knee.

B. Apply a vibrator to the muscles of the student's buttocks.

Skill: Teaching a student to point his/her hands forward during handwalking.

1. Suggested facilitory/inhibitory events for use prior to handwalking.

A. Tie dental dam (stretchy plastic) in a loop, place it around the student's extended arms above the elbows and require the student to "stretch" the dental dam by moving his/her arms apart and together again 3 or 4 times.

2. Suggested facilitory/inhibitory events for use during handwalking

A. Place dental dam around the student's arms, (such that it does not allow the student to spread his/her arms farther apart than shoulder separation) and require the student to traverse the figure eight pattern.

D. Suggestions for Concurrent Training of Other Skills

In addition to enabling a teacher to teach a cluster of related motor skills, the handwalking activity could be used as a vehicle for social interaction and language skill development as well as skills involved in the tracking, scanning, selection and discrimination of objects. Teachers can create games involving several students during handwalking, such as a handwalking race during transitions between classroom activities. The vestibular stimulation involved in handwalking may also be a facilitator of an increased variety of vocalizations. Teachers can use preferred toys both to encourage handwalking and to develop other skills. For example, a teacher might select a wind-up musical toy for the student to handwalk toward, track, retrieve, and operate. Figure 3 represents an attempt to illustrate selected examples of individualized teaching objectives from curriculum areas other than motor and some possible teaching arrangements and activities which could be conducted during the handwalking activity.

Summary

In Part IV an attempt was made to describe the use of a suggested game activity, handwalking, to teach selected clusters of developmental motor skills. Curricular suggestions included program objectives, a task analysis, an instructional procedure, strategies for the assessment

of student progress and a method for the concurrent training of other skills.

The Handwalking Program described in Part IV was designed to meet the criteria of the Integrated Therapy Model. The program either wholly or partially meets five of the seven conditions of the Integrated Therapy Model:

1. It was suggested that assessment of student motoric functioning be conducted in natural environments during mealtime, playtime, physical education, and in transitions between activities;
2. Teachers and therapists did design the program jointly;
3. Clusters of developmental skills were described and delineated;
4. It was suggested that skills be taught through the use of a game activity; and
5. It was suggested that motor skill training in the Handwalking Program incorporate the use of facilitory/inhibitory events.

It is hoped that before the program is fully implemented that the following conditions will also be met:

1. Assessment of student motoric functioning will be conducted in the students' homes;
2. Parents will be involved in further revision of the program; and
3. The handwalking activity will be made more functional.

Figure 1
Suggested Data Sheet-Handwalking

Student_____ Date_____

Required Prompts:
t = no additional prompts
c = command
m = model
s = sensory stimulus
P1 = partial prime
P2 = complete prime

Holding Positions:
a = ankles
k = knees
t = thighs
h = hips
hs = hips and stomach
O = other

Cluster	Skill	Prompt	Held at	Facilitory/Inhibitory
Head	turns left			
	turns right			
	perpendicular to floor			
Trunk	hands under shoulders			
	straight when reaching for object			
	straight when head rotated			
	straight when head perpendicular to floor			
	parallel to floor			
Legs	extended at hips			
	extended at knees			
Shoulders	parallel to floor when reaching for object			
	parallel to floor when weight bearing			
Arms	elbows straight when head down			
	elbows straight when head perpendicular to floor			
	fingers open and flat			
	fingers point ahead			
	palms on floor			
Handwalking	1-5 steps			
	around tire to right			
	around tire to left			
	reach object			
	climb stair			

Figure 2
Matrix to Chart Student Progress*

Student_____

Other	Hips and Stomach	Hips	Thighs	Knees	Ankles	
						No Additional Prompts Needed
						Commands
						Modeling
						Presentation of Sensory Stimuli
						Partial Primes
						Complete Primes

*Enter date on matrix (e.g., September 12: 9-12) in the appropriate box.

Figure 3
Concurrent Training of Other Skills

	SELECTED INDIVIDUALIZED TEACHING OBJECTIVES FROM AREAS OTHER THAN MOTOR	POSSIBLE TEACHING ARRANGEMENTS AND ACTIVITIES CONDUCTED DURING HANDWALKING DESIGNED TO TEACH OTHER OBJECTIVES
Student 1:	"Will visually track slowly moving objects through arcs of 45°."	Arrange for the student 1 to visually track a blinking flashlight while directing the student through the figure eight handwalking pattern .
Student 2:	"Will engage in parallel play with a peer."	Arrange for both student 2 and another student to practice arm extension and/or weight bearing with both students placed prone over the same barrel.
Student 3:	"Will say "ma" meaning more in situations where the student wants more of something."	Arrange for a handwalking game to play with student 3 where the teacher holding the student starts and stopssthe student's handwalking and student 3 is required to say"ma" in order to resume handwalking.

Part V

Use of an Integrated Therapy Model to Teach Selected Clusters of Developmental Motor Skills through a Game Activity: The Obstacle Course Program

Steve Lyon, Janet Sternat
John Nietupski and Rosalie Messina

Introduction and Rationale

Selection of the Obstacle Course activity as a vehicle for teaching developmental motor skills was based on a rationale similar to that used to justify the teaching of handwalking (Part IV). Specifically, the obstacle course activity was designed to allow for the teaching of selected clusters of motor skills related to trunk stability and strength, reciprocal movement of upper and lower extremities, general flexion and extension of muscle groups, trunk, hip and shoulder rotation and the development of weight bearing and weight shifting responses. It is anticipated that acquisition of the skills necessary to complete the obstacle course successfully may result in students' increased ability to function in more general performance areas such as motor planning, terrain traveling and transitioning, as well as in specific functional motor skills. The following is a selected list of suggested clusters of motor skills to be taught through the use of the Obstacle Course activity and several functional motor skills related to those skill clusters.

Skill Cluster	Functional Motor Skill
1. Trunk stability and strength	1a. Independent and erect postural alignment
2. Reciprocal movement of extremities	2a. Walking on inclined terrains

3. Flexion and extension of muscle groups	3a. Swinging on a swing
4. Weight bearing	4a. Opening doors
5. Hip and shoulder rotation	5a. Climbing on playground equipment
6. Weight shifting	6a. Transitioning from one body position to another

Prerequisite Skills

Specific prerequisite motor skills to the Obstacle Course Program could be acquired during a student's participation in the Handwalking Program. While a student may not have met all of the program objectives of the Handwalking Program he/she may have acquired sufficient skills for entry into the Obstacle Course Program. The following skills were deemed essential for entry into the Obstacle Course Program. When placed in the handwalking position and held at the knees a student will demonstrate at least the following positions and actions:

A. Correct head positions

1. The student will assume a vertical head position.
2. The student will rotate his/her head to the right and to the left of midline.

B. Correct arm positions

1. The student's arms will be extended with elbows straight.

C. Correct shoulder positions

1. The student will maintain his/her shoulders parallel to the floor.
2. The student's shoulders will be positioned directly above the placement of the student's hands on the floor.

D. Correct back positions

1. The student's back will be straight when reaching for an object.
2. The student's back will be straight when his/her head is rotated to the right or to the left.

E. Handwalking skills

1. The student will handwalk at least 10 steps.
2. The student will reach for an object with one hand while weight bearing on the opposite hand.
3. The student will turn to the right or to the left while handwalking in a figure eight pattern.

Suggested Components and Arrangements for the Obstacle Course

Arrangements and components of the Obstacle Course are suggested in anticipation: 1) that the components would be used as vehicles for teaching of motor skills and 2) that the obstacles could be easily obtainable. It is also suggested that the obstacle course be arranged in an easy to hard sequence. The following is a description of suggested components and arrangements for the obstacle course:

When placed in a four point stance (on hands and knees) and given directions from the teacher the student will perform the following actions in the following order:

1. The student will creep across the floor a distance of 10 feet.
2. The student will creep across the floor a distance of 10 feet following a designated 3 foot wide path which contains both a 90° right turn and a 90° left turn over a variety of textured surfaces.

3. The student will creep across the floor a distance of 10 feet climbing over a series of 3 obstacles ranging in height from 12-18 inches and ranging in length from 12-18 inches and varying in texture.
4. The student will creep up and down a 6 inch wide board inclined 45°.
5. The student will creep over a carpeted, 2 foot wide and 4 foot long 2-way rocker board.
6. The student will creep up, across and down a 6 inch wide teeter totter board inclined 45°.
7. The student will creep up onto a 1 foot square scooter board and maintain a stationary four point stance while the teacher slowly rotates the scooter board to the right on to the left through 360°.

Task Analysis of the Obstacle Course

The phases of this task analysis correspond directly to the seven components of the obstacle course delineated above. That is, the sequence which follows represents an attempt to describe additonal procedures which may result in student acquisition of the motor skills necessary to perform the actions required in the obstacle course. Teachers are encouraged to adapt these sequences to individual student needs whenever necessary. The following is a task analysis of the obstacle course:

Phase I - Teaching students to creep in a four point stance

Program Objective: Teaching a student to creep in a four point stance a distance of 10 feet across the floor and turning 90° to the right and to the left.

Part 1: Teaching a student to maintain a four point stance for up to 30 seconds.

Part 2: Teaching a student to creep ahead moving one hand with one knee and the other hand with the other knee.

Part 3: Teaching a student to creep forward a distance of 5 feet.

Part 4: Teaching a student to creep forward a distance of 10 feet.

Part 5: Teaching a student to creep forward turning 90° to the right and to the left.

Part 6: Teaching a student to creep forward a distance of 10 feet and turning to the right and to the left 90°.

Phase II - Teaching students to creep in a four point stance over a variety of textured surfaces

Program Objective: Teaching a student to creep across the floor a distance of 10 feet following a designated 3 foot wide path over a variety of textured surfaces, turning to the right and to the left.

Part 1: Teaching a student to creep over a wooden board.

Part 2: Teaching a student to creep over a hard, smooth, plastic surface.

Part 3: Teaching a student to creep over a carpeted surface.

Part 4: Teaching a student to creep over a wet surface.

Part 5: Teaching a student to follow a 3 foot wide path while creeping a distance of 10 feet over the above surfaces and making turns to the right and to the left.

Phase III - Teaching students to creep (traverse while maintaining a four point stance) over low obstacles.

Program Objective: Teaching a student to creep over a series of 3 low

obstacles 3-18 inches high and from 3-18 inches long which vary in surface texture.

Part 1: Teaching a student to creep over an obstacle 3-6 inches high and 3-6 inches long.

Part 2: Teaching a student to creep over an obstacle 3-6 inches high and 6-12 inches long.

Part 3: Teaching a student to creep over an obstacle 6-12 inches high and 6-12 inches long.

Part 4: Teaching a student to creep over an obstacle 6-12 inches high and 12-18 inches long.

Part 5: Teaching a student to creep over an obstacle 12-18 inches high and 12-18 inches long.

Part 6: Teaching a student to creep over a series of 3 obstacles 6-12 inches high and 6-12 inches long.

Part 7: Teaching a student to creep over a series of 3 obstacles, 12-18 inches high and 12-18 inches long.

Part 8: Teaching a student to creep over a series of 3 obstacles 12-18 inches high and 12-18 inches long and varying in surface texture.

Part 9: Teaching students to creep over a series of 3 obstacles 6-18 inches high, 6-18 inches long and varying in surface texture.

Phase IV - Teaching students to creep up and down inclines

Program Objective: Teaching a student to creep up and down a narrow (6 inch wide) surface inclined 45°.

Part 1: Teaching a student to creep up a 2 foot wide surface inclined 15°.

Part 2: Teaching a student to creep down a 2 foot wide surface inclined 15°.

Part 3: Teaching a student to creep up a 2 foot wide surface inclined 30°.

Part 4: Teaching a student to creep down a 2 foot wide surface inclined 30°.

Part 5: Teaching a student to creep up a 1 foot wide surface inclined 30°.

Part 6: Teaching a student to creep down a 1 foot wide surface inclined 30°.

Part 7: Teaching a student to creep up a 1 foot wide surface inclined 45°.

Part 8: Teaching a student to creep down a 1 foot wide surface inclined 45°.

Part 9: Teaching a student to creep up a 1 foot wide surface inclined 30°.

Part 10: Teaching a student to creep down a 1 foot wide surface inclined 30°.

Part 11: Teaching a student to creep up and down a 1 foot wide surface inclined 45°.

Phase V - Teaching students to creep over moving surfaces.

Program Objective: Teaching a student to creep up, across and down a 3-way carpeted rocker board.

Part 1: Teaching a student to creep across a three inch thick, 6 foot long floor mat.

Part 2: Teaching a student to creep across a blanket placed on a hard, smooth floor surface.

Part 3: Teaching a student to creep over a 1-way, 2 foot wide, 4 foot long carpeted rocker board.

Part 4: Teaching a student to creep over a 1 foot wide, 5 foot long foam rubber plastic covered bolster.

Part 5: Teaching a student to creep lengthwise over a 2 foot wide, 4 foot long carpeted barrel placed on its side.

Part 6: Teaching a student to creep up, across, and down a 2-way carpeted rocker board.

Phase VI - Teaching students to creep over narrow, inlcined, moving surfaces

Program Objective: Teaching a student to creep up, across and down a 6 inch wide board teeter totter inclined 45^{o}.

Part 1: Teaching a student to creep up a 6 inch wide board inclined 30^{o}.

Part 2: Teaching a student to creep up a 6 inch wide board inclined 45^{o}.

Part 3: Teaching a student to creep up, across, and down a 1 foot wide board teeter totter inclined 30^{o}.

Part 4: Teaching a student to creep up, across, and down a 1 foot wide board teeter totter inclined 45^{o}.

Part 5: Teaching a student to creep up, across, and down a 6 inch wide board teeter totter inclined 30^{o}.

Part 6: Teaching a student to creep up, across, and down a 6 inch wide board teeter totter inclined 45°.

Phase VI -- Teaching students to maintain a four point stance on a moving scooter board

Program Objective: Teaching a student to creep up on a 1 foot square scooter board and maintain a stationary four point stance while the teacher slowly rotates the scooter board through 360° to the right or to the left.

Part 1: Teaching a student to creep up a 2 foot wide, 3 foot long padded scooter board and assume a stationary four point stance.

Part 2: Teaching a student to creep up on a 2 foot wide, 3 foot long padded scooter board and maintain a four point stance on the scooter board while the teacher moves the scooter board ahead a distance of 5 feet.

Part 3: Teaching a student to creep up on a 2 foot wide, 3 foot long padded scooter board and mainain a four point stance on the scooter board while the teacher slowly moves the scooter board backward a distance of 5 feet.

Part 4: Teaching a student to creep up on a 2 foot wide, 3 foot long padded scooter board and maintain a four point stance on the scooter board while the teacher slowly moves the scooter board to the right and to the left a distance of 2 feet.

Part 5: Teaching a student to creep up on a 2 foot wide, 3 foot long padded scooter board and maintain a four point stance on the scooter board while the teacher slowly rotates the board through 90° to the right and to the left.

Part 6: (Same as Part 5 except that the scooter board is rotated through 180°).

Part 7: (Same as Part 5 except that the scooter board is rotated through 360°).

Parts 8-14: (Same as Parts 1-7 except using a 1 foot square hard, plastic surfaced scooter board).

Suggested Instructional Strategies

A. Suggested Strategies for the Assessment of Student Progress

To determine students' existing skills related to the skill clusters delineated earlier, and to assess student acquisition of those skills the following general strategies are suggested.

First, students should be observed in natural settings by teachers, parents and other adults during several different types of activities to determine general levels of motoric functioning. This should include general assessment of student performance on functional motor skills and other developmental motor skills which could be taught through the Obstacle Course Activity. As stated earlier, it is hoped that teaching the skills delineated in the task analysis will result in the improved student performance on more functional skills. Teachers wishing to implement this program should base instruction on an initial assessment of the student's performance of functional motor skills.

Second, after an initial assessment of student performance of functional motor skills in natural settings, a teacher may then require the student to attempt to complete the obstacle course as described earlier. Using the task analysis, a teacher can record the students' performance of the desired actions on a data sheet (similar to that used in Part IV) to determine an instructional baseline. When a student performs a desired action correctly on three consecutive days, a teacher may proceed to the next

step in the task analysis. It is also recommended that students attempt to complete the entire obstacle course even though they may lack the skills to do so independently.

Third, teachers may conduct periodic probes in the same manner as the initial baseline to monitor student acquisition of the desired actions.

Fourth, teachers are urged to follow up teaching in the Obstacle Course Program with assessment of the student's performance of functional skills in natural settings during several different types of activities. This fourth step is recommended for two reasons: 1) it may allow a teacher to verify whether students involved in the obstacle course perofrm the skills of concern under other conditions; and 2) it may allow a teacher to verify whether student performance of functional motor skills has been improved.

B. Suggested Teaching Procedures

The reader is referred to Part IV (The Handwalking Program). The same basic teaching procedures are recommended for use in the Obstacle Course Program.

C. Facilitory/Inhibitory Events

Considerations regarding the use of facilitory/inhibitory events described in Part III (The Hand Control Program) are also pertinent to the Obstacle Course Program. That is, it is suggested that facilitory/inhibitory events are chosen in conjunction with a therapist. The following facilitory/inhibitory events and the actions for which they may be effective represent only selected examples and are presented for purposes of illustration.

Suggested Facilitory/Inhibitory Events

Skill: Teaching a student to assume and maintain a four point stance

on hands and knees with his/her hands placed under the shoulders and his/her knees placed under the hips.

1. Suggested events for use prior to the Obstacle Course Activity

   A. Require the student to stretch his/her arms out with dental dam wrapped around the student's forearms.

   B. Require the student to walk with dental dam wrapped around his/her thighs.

2. Suggested events for use during the Obstacle Course Activity

   A. Provide the student with visual and/or tactile targets for correct hand and knee placement.

   B. Provide the student with surfaces of varying width to creep over in a four point stance.

Skill: Teaching a student to creep over a carpeted 2 foot wide and 4 foot long 2-way rocker board.

1. Suggested events for use prior to the Obstacle Course Activity

   A. Wrap dental dam around the student's forearms and require the student to stretch his/her arms apart, away from midline several times.

   B. Require the student to walk with dental dam wrapped around his/her thighs.

2. Suggested events for use during the Obstacle Course Activity

   A. Provide the student with visual and/or tactile targets for correct hand and knee placement.

   B. Provide the student with surfaces of varying width to creep over in a four point stance.

Skill: Teaching a student to maintain his/her back parallel to the surface while creeping in a four point stance.

1. Suggested events for use prior to the Obstacle Course Activity

   A. Do range of motion with the student's legs while the student is sitting on a barrel or on a backless chair.

   B. Require the student to handwalk while the student is kneeling on a scooter board.

2. Suggested events for use during the Obstacle Course Activity

   A. Apply stretch pressure along the student's spine while the student is creeping in a four point stance.

   B. Provide light touches under the student's belly while the student is creeping in a four point stance.

D. Concurrent Training of Other Skills

The reader is again referred to Part IV (The Handwalking Program) for suggested procedures regarding the concurrent teaching of objectives from curricular areas other than motor skills. The procedures suggested in Part IV (and in Figure 3 of Part IV) are also recommended for use in the Obstacle Course Program.

Summary

In Part V curricular suggestions for the teaching of developmental motor skills through the use of a game activity, the Obstacle Course Program, were described. It is hoped that use of such an activity will result in student acquisition of important developmental motor skills and in students' improved motoric performance on functional motor skills. Teachers and other potential users of this program were urged to assess student performance on functional motor skills in order to insure that the teaching of developmental motor skills is directly related to improvements in functional motoric abilities.

TOWARD THE DEVELOPMENT OF A CURRICULUM FOR TEACHING NON-VERBAL COMMUNICATION SKILLS TO SEVERELY HANDICAPPED STUDENTS: TEACHING BASIC TRACKING, SCANNING AND SELECTION SKILLS

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August 1976[2]

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[1]The authors wish to express appreciation for the contributions of Joan Brynildson, Bonnie Buckley, Chris O'Neil, Marion Bauman, Julie Dellinger and Les Taylor toward the production of this curriculum. Particular appreciation is expressed to Linda Fischer and Nancy Dodd.

[2]This paper was supported in part by Grant No. OEG-0-73-6137 to the University of Wisconsin-Madison from the Department of HEW, USOE, Bureau of Education for the Handicapped, Division of Personnel Preparation, Washington, D.C. and in part by Federal Contract No. OEC-0-74-7993 to the Madison Public Schools.

OUTLINE

SECTION I: ISSUES RELATED TO TEACHING NON-VERBAL COMMUNICATION SKILLS

A. Communication Skills as Vehicles for Participation in Environmental Changes

Children learn to effect changes in their developmental environments by using communication skills. Rudimentary forms of communication skills are usually developed in early infancy. Most infants, for instance, learn in the first weeks of life that crying will gain a mother's or a father's attention. A toddler may learn to tug at mama's skirt to communicate the desire for a drink of water. A two-year-old may learn to say "Bye-Bye" to request a trip in the family car. Children use communication skills to request, to demand and to report. Adults may be more sophisticated, but their objectives are similar. They also use communication skills to request, demand and report. The communications of both children and adults also fit into patterns. Requests, for instance, are usually in the form of questions; demands are usually in the form of emphatic statements; and incidents are generally reported narratively.

Severely handicapped students often lack even the rudimentary forms of communication skills. Therefore, severely handicapped students experience great difficulty making requests, demands and reports. Consequently, these students lack essential tools for effecting changes in their developmental environments and others often determine for them what their needs are, and if, how, and when those needs will be met. For example, teachers determine a wide variety of events for severely handicapped students during a school day. Teachers often determine where the students should sit, how they should play, what they should play, what they should be doing while they are working or playing, when they should eat and if and

when their positions should be changed. Families of severely handicapped students also make many determining decisions. The student with insufficient communication skills, therefore, learns to function in an environment that is lacking in self-determination and dignity.

Severely handicapped students have a right to determine the conditions of their own lives and to effect their environments according to their individual preferences. Since this is difficult to do without adequate communication skills educators need to assess communication skill deficits, particularly verbal skill deficits, and design instructional programs that can be used to allay these deficits. These communication skill programs are needed for each student regardless of the degree or form of the physical or mental functioning deficits so they can have volitional effects on the people and daily activities of their life space.

B. Verbal vs. Non-Verbal Communication Skills

The ability to verbalize has been and will remain the most efficient and effective way to communicate to a variety of persons in a variety of interpersonal settings. As educators our initial objectives should be focused toward providing the experiences which are vital to establishing verbal language skills. Severely handicapped students, however, often manifest a variety of structural impairments and correlated skill deficits that decrease the probability that they can be taught to use vocalizations as the primary mode of communication. Anomalies in the oral structure, a dearth of crucial language experiences and severe delays in motor development are only a few of the factors that contribute to deficits in verbal language development.

A twelve-year-old student who attends school for six hours a day and has a verbal language repertoire which consists of "Hi" on entering

the classroom and "Bye" on leaving is in dire need of additional communication skills. There are also students who do vocalize, but who cannot be understood because the sounds are unintelligible. Until vocalizations become meaningful to other persons, the student does not possess functional verbal communication skills. Thus, while educators should continue to speculate about the students' future verbal language development and to provide appropriate instruction to improve verbal communication, they must also realize that concrete answers to the queries: "When will he learn to talk?" "When will we be able to understand him?" or "What if he does not learn to speak?" are currently unavailable.

The educationally relevant question for a functionally non-verbal severely handicapped student over the age of five or six probably should be: "What effective systems of communication can we teach now?" We need to design alternative communication systems for severely handicapped students that utilize components they can master. If a student can move his hands, his eyes or any other part of his body reliably, teachers can use those movements to develop communication skills. This will make it possible for the student to participate in the events of his present life space.

Certainly strategies designed to teach verbal communication skills to non-verbal students should be implemented to the extent that they are feasible and effective. However, this is a long term undertaking with many severely handicapped students and very often these same students can develop effective alternative communication skills that can be used in the interim. What is advocated here is:

a) a curriculum designed to teach students non-verbal communication skills which can be utilized immediately in functional ways; and

b) a curriculum which integrates present verbal and non-verbal skills into comprehensive communication systems.

C. Selected Dimensions of Non-Verbal Communication Skills

Manual Communication

One of the most commonly and generally accepted mediators of non-verbal communication is manual sign language. Most adults in our society have observed hearing impaired individuals of normal intelligence communicating very effectively with their hands and have marvelled at the comprehensive and the intricacy of the maneuvers and the speed with which those movements were executed. However, when referring to manual sign language for severely handicapped students, references to much less complicated communication mediators are in order. That is, it may not be practical to attempt to teach complex finger spelling skills to many severely handicapped students. However, attempts to teach selected components of the American Sign Language system seem reasonable.

An important advantage of using manual signs is that many of the gestures are motorically produced so that they resemble the functional or symbolic meaning of the concept they represent. For example, "house" is represented by two hands forming an inverted "V", which depicts the roof of many houses. "Want" is expressed by outstretched arms and hands being pulled toward the body, which represents bringing something towards oneself. The relationship between gestural representation and meaning tends to facilitate the acquisition and functional utility of manual sign systems. A second advantage of manual signs is that hands and arms are similar to the voice in that materials external to the body are not required for communication.

A major disadvantage of manual signs is that all persons who come in contact with the non-verbal communicator must understand the meaning of the signs which are used. A second disadvantage of manual signs when used by multiply handicapped students is that motor disabilities often exist which inhibit or preclude the formation of crucial hand, arm, trunk or finger movements.

Communicative Codes

The phrase communicative codes refers to communication mediators that are based upon the motor skills currently available to a particular student. If confronted with a student whose only available motor skills are to move a finger, or to blink an eye, or to tap a toe, it is incumbent upon the educator to design instructional programs that allow those motor skills to be used as communicators. More specifically, hand raising can be an indicator of a "yes" response to questions, and a hand which is not raised can indicate a "no" response. When asked, "Do you want a drink?", the student can indicate a preference through the hand raising code. Obviously, communicative codes can be as varied as the capabilities of each student (i.e., hand codes, head codes, leg codes, trunk codes, finger codes, eye codes).

As with manual signs, codes have the advantage of being built into the communicator's body. A second advantage of codes is that physical disabilities do not preclude their use since the code is built upon existing motor skills. However, one important disadvantage of codes is that persons who communicate with the coding student must have specialized knowledge of the code in order for it to be a functional communication mediator. Another disadvantage of communication codes is that they usually give the severely handicapped students only limited control over the environment, because the student still needs

to rely on others to ask appropriate questions. Initiative codes can be developed which afford students more control, but these require more complex cognitive skills.

Communication Boards and Booklets

Communication boards or booklets are communication mediators which are composed of representations of objects, persons, and/or concepts. Communication boards and booklets can contain such representations as photographs, drawings, miniatures, and symbols. Information on communication boards and booklets can be presented consecutively, i.e., one picture per page or per board, or concurrently, i.e., four pictures per page in a booklet of many pages.

A communication board or booklet requires the student to indicate preferences or answer questions by identifying the appropriate representation. As an example, a student may have a board containing pictures of a bathroom, a drink, his mother, and a toy and to indicate the need to go to the bathroom he would point to or touch the picture of the bathroom.

The communication board or booklet can be simple or complex, depending upon the abilities and needs of the user. Regardless of the degree of complexity, the board or booklet can be used to initiate communication skills, enhances the students' ability to self determine and concommitantly enhances self dignity.

It should be noted and emphasized that users of communication boards and booklets must be capable of scanning all of the choices available and then selecting one of the representations. Scanning may be visual for those students with visual capabilities, and for non-visual students alternate modes of scanning may be developed (e.g., tactile).

One major advantage of communication boards and booklets is that most persons can understand the meanings of the representations. If the representations are not generally clear, explanatory printed labels can be placed nearby.

A disadvantage of communication boards and booklets is that they are vehicles for communication which are not part of an individual's body and thus pose mobility problems. For those students who are in wheelchairs much of the time, communication boards may be placed directly on lap trays to increase mobility of the vehicle. However, students must maintain possession of the board or booklet at all times or the mediator of communication is lost.

D. Selecting a Communication System

A communication system, as the phrase is used here, refers to the constellation of factors that must be present and operating in order for two persons to communicate information. All persons, regardless of sensory motor or intellectual functioning levels, can and must be taught to both provide information to, and receive information from, other persons. Obviously, if students are manifesting normal intellectual skills and are not encumbered with serious sensory motor difficulties, the development of appropriate communication skills is a relatively simple matter. However, as problems in the intellectual and the sensory motor domains accrue, the development of much needed communication skills becomes increasingly difficult.

Sensory motor considerations

The students to which this curriculum is directed are those who manifest severe sensory motor skill deficits and severe intellectual skill deficits. Thus, teachers of such students must develop communication systems that take into account functional physical channels that can be used to send and receive information as well as

the intellectual skills necessary to acquire and process information.

Chart I is presented as an example of the factors that should be considered when attempting to delineate and organize a program to teach a communication system to a student with severe sensory, motor and intellectual skill deficits. It depicts sample factors which may be encountered by the teacher. The factors the teacher includes in each section of the chart would be specific to the individual student. Preparing and referring to the chart may, therefore, act as a self-check to the teacher preparing the instructional program to insure that all relevant factors have been considered.

The phrase sensory skill deficit refers to the one or more sensory channels that are not functioning normally. For example, a student can be totally deaf, totally blind, insensitive or hypersensitive to tactile stimulation or any combination thereof.

The phrase functional sensory channel refers to the channel or channels that can be used by a student to receive external stimuli. For example, a student might be totally blind and deaf, but his olfactory, tactile and kinesthetic senses might be functional.

The phrase motor skill deficit refers to the one or more motor channels that are not functioning normally. For example, a student may not have arms or legs; may be completely immobile except for the ability to move a toe; may be severly spastic and non-verbal or any combination thereof.

The phrase functional student action refers to the movement or movements available to a student that might be used in communicative interactions. For example, if a student can only move his head, he should be taught to use his head movements to communicate.

The phrase tenable teacher cue refers to the cue or cues a teacher

CHART I

Sensory Motor Factors Related To Communication Skills

SENSORY SKILL DEFICITS	FUNCTIONAL SENSORY CHANNELS	MOTOR SKILL DEFICITS	FUNCTIONAL STUDENT ACTIONS	TENABLE TEACHER CUES	PRACTICAL COMMUNICATIVE MEDIATORS
Total Blindness; Partially Sighted	1) Auditory 2) Tactile 3) Kinesthetic	1) Poor Unassisted Ambulation 2) Stuttering	1) Verbal 2) Manipulative	1) Verbal 2) Visual Model 3) Tactile Model 4) Physical Priming	1) Modified Braille 2) Vocalizations 3) Manual/Gestural 4) Tactile Communication Boards or Booklets
Deaf	1) Visual 2) Tactile 3) Kinesthetic	1) Confined to Wheelchair 2) Poor finger Dexterity	1) Gross Manipulative Actions	1) Manual/ Gestural 2) Visual Model 3) Physical Priming	1) Codes using head nods, toe tapping, etc. 2) Communication Boards 3) Modified Manual/ Gestural
No Apparent Deficits	1) Visual 2) Auditory 3) Tactile 4) Kinesthetic	1) Confined to Wheelchair 2) Absence of Arms and Legs	1) Head and Trunk 2) Verbal	1) Visual 2) Verbal 3) Modeled 4) Physical Priming	1) Verbal 2) Codes using head nods and trunk movements 3) Communication Boards using a Head Pointer

might use that can be sensed by a student. For example, if a student is totally blind a teacher would provide cues that the student could hear and/or feel.

The phrase practical communicative mediator refers to the materials, vehicles, tools, objects, etc., that can function as a bridge between a communicator and a communicatee. Code systems, communication boards and booklets, gestures and signs are but a few examples of communicative mediators.

Other Considerations

The information required in order to complete Chart I is crucial when teachers attempt to delineate the constellation of factors required of an individualized communication system. However, in addition to the inventory of information needed to complete Chart I, other factors should also receive consideration.

First, severely handicapped students vary widely within as well as between all skill domains. For example, manual signs may not be a good choice of a mediator for a deaf student who also has poor finger dexterity. Perhaps the more appropriate mediator would be a communication board containing three dimensional representations.

Second, in the interest of developing dignity and self esteem, all students, regardless of their initial functioning levels, should be taught to initiate interpersonal interactions. Teaching students to react to the cues of others may be necessary, but it is not sufficient.

Third, whenever possible, students should be taught to use two or more mediators in that the range of communication possibilities increases dramatically when the functional use of several mediators is acquired. For example, a student may be using simple gestural mediators in the form of bringing his cupped hand to his mouth when a

drink is desired or pointing to his head when a hat is desired. Since the student has seemingly established a relationship between gesturing and receiving three dimensional objects, it might be desirable to extend the student's skills into a more elaborate gestural system. Or, a student may be taught to associate slides, pictures in books, and other visual representations with three dimensional objects. Then a visual communication board can be introduced which will enhance substantially the ability to communicate.

E. Selecting Initial Communicative Content

Severely handicapped students are usually going to acquire the use of fewer communicative elements than less handicapped or normal persons. Thus, extreme caution must be exercised in the selection of the content of any communicative system. The following are at least some of the basic factors that should be considered when teachers attempt to determine the individualized content of a communication system for a severely handicapped student.

General functional utility

General functional utility refers to words or actions that are not specific to any one situation or material. A few examples of words that have functional utility in relation to a variety of persons, concepts, objects, are "yes", "no", "want", "help", "stop", "more". Pointing to or touching skills are actions of general functional utility in that through those actions a student can delineate preferred foods, clothes, toys, persons, and settings.

Self care and maintenance

The student who learns to communicate basic body care needs and who can participate in their realization is obviously a more self-actualizing person. Thus, it is important to teach students to communicate when they want to be held or rubbed, when they wish to

eat, drink, sleep, use the toilet, dress, play in water, brush their teeth, etc.

Object, person and action labels

Initially, it might be useful to teach students to functionally use gestures, signs and pictures that represent classes or groups of objects, persons and actions rather than communicators that represent specific objects or persons. That is, a student initially might be taught to use a sign for drink and later be taught to indicate water, pop, juice or scotch.

Preference communicators

Strategies must be created that can be used to arrive at valid determinations of the individualized preferences of severely handicapped students. The delineation of preferences are important from practical as well as humane perspectives. That is, the utilization of preferred objects, actions and persons in instructional programs will probably result in faster progression through those programs. The following are suggestions that a teacher might consider when attempting to determine preferences:

1) Talk to the parents and obtain information related to:
   a) what the student likes to do at home;
   b) whether the student prefers to be with certain people; or
   c) whether the student prefers specific objects or activities.
2) Determine the physical interactions the student prefers:
   a) play with the student in activities parents indicated the student enjoyed; i.e., hugging, tickling, wrestling, bouncing on lap, handclapping games, singing, or piggy-back riding;

b) look for positive reactions from the student in each of the activities, especially facial or vocal expressions like laughing, cooing, or smiling;

c) formulate a list of the activities the student seems to enjoy; and

d) teach the student to communicate preferred physical activities.

3) Determine desired objects, persons, in the student's environment:

a) provide free play settings with varieties of objects and persons and allow the student to select from them; and

b) record the objects or persons the student selects to interact with and record the duration of the interactions.

In summary, the content of a communication system should be uniquely adapted to the sensory, motor, intellectual and social skills and the personal interests and preferences of each severely handicapped student. Student-initiated communication is a major objective and thus the objects, persons, and actions selected for inclusion in the instructional program of each student should be relevant to individual daily life experiences of each student.

It is crucial that teachers generate communication systems based upon the existing expressive skills of each student. If a student manifests difficulty executing precise finger movements, the selection of less precise signs or gestures might decrease frustration and increase functional and self-initiated use. In addition, it is quite probable that students might acquire the functional use of signs and gestures if those signs and gestures already have functional utility in relation to their motor repertoires. That is, the sign for drink resembles the motion of drinking from a cup or glass, the sign for want resembles the motion of reaching for an object.

SECTION II: ISSUES RELATED TO THE TEACHING OF TRACKING AND SCANNING SKILLS

A. Teaching Functional Skills

The skills that the severely handicapped student will acquire are limited by many factors. It is, therefore, essential that the concepts and tasks taught have long range functional validity.

Historically, many presumably educational programs generated for use with severely handicapped students have not met this criteria. They have, for instance, suggested or required the use of: artificial rather than functional tasks and instructional materials; a high degree inference; repeated practice strategies; and insufficient or developmentally irrelevant performance criteria (Brown, Nietupski and Hamre-Nietupski, 1976). In addition, such programs recommended:

a) low ratio (one teacher to one or two students) instructional arrangements used in controlled or programmed rather than natural environments; and

b) controlled very specific cues.

The proliferate and longitudinal use of such practices, strategies and assumptions has contributed to several unfortunate educational outcomes. There are students who can touch a pear as opposed to a banana when these cues are presented horizontally in a two dimensional frame on a mechanized teaching machine, but who cannot select a banana from a fruit array in a public grocery store. There are students who can perform a particular skill very well in reaction to cues provided by one person in a cubicle on the side of a classroom who will not or cannot perform the same skills when requested to do so by a different person in a public setting.

Unfortunately, additional examples of the longitudinal effects of inadequate educational strategies abound. It is now crucial that those

persons concerned with the provision of the best possible longitudinal educational services to severely handicapped students determine teaching strategies that maximize the development of the skills necessary to function as independently as possible in complex community environments.

This means designing programs that utilize these approaches when they are educationally sound but combine them appropriately with other approaches involving group instruction, natural settings and using a variety of cues, situations, settings and persons in authority.

Functional interpersonal communication skills are vital to the longitudinal development and personal dignity of severely handicapped students. Therefore, it is particularly vital that these communication skills be taught in ways that maximize their immediate as well as their longitudinal functional validity. In an attempt to maximize the functional validity and utility of the attending, tracking, scanning and selection skills of concern, it is recommended that the following instructional suggestions be implemented concurrently.

1) The use of one to one and clustered individualized instructional arrangements.

When instruction in a novel skill is initiated it is often appropriate to utilize one to one and clustered individualized instructional arrangements (Brown, Nietupski, and Hamre-Nietupski, 1976). These two arrangements afford acceptable or desired numbers of teacher-student and student-student communicative interactions. Obviously, a large number of communicative interactions in short periods of time (a repeated practice teaching strategy) often facilitates the initial acquisition of many important skills. For example, when a student if presented initially with a communication board it is not likely that he will manifest the skills necessary to use it in natural settings. A clustered individualized

instructional arrangement allows the teacher to offer a larger number of training trials in shorter periods of time than if she chose to use only naturally occurring settings in which to teach the skills of concern. In addition, the clustered individualized instructional arrangement allows the teacher to delineate and capitalize upon the unique functioning characteristics of each student. That is, some students might communicate best through the use of a touching action, others might communicate best through the use of a grasping action and still others might communicate best through the use of flashlights. Finally, clustered individualized instructional settings allow for the instruction of precisely described skills. Subsequently, less precise versions can be utilized in more natural environments.

2) The instruction and performance of skills in natural environments

A crucial component of communication skill acquisition is the ability of the teacher to secure the performance of these skills in conversational styles during a variety of the students' normal activities. More specifically, it is strongly suggested that students be taught and/or required to perform attending, tracking, scanning, and selection skills during music classes, physical education activities, self-help training, recreation and meal times; and at home, on the school bus, in stores and other extra school settings; and in the presence of a variety of adults and age or developmental peers and siblings. In an attempt to insure that students perform crucial skills in the environments in which those skills are functional a Recommended Criterion Performance component is included in Sections III, IV, and V. Stated another way, before a teacher concludes that a student has functional use of a

particular skill at least the following five criteria should be met:[3]

a) Students should perform the actions of concern in reaction to the cues of at least two additional persons

Often students will perform skills in reaction to the cues of one person in their life space and will not perform those same skills for other persons. Thus, parents, siblings, aides, babysitters, friends and others in ADDITION TO TEACHERS should be involved in the instructional process.

b) Students should perform the actions of concern using at least two different instructional materials

In an effort to guarantee student performance across a variety of materials, teachers should be alert to the use of materials as they appear in natural environments. For instance, toy objects, art materials, clothing, food and music materials, should all be utilized in the development of a particular skill. Many students will, for example, track a preferred toy or food item, but will not track a paintbrush. Obviously, students must learn to relate to as well as functionally use the variety of materials appropriate in a variety of natural settings.

c) Students should perform the actions of concern in at least two instructional settings.

Since students will be expected to perform most skills across many natural settings, it is critical that instruction or empirical verification occur in a variety of settings.

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[3]Within the Criterion Performance sections specific numbers are stated (e.g., two persons, five seconds). These numbers are only suggestive and should not be viewed as absolutes. Teachers will need to evaluate the needs of individual students and develop levels of criterion performance which best meet those needs.

Communication skills must be performed in school, at home, and in the community. Therefore, students should be expected to use communication skills to request food at lunch in school, at supper in the home, at dinner in a restaurant, etc.

d) Students should perform the actions of concern in reaction to at least two verbal or non-verbal language cues

In natural interactions, the codes, signs, gestures and words used often vary. Consequently, students should learn to react appropriately to a variety of different language cues. "Look at the man", "See the fellow", or "Watch the guy" should all indicate to students that they are required to visually attend to a man.

e) Students should perform the actions of concern at predetermined rates

If students are taught to perform actions correctly but require inordinate amounts of time to complete the actions, those actions may be non-functional in natural environments. All the people a student meets and wishes to communicate with may not be as patient as the teacher. Students must be required to complete actions within reasonable time intervals. It is recommended that the latency, response time and inter-response time necessary to make each communication skill functional in several natural environments be determined in advance of instruction.

3) Teaching the self-initiated use of acquired communication skills

Many students learn to perform important developmental skills when cues to perform those skills are provided by persons in authority. Crucial considerations related to the development of important self-initiation skills are often minimized or neglected

when instructional programs are designed for severely handicapped students. In an attempt to allow for the development of self-initiated communication skills, two strategies seem tenable. First, students should be taught to communicate information when they are prompted to do so by others. For example, it is quite useful if a non-verbal student can point to a picture of a bathroom on a communication board in response to the cue, "Where do you want to go?" Second, it is necessary to teach students to communicate in the absence of prompts from persons in authority. That is, it is more useful if a non-verbal student can wheel over to a parent or teacher and point to a picture of a bathroom

B. Instructional Procedures

In each part of each phase in the instructional sequence sections (Sections III, IV, and V) there is a component entitled Instructional Procedures. The information contained in this component is related to the "how" of instruction. That is, how does a teacher go about teaching the specific skills of concern. Several generally accepted factors related to the "how" of teaching severely handicapped students are presented below.

1) Natural consequation

There is little doubt that the consequences of actions effect the future characteristics of those actions. If teachers intend to teach or effectuate changes in the actions of students, it is crucial that "if-then" relationships (contingencies) between actions and consequences of actions have subjective meaning to their students. The position offered here is that whenever possible consequation should be logically and naturally related to actions. For example, if the desired student action is tracking

a toy train, then a natural consequence for correctly tracking the train is to let the student play with the train. When a student uses a communication board to request a drink of water, then the teacher should supply that drink of water.

2) Correction procedures

Obviously teachers should provide context and verbal and non-verbal cues that inform students when and what to do. If the desired actions do not occur within a reasonable period of time (latency) it is suggested that the teacher repeat the cues and then model the appropriate actions. If the desired actions still do not occur, it is suggested that the teacher repeat the cues and provide the physical assistance (primes) and other assistance (prompts) necessary to secure the actions of concern. Subsequently, all assistance should be removed (faded) and the actions should be performed in reaction to naturally appropriate cues.

Example: Assume that a student does not track a moving pinwheel. The teacher slowly moves the pinwheel horizontally in front of a student and says, "Follow the pinwheel." If the student does not perform the desired tracking skill, the teacher repeats the cue and demonstrates a proper action by pointing to the pinwheel as it moves. If the student still does not track the pinwheel, the teacher repeats the cue and primes the desired action by placing a hand on the head (or hand) and moves the head (or hand) appropriately. Subsequently, all assistance is removed until the student tracks the pinwheel unassisted.

C. Other Considerations

The Phases, Parts and Steps of the suggested instructional sequence in Sections III, IV and V are intended to progress along an easy to

hard continuum. Many of the actual determinations of level of difficulty were based upon at least the following assumptions:

1) It is generally easier for students to perform selected actions in relation to objects or persons if those objects or persons are presented initially within reach as opposed to out of reach.

2) It is generally easier for students to perform selected actions in relation to objects and persons if those objects and persons are presented initially at midline at eye level and gradually moved to other positions.

3) It is generally easier for students to perform selected actions in relation to objects and persons if those objects or persons initially do not cross midline (from left to right) or eye level (from above to below).

4) It is generally easier to secure attending to objects when those objects are placed at points to which the student is actively attending.

The instructional sequences have been designed so that initial Phases require progress through small increments of a particular skill. This often results in repetition; but, repetition is essential in order to establish many basic actions. During later Phases of the sequences, factors such as "within and not within reach" are telescoped into one Phase based upon the assumption that students have acquired the skills necessary to adapt quicker to progression. However, teachers should assess performance empirically at each part of a sequence in order to make progression adaptations and sequence refinements for individual students.

Certain parts of the sequences contain steps which are exactly the same as those of a previous part. In such situations, the reader is referred to the earlier part of the sequence.

Finally, example activities have been provided for each part of a sequence and hopefully will clarify critical factors. The reader is asked to please note the variety of cues, objects, settings, and instructors which have been utilized in the examples of activities.

D Glossary of Terms

There are many terms and phrases that are specific in meaning to the context of this manuscript. Thus, it seems appropriate to attempt to communicate in a cursory manner the suggested meanings of several important terms and phrases. Hopefully, more explicit meanings can be communicated within the context of an instructional setting:

1) Tracking refers to discrete actions that either follow a moving object or person or follow the path of a moving object or person.

2) Awareness/attending refers to discrete actions which indicate the sensory perception of objects or persons.

3) Scanning refers to discrete actions which indicate sensory awareness of parts of an object or person; or the individual components of an array of objects or persons.

4) Selection refers to actions which communicate that a choice or preference has been indicated from a number of available options.

5) Discrete Actions refers to movements which are distinct and represent the performance of a predefined skill.

6) Midline refers to the plane which divides a person bilaterally into vertical right and left halves.

7) Eye Level refers to the plane which extends outward horizontally from a person's eyes when the head is level.

8) Within Reach refers to an object or person that can be tactilely acknowledged by a person without displacement of the total body.

9) Not Within Reach refers to an object or person that cannot be tactilely acknowledged without displacement of the total body.

10) Modality refers to the channels of sensation; i.e., vision, audition, tactile, olfactory, kinesthetic, gustatory.

11) Continuous Activation refers to a condition in which an object or person provides constant input to at least one sensory modality.

12) Intermittent Activation refers to a condition in which an object or person provides periodic and/or recurrent input to at least one sensory modality.

13) Barrier refers to something which impedes sensory perception of an object or person.

14) Transparent Barrier refers to a barrier which allows the sensory perception of an object or person through at least one sensory modality.

15) Opaque Barrier refers to a barrier which obscures an object or person from at least one sensory modality.

16) Solid Barrier refers to a barrier which totally obstructs an object or person from all sensory modalities.

17) Partially Hidden refers to a condition in which a barrier obscures or obstructs only a part of an object or person.

18) Totally Hidden refers to a condition in which a barrier obscures or obstructs an entire object or person.

19) Concurrent refers to the presentation of two or more objects or persons at the same time.

20) Consecutive refers to the presentation of two or more objects or persons but one is presented after the other.

21) Defined Sequence or Cycle refers to a condition in which the order of presentations remains the same each time a sequence is repeated.

22) Representations refers to a sign or symbol of an object or person, (e.g., a photograph, a drawing, a miniature replication, a printed word, a bliss symbol).

23) Referent refers to the object or person that a representation represents (e.g., a picture of a boy (representation) represents a real boy (referent)).

NOTE

DANGER: HARMFUL IF VIEWED AS A KITCHEN TESTED RECIPE

THIS NOTE IS INTENDED TO SERVE AS A WARNING AND A PLEA TO THOSE WHO MIGHT ATTEMPT TO USE THE FOLLOWING INSTRUCTIONAL SEQUENCES AS RECIPES. THE SEQUENCES ARE NOT DESIGNED TO BE SWALLOWED, DIGESTED AND REGURGITATED. SEVERAL PERSONS WHO HAVE ATTEMPTED TO FOLLOW PARTS OF THE SEQUENCES AS THEY WOULD FOLLOW RECIPES HAVE BECOME VIOLENTLY ILL WHEN THEY REALIZED STUDENTS DID NOT ACT AS ANTICIPATED. EVEN KITCHEN-TESTED RECIPES FAIL IF SPICES ARE NOT INCLUDED. DO NOT FORGET TO ADD CREATIVITY, INGENUITY, CONCERN AND DEDICATION.

THIS PARAGRAPH HAS BEEN INCLUDED IN A SINCERE EFFORT BY THE AUTHORS TO EMPHASIZE THE NEED FOR CREATIVITY AND INGENUITY FROM THOSE WHO MAY USE THESE INSTRUCTIONAL SEQUENCES. ALL COMPONENTS OF THE INSTRUCTIONAL SEQUENCES AND THE ORDER IN WHICH THEY ARE TAUGHT MUST BE ADAPTED AND MODIFIED FOR INDIVIDUAL STUDENTS.

SECTION III: ASSESSMENT OF RUDIMENTARY VISUAL SKILLS

A. A Rationale for Verifying Rudimentary Visual Skills

This section is concerned with severely handicapped students who are capable of acquiring information through visual channels. Visual fixation, tracking and scanning are critical skills basic to acquiring, processing and controlling the input of visual information. Most students of human development consider the controlled input of sensory information critical to the development of a comprehensive visually dependent communication system. Among these critical skills visual fixation is fundamental to the more sophisticated visual skills of tracking and scanning. Therefore, the first task is to assess the student's ability to fixate on persons and objects.

B. The Need for Comprehensive and Longitudinal Intervention

Non-handicapped students are usually routinely screened for vision problems and, when necessary, short term (or episodic) professional intervention is implemented. This episodic intervention works very well for the majority of students. It is not functional, however, with severely handicapped students whose motor, cognitive and behavioral problems often make typical assessment instruments nonapplicable. Severely handicapped students require long periods of time and careful observation from parents, teachers and possibly professionals such as optometrists and opthamologists to determine their visual functioning skills. Obtaining assessments from many professionals may not be practical, however, because of the extended time and expense involved. A viable alternative or supplementary strategy for determining these skills that can be implemented primarily by teachers and parents, who have sufficient time to observe the student is, therefore, a valuable tool.

C. A Rudimentary Visual Skill Assessment Strategy

Fixation, tracking and scanning skills are considered necessary for reception and processing of visual stimuli. A strategy for assessing basic visual skills which may be implemented by the teacher is presented below. Hopefully, it will provide the user with information that will make it possible to assess existing visual skills and will provide a longitudinal perspective and suggested intervention techniques that may facilitate the development of these vital visual skills.

General considerations for presentation of objects and persons are:

Materials: Size, color, pattern and complexity should be considered. Large objects (one to six inches in diameter or width) may facilitate fixation and brightly colored objects may facilitate initial attending. Complex patterns may facilitate maintaining attention and complex structure (for instance, moving parts) may facilitate attracting and maintaining attention. Students demonstrating skills within Levels II and III are probably also exhibiting discriminations of human faces and therefore persons as well as objects should be utilized as instructional materials.

Sensory Modality Use: Multi-sense strategies may be employed while initially attempting to verify visual skill development. Objects may be presented which provide auditory as well as visual input; e.g., music boxes, bells, chimes. However, additional sensory input must be eliminated at some point to accurately assess the student's use of the visual mode to perform the skill.

Use of Preferred Objects: The use of objects or persons for which the student has a demonstrated preference may facilitate assessment. To ensure that students can perform skills across objects and persons, non-preferred objects and persons should also be employed soon after students have demonstrated acquisition of the skills in relation to preferred objects and persons.

The Speed of Objects: The speed at which objects move is a critical factor in the development of tracking skills. Teachers must experiment with varying speeds in order to determine the most appropriate presentation speeds for individual students. Speeds must be varied in order to verify the existence of skills across speeds.

The actions described in the Anticipated student actions and Recommended Criterion Performance components are tentative manifestations of fixation and pre-tracking skills. It is the subjective decision of each individual teacher whether fixation is or is not occurring. It is recommended that the teacher who is without sophisticated electronic equipment and professional medical assistance use delineated students actions as indicators of the desired skills.

AN OVERVIEW OF A STRATEGY FOR VERIFYING RUDIMENTARY VISUAL SKILLS

RUDIMENTARY VISUAL SKILLS: Level I

Component A: Verification of the skills necessary to respond to light stimulation

Component B: Verification of Level I Fixation Skills and Associated Curriculum Strategies

Component C: Verification of Level I Pre-Tracking Skills and Associated Curriculum Strategies

RUDIMENTARY VISUAL SKILLS: Level II

Component A: Verification of Level II Fixation Skills and Associated Curriculum Strategies

1) Fixation
2) Focusing

Component B: Verification of Level II Pre-Tracking Skills and Associated Curriculum Strategies

RUDIMENTARY VISUAL SKILLS: Level III

Component A: Verification of Level III Fixation Skills and Associated Curriculum Strategies

1) Fixation
2) Focusing

Component B: Verification of Level III Pre-Tracking Skills and Associated Curriculum Strategies

RUDIMENTARY VISUAL SKILLS: Level I

Component A: Verification of the skills necessary to respond to light stimulation.

The primary purpose of Component A is to empirically verify that students can orient to a variety of artificial and natural light sources.[4] Strategies a teacher might use to verify the skills necessary to orient to light stimuli are presented below. Obviously, the activities which teachers actually utilize will be unique to the individual characteristics of each student and should be parts of or incorporated into the mainstream of the total curriculum.

Orienting, either toward or away from light, is a basic visual skill found in most humans. If students cannot make gross light distinctions; i.e., if students do not respond differentially to light/dark differences the teacher may wish to consider emphasizing some other sensory input channel for communication purposes. However, if students do not exhibit these most rudimentary visual skills, they may be referred to as functionally blind.

Suggested Teacher actions: It is suggested that a teacher engage in activities similar to those presented below in an attempt to determine if students are manifesting the basic skills necessary to orient to light.

a) In a darkened room the teacher can shine a flashlight (3 volt) from an angle 45° to the right or left of the midline position and from a distance of two to three feet at eye level toward the eyes of the student.

[4] In this context the phrase 'orient to' refers to any movement of the student's head, body and/or eyes toward or away from light.

b) When the room is bright with sunlight, the teacher can bring the child into the room from a darkened hall or adjoining room.

Anticipated student actions: If students exhibit any of the following actions, it can be inferred that at least some of the skills necessary to orient to light may be present:

a) The students move their bodies, heads, and/or eyes toward the light source;

b) The pupils of the eyes constrict upon contact with a directed light;

c) The students make defensive movements with their bodies, head, and/or eyes away from the light source; or

d) The students exhibit a general quieting of their body activity.

Recommended Criterion Performance: It is recommended that students be required to orient to at least one type of artificial light (e.g., flashlight) and to one type of natural light (e.g., sunlight) on three consecutive occasions. Orienting includes any movement of head, body or eyes toward and/or any movement away from the light source.

Suggested Curriculum Strategies: As has been stated previously, the primary purpose of Component A is to verify the existence of an orienting reaction to light. It has not yet been determined if it is possible to teach such orienting reactions reliably. Therefore, Component A is purposeful only as a test for the presence of

orienting reactions and curriculum strategies are not included.

Component B: Verification of Level I Fixation Skills and Associated Curriculum Strategies.

The primary purpose of Component B is to verify the presence of a number of the visual skills labeled Level 1 Fixation skills. Depending upon the presence and the degree of Level I Fixation skills, the teacher may wish to pursue three distinct instructional plans. Specifically these plans are:

1) When the Suggested teacher actions are implemented with repeated and varied presentation of objects and the students do not act in any of the ways delineated in Anticipated student actions, the teacher may wish to consider other sensory input channels for communication purposes. That is, the students do not react differentially to object presentations vs. non-presentation and may be referred to as functionally blind.

2) When the Suggested teacher actions are implemented and the students perform any or all of the Anticipated student actions, but do not perform the specified actions at Recommended Criterion Performance, it may be appropriate to attempt to teach Component B skills as outlined in Suggested curriculum strategies below.

3) When Suggested teacher actions are implemented and the student performs all of the actions outlined in Recommended criterion performance, it is suggested that the teacher refer to Level II Fixation skills.

Again, the activities used by the teacher to verify skill levels will be unique to the individual characteristic of each student and

should be parts of, or incorporated into, the total curriculum of each student.

Suggested teacher actions: It is suggested that the teacher use the prescribed activities as an indication of the three instructional plans to pursue. The teacher can present a variety of objects (e.g., food, geometric and patterned configuarations, toys) one at a time to a student. The teacher can bring each object from a hidden location to a postion within a span of four to twelve inches from the student at eye level in the midline position.

Anticipated Student actions: Generally, it is anticipated that performance of any of the actions described below will involve a latency of less than five seconds and that the duration of the action will be at least one second.

a) The student exhibits a general quieting of body activity and gross motor movement.

b) The student raises her eyelids, eyebrows and/or wrinkles her forehead.

c) The student aligns his head with the presented object.[5]

d) The student aligns at least one eye with a stationary object.

e) The student maintains alignment with a stationary object.

Recommended Criterion Performance: It is recommended that the student meet the criteria defined below with at least two objects and on three consecutive occasions with each object:

a) The student will align her head and at least one eye with the presented object and maintain the alignment.

b) The latency of the alignment action will not exceed five seconds.

[5]The term 'align' as used throughout Section III could also be referred to as making eye contact with the object.

c) The duration of the alignment action will be at least one second.

d) The student will perform the desired actions with the objects presented at least at two distances; one distance within a four to eight inch span (short) and the other distance within and eight to twelve inch span (long).

Suggested Curriculum Strategies: Curriculum strategies are described generally in Suggested teacher actions. Variation and repetition of the teacher actions as dictated by the individual characteristics of each student will hopefully facilitate the development of criterion performance. The following are additional recommended curriculum strategies:

a) Appropriate fixations might be most probable when objects are from one to six inches in diameter.

b) The use of brightly colored objects, especially red and yellow is suggested.

c) Initially the teacher should present the object only at the midline position.

d) Objects which have moving parts should be utilized.

e) Objects which have complex patterns, such as a checkerboard, plaid material, or a mosaic should be utilized.

Component C: Verification of Level I Pre-Tracking Skills and Associated Curriculum Strategies.

The primary purpose of Component C is to verify the presence of a number of visual skills organizationally labeled Level I Pre-Tracking Skills. Depending upon the presence and the degree of Level I Pre-Tracking skills, the teacher may wish to pursue three distinct instruc-

tional plans. Specifically these plans are:

1) When Suggested teacher actions are implemented, the initial actions of the students may be to fixate upon the presented object.[6] If the Suggested teacher actions are implemented with repetition and variation and the students do not fixate on the presented object, it is suggested that the teach. refer to Level I Fixation, as the students probably do not have the prerequisite fixation skills.

2) When the Suggested teacher actions are implemented and the students perform any or all of the Anticipated student actions, but they do not perform the specified actions at Recommended Criterion Performance, it may then be appropriate to attempt to teach Level I Pre-Tracking skills as outlined in Suggested curriculum strategies.

3) When Suggested teacher actions are implemented and the student performs all of the actions as outlined in Recommended Criterion Performance, it is suggested that the teacher refer to Level II, Pre-Tracking skills.

Again, activities which teachers utilize will be unique to the individual characteristics of each student and should be part of, or incorporated into, the total curriculum.

Suggested teacher actions: In an attempt to determine which of the three plans to pursue it is suggested that the teacher engage in activities such as presenting a variety of objects one at a time. Objects should be brought

[6] 'Fixation' as the term is used in Component C is referred to as performance of the anticipated student actions described in Level I Fixation. The student need not be performing at criterion level, but should be manifesting at least some of the student actions described in Component 3 of Level I.

from a hidden location

to a position within a span four to twelve inches from the student at eye level and in the midline position. The teacher can also move the object in an arc to the left or to the right from midline keeping the object approximately the same distance from the eyes at all points in the arc.

Anticipated student actions: The student may initially fixate on the presented object and then begin to follow the object as it moves. The performance of the pre-tracking actions should begin to occur within five seconds after the fixation occurs. The following are additional student actions which may be indicative of Level I Pre-Tracking skills:

a) When the presented object moves, the student may follow the moving object with his head and eyes.

b) The student may follow the object through short arcs (30°).

c) The head and eyes may move in an uncoordinated manner while the object is being followed by the student.

d) The student may easily lose visual contact with the object; i.e., while tracking the object they may suddenly cease eye contact with the object.

Recommended criterion performance: It is recommended that students should meet the criteria listed below with at least two objects and on three consecutive occasions with each object:

a) The student will fixate on the presented object and will follow the object with head and eyes as it moves through at least a 30° arc.

b) The latency of the pre-tracking actions will not exceed five seconds.

c) The students should perform the desired actions when the objects are presented from at least two distances; one distance within a four to eight inch span (short) and the other distance within an eight to twelve inch span (long).

Suggested curriculum strategies: Curriculum strategies are described generally in Suggested teacher actions. Variation and repetition of the teacher actions as dictated by the individual characteristics of each student will hopefully facilitate the development of criterion performance. The following are additional recommended curriculum strategies:

a) The curriculum strategies specifically delineated in Level I Fixation are also useful for Level I Pre-Tracking.

b) The teacher may initially wish to use physical priming on the head and/or shoulders to assist students to follow the paths of objects.

c) The teacher may vary the speed of the moving objects to determine a rate of speed which allows for optimal student performance.

d) The teacher may use objects which are dangled on a string. This action may help alleviate the problem of student eye contact with the teacher, rather than with the presented objects.

e) The teacher may wish to stand behind or next to a student when presenting objects to avoid the possibility that the student might make eye contact with the teacher, rather than with the presented object.

RUDIMENTARY VISUAL SKILLS: Level II

Component A: Verification of Level II Fixation Skills and Associated Curriculum Strategies

The primary purpose of Component A is to empirically verify the presence of a number of visual skills organizationally labeled Level II Fixation Skills. Many Level II Fixation skills develop concurrently and are obviously interrelated. However, an arbitrary division of two subskill clusters has been made below for organizational purposes. The first subskill cluster is designed to examine the ability to fixate on a stationary object. The second subskill cluster is designed to examine the ability to focus. Each subskill cluster has its own set of teacher actions, Student actions, recommended performance criteria and suggested curriculum strategies. Depending upon the presence and the degree of Level II Fixation skills, a teacher may pursue two distinct instructional plans. Specifically:

A) When Suggested teacher actions are implemented and students perform any, or all, of the Anticipated student actions but they do not perform the specified actions at the Recommended criterion performance, it may then be appropriate to attempt to teach Level II Fixation skills as outlined in Suggested curriculum strategies. This instructional plan is suggested for each of the two subskill categories.

B) When Suggested teacher actions are implemented and the students perform all of the actions outlined in Recommended criterion performance for each of the subskill areas, it is recommended that the teacher refer to Level III, Fixation skills.

1) Subskill Cluster: Fixation

Suggested teacher actions: It is suggested that the teacher engage in activities similar to those described in this section in an attempt to determine which instructional plan should be pursued. The teacher can present a variety of objects, one at a time. The teacher can bring each object from a hidden location to a stationary position within a span of twelve to twenty-four inches from the student at eye level in the midline position.

Anticipated student actions: Generally, it is anticipated that performance of the following desired actions will be preceded by a latency of approximately one second and the desired action will have a duration of at least three seconds:

a) The students exhibit A, B, and C of Anticipated student actions described in Level I, Component B, Fixation skills;

b) The students align both of their eyes with a stationary object;

c) The students maintain alignment of both eyes with the stationary object; and

d) It is anticipated that at Level II Fixation skills students will begin to fixate at objects which are not presented by the teacher and which are more than two feet away.

Recommended Criterion performance: It is recommended that students meet the following criteria in relation to at least two objects and on three consecutive occasions with each object:

a) The students will align their head and both eyes with the presented object.

b) The students will maintain the alignment of both eyes with at least 50% of the objects presented (the other objects may require the alignment of only one eye).

c) The latency of the fixation actions will not exceed two seconds.

d) The duration of the fixation actions will not be less than three seconds.

e) The student will perform the desired actions with the objects presented at least at two distances; one distance within a twelve to eighteen inch span (short) and the other distance within an eighteen to twenty-four inch span (long).

Suggested curriculum strategies: Curriculum strategies are described generally in Suggested teacher actions. Variation and repetition of the teacher actions as required by the individual characteristics of each student will hopefully facilitate the development of criterion performance. The curriculum strategies delineated in Level I Fixation should be useful for Level II Fixation when presented under Level II conditions.

2) Subskill Cluster: Focusing

Suggested teacher actions: In addition to adhering to the actions delineated in Subskill Cluster: Fixation, the teacher might consider the following:

When a student is fixating on a stationary object, the

teacher may move the object along a straight line within a four to twenty-four inch span toward or away from the eyes of the student. The teacher may vary the initial point of presentation and the distance the object is moved.

Anticipated student actions: The students may perform all of the actions as delineated in Subskill Cluster: Fixation, with the following addition: When the teacher moves the object as delineated above, a student will continue to fixate on the object as it is moved closer to and further away from the eyes.

Recommended Criterion Performance: It is recommended that the students meet all of the criteria delineated in Subskill Cluster: Fixation with the following addition. Students will continue to fixate on the object when it is moved in six inch distances within a four to twenty-four inch span from the students.

Suggested Curriculum strategies: The teacher may follow all of the curriculum strategies as delineated in Subskill Cluster I with the following addition. The speed the object is moved should be varied in an attempt to determine the speed at which optimal student performance occurs.

RUDIMENTARY VISUAL SKILLS: Level II

Component B: Verification of Level II Pre-tracking Skills and Associated Curriculum Strategies[7]

The primary purpose of Component B is to verify the presence of

[7]Generally, it is assumed that if the student is functioning in Level II Component B - Pre-Tracking he/she is also functioning within Level II Component A - Fixation. The student need not be performing at criterion level, but should be manifesting at least some of the student actions described in Component A of Level II.

a number of visual skills organizationally labeled Level II Pre-Tracking skills. Depending upon the presence of degree of Level II Pre-Tracking skills, the teacher may pursue two distinct instructional plans. Specifically:

A) When Suggested teacher actions are implemented and the students perform any or all of the Anticipated student actions but they do not perform the specified actions at Recommended criterion performance, it may then be appropriate to attempt to teach Level II Pre-Tracking skills as outlined in Suggested curriculum strategies.

B) When Suggested teacher actions are implemented and students perform all of the actions outlined in Recommended criterion performance, it is recommended that the teacher proceed to Level III Pre-Tracking skills.

Again, the activities used by the teacher to verify skill levels will be unique to the individual characteristic of each student and should be parts of, or incorporated into, the total curriuclum.

Suggested teacher actions: It is suggested that the teacher engage in activities similar to those described below in an attempt to determine which of the two instructional plans to pursue.

The teacher can present a variety of objects one at a time. The teacher can bring each object from a hidden location to a position within a span of four to twenty-four inches from the students at eye level in the midline position. The teacher can move the object to the left or to the right of midline along a 90° arc, keeping the object the same distance from the eyes at

all points in the arc.

Anticipated student actions: The student may initially fixate on the presented object and then begin to follow the object as it moves. The performance of the pre-tracking actions should begin to occur within two seconds after fixation occurs. The following are additional student actions possibly indicative of Level II Pre-Tracking skills.

a) When the presented object moves, the student follows the moving object with her head and both eyes.

b) The student follows the moving object along arcs up to 90^{o}.

Recommended criterion performance: It is recommended that students meet the criteria described below with at least two objects and on three consecutive occasions with each object:

a) The students will fixate on a presented object and will follow the object with head and both eyes as it moves. The students will follow the moving object through a 90^{o} arc from midline either 90^{o} to the left or 90^{o} to the right of midline.

b) The desired actions will be performed when the objects are presented at least at one distance within four

to twleve inches and at least one ditance within twelve to twenty-four inches from the students.

Suggested curriculum strategies: Curriculum strategies are described generally in Suggested teacher actions. Variation and repetition of the teacher actions as required by the individual characteristics of each student will hopefully facilitate the development of criterion performance. The strategies delineated in Level I, Component C should be applicable here.

RUDIMENTARY VISUAL SKILLS: Level III

Component A: Verification of Level III Fixation Skills and Associated Curriculum Strategies

The primary purpose of Component A is to verify the presence of a number of visual skills organizationally labeled Level III Fixation skills. Many Level III Fixation skills develop concurrently and are interrelated. However, an arbitrary division of two subskill clusters has been made below for organizational purposes. The first subskill cluster is designed to examine the ability to fixate on a stationary object. The second subskill cluster is designed to examine the ability to focus. Each subskill cluster is accompanied by a set of Teacher Actions, Student Actions, Recommended Criterion Performance, and Suggested Curriculum Strategies. Depending on the presence and the degree of the skills in each subskill cluster, the teacher may pursue two distinct instructional plans. Specifically:

A) When Suggested teacher actions are implemented and the students perform any or all of the Anticipated student actions but they do not perform the specified actions at Recommended

criterion performance, it may then be appropriate to attempt to teach Level III Fixation skills as outlined in Suggested curriculum strategies.

B) When Suggested teacher actions are implemented and the student performs all of the specified actions as oullined in Recommended criterion performance for both of the subskill areas, it is recommended the teacher refers to Level III, Component B, Pre-Tracking skills.

1) Subskill Cluster: Fixation

Suggested teacher actions: It is suggested that the teacher engage in activities similar to those described below in an attempt to determine which instructional plan should be pursued. The teacher can present a variety of objects, one at a time. The teacher can bring each object from a hidden location to a stationary position within a span of twenty-four to thirty-six inches from the student at eye level in the midline position.

Anticipated student actions: Generally is is anticipated that of any of the actions described below will be preceded by a brief latency (less than one second) and will have a duration of at least five seconds:

a) The students exhibit A, B, and C of anticipated student actions in Level I, Component B: Fixation skills.

b) The students align both of their eyes with the stationary object.

c) The students maintain alignment of both eyes with the stationary object.

d) It is also anticipated that students will be looking at objects which are over three feet away and which are not presented by the teacher.

Recommended criterion performance: It is recommended that students meet the criteria defined below in relation to at least two objects on three consecutive occasions with each object:

a) The student will align her head and both eyes with the presented object.

b) The student will maintain alignment of both eyes with at least 90% of the objects presented. (The other 10% may require the alignment of only one eye).

c) The latency of the fixation actions will not exceed one second.

d) The duration of the fixation action will not be less than five seconds.

3) The student will perform the desired actions with the objects presented at least at two distances; one distance within twenty-four to thirty inch span (short) and the other distance within a thirty to thirty-six inch span (long).

Suggested curriculum strategies: Curriculum strategies are described generally in Suggested teacher actions. Variation and repetition of the teacher actions as dictated by the individual characteristics of each student will hopefully facilitate the development of criterion performance. All curriculum strategies

delineated in Levels I and II Fixation skills should be useful for Level III Fixation skills when presented under Level III conditions.

2) Subskill Cluster: Focusing

Suggested teacher actions: The teacher may follow all of the actions delineated under Subskill Cluster: Fixation with the following additions: When the student is fixating on the stationary object, the teacher may move the object along a straight line within a four to thirty-six inch span, moving the objects toward or away from the eyes of the students.

Anticipated student actions: The teacher may vary the initial point of presentation and the distance the object is moved. The student may perform all of the actions as delineated in Subskill Cluster: Fixation with the following additions. When the teacher moves the object, the student may continue to fixate on the object as it is moved closer to and farther away from his/her eyes.

Recommended criterion performance: It is recommended that the student meet all criteria delineated in Subskill Cluster: Fixation with the following addition. The student will continue to fixate on the object as it is moved in six inch distances within a four to twenty-four inch span from the students.

Suggested curriculum strategies: The teacher may follow the curriculum strategies delineated in Subskill Cluster: Fixation with the following addition: The speed of the object as it is

moved should be varied in an attempt to determine the speed at which optimal student performance occurs.

RUDIMENTARY VISUAL SKILLS: Level III

Component B: Verification of Level III Pre-Tracking Skills and Associated Curriculum Strategies[8]

The primary purpose of Component B is to verify the presence of a number of visual skills organizationally labeled Level III Pre-Tracking skills. Depending on the presence and degree of Level III Pre-Tracking skills, the teacher may pursue two distinct instructional plans. Specifically:

A) When Suggested teacher actions are implemented and students perform any or all of the Anticipated student actions, but they do not perform the specified actions at Recommended criterion performance, it may then be appropriate to attempt to teach Level III Pre-Tracking skills as outlined in Suggested curriculum strategies.

B) When Suggested teacher actions are implemented and students perform all the actions outlined in Recommended criterion performance, it is recommended that the teacher refer to the Instructional Sequence for teaching rudimentary tracking skills.

Obviously, the activities which teachers actually utilize will be unique to the individual characteristics of each student and should be part of or incorporated into the total curriculum.

Suggested teacher actions: It is suggested that the teacher engage in activities similar to those described below in an attempt

[8]Generally, it is assumed that if a student is functioning in Level III Component B Pre-Tracking, he/she is also functioning within Level III Component A - Fixation. The student need not be performing at criterion level, but should be manifesting at least some of the actions described in Component A of Level III.

to determine which of the two instructional plans to pursue.

The teacher may present a variety of objects, one at a time. The teacher can bring each object from a hidden location to a position within a span of four to thirty-six inches from the students at eye level in the midline position. The teacher can move the object 90° to the left of midline, then to a position 90° to the right of midline, creating an 180° arc from left to right. The teacher may vary her actions, moving the object from right to left or from left to right crossing midline each time.

Anticipated student actions: The student may initially fixate on the presented object and then begin to follow the object as it moves. The performance of such pre-tracking actions should begin to occur within one second after fixation occurs. The following are additional student actions possibly indicative of Level III Pre-Tracking skills:

a) When the presented object moves, the student follows the moving object with his head and both eyes.

b) The student follows the object 180° as it crosses midline.

c) The head and eyes move in a smooth and coordinated manner while the moving object is being followed.

Recommended criterion performance: It is recommended that students meet the criteria defined below in relation to at least two objects, on three consecutive occasions with each object.

a) The student will fixate on the presented object and will follow that object as it moves through an 180° arc, from left to right, and from right to left.

b) The student will perform the desired actions when the objects are presented at least at two distances; one 180^{o} arc within a short (four to eighteen) inch span from the eyes and one 180^{o} arc within a long (eighteen to thirty-six inch) span from the eyes.

Suggested curriculum strategies: Curriculum strategies are described generally in Suggested teacher actions. Variation and repetition of the teacher actions as required by the individual characteristics of each student will hopefully facilitate the development of criterion performance. The strategies delineated in Level I, Component C may be applicable here. When the teacher has verified the presence of rudimentary vision skills and the student has met criteria for fixating, focusing and pre-tracking skills, the teacher may want to implement instructional strategies for teaching tracking skills (Section IV).

SECTION IV: STRATEGIES FOR TEACHING TRACKING SKILLS

A. Introduction

The cluster of skills that allow persons to track moving objects and persons or objects and persons that have moved is crucial to the development of communication skills. Non-handicapped infants acquire these vital tracking skills through natural interactions with the persons and objects in their environment. Indeed, many developmental theorists and other students of human development have watched and marveled at the intricate ways in which young children exhibit their inherited or acquired tracking skills. Unfortunately, many severely handicapped students manifest few, if any, of even the most rudimentary forms of tracking skills and most, if not all, severely handicapped students manifest substantial tracking skill deficits. Without efficient tracking skills it becomes extremely difficult for children to acquire crucial object permanence skills, and the skills necessary to understand many cause and effect relationships. The lack of efficient tracking skills also precludes many social and play interactions.

The tracking skill sequence presented here is an attempt to provide teachers with systematized curriculuum suggestions which, if adapted to individuals, might be of assistance in the teaching of basic tracking skills to severely handicapped students. Certainly, the sequence presented here represents only a small proportion of all the tracking skills a particular student needs to acquire. Thus, the sequence could and should be extended vertically and expanded horizontally. However, as tracking skills are viewed as prerequisites to the basic scanning and selection skills described in Section V, vertical extensions and horizontal expansions of the tracking skill

sequence are future tasks.

There are several critical factors related to the tracking sequence that should be made salient. First, tracking is referred to as the performance of discrete actions that follow the paths of objects or persons as well as the performance of discrete actions that follow the actual objects or persons. The primary reason for referring to tracking in that way is that for many severely handicapped students the movement of the head and eyes do not always coincide precisely with the movement of objects or persons.

Second, students are required to track objects and persons which are moved in a variety of different paths:

a) horizontal paths

b) vertical paths

c) diagonal paths

d) two to four continuous paths (e.g., a horizontal path and then a diagonal path)

e) circular paths

f) random paths

It is assumed that the teacher will arrange the sequence in which the paths are taught in the order of difficulty for the individual student.

Third, in natural settings students encounter a variety of visual, tactile, and auditory barriers. Glass doors, screened doors and wooden doors all function as obstructions. Food items are concealed in plastic bags, paper bags and cardboard boxes. Thus, barriers which are transparent (see through) opaque (form of the object can be determined) or solid (completely hides an object) are introduced in Phase III. It is recommended that within each part of

the sequence, at least three different barriers be utilized to ensure student performance across different types of barriers. The barriers should be varied along several dimensions including: size, width, length, and height, should be placed in varying locations along the paths of objects or persons near the termination of the path.

Fourth, in Phases IV and V objects or persons are initially partially hidden behind, under, or within a barrier. Later they are totally hidden by the barrier. The logic of such a progression is to allow the opportunity to perform the desired actions with a high degree of success. With only a small portion of the object or person hidden, the student is receiving additional sensory cues to assist in locating the hidden object. The teacher gradually increases the amount of the object or person which is hidden, until the item is totally hidden.

OVERVIEW OF AN INSTRUCTIONAL SEQUENCE FOR TEACHING TRACKING SKILLS

PHASE I: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION.

In Phase I students are taught to track an object or person which is moving in a:

Horizontal Motion	Parts 1-5
Vertical Motion	Parts 6-10
Diagonal Motion	Parts 11-15
Motion consisting of Two to Four Distinct Continuous Paths	Parts 16-18
Circular Motion	Part 19
Random Motion	Part 20

PHASE II: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION AND TO ATTEND TO THE OBJECT OR PERSON WHEN THE MOTION IS TERMINATED.

In Phase II students are taught to track a moving object or person and to attend to the object or person when motion is terminated. The object or person will be moved in a:

Horizontal Motion	Part 1
Vertical Motion	Part 2
Diagonal Motion	Part 3
Motion consisting of Two to Four Distinct Continuous Paths	Part 4
Circular Motion	Part 5
Random Motion	Part 6

PHASE III: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION AND IS TEMPORARILY HIDDEN BY A BARRIER.

In Phase III students are taught to track a moving object or person which is temporarily hidden by:

Transparent Barriers	Parts 1 and 2
Opaque Barriers	Parts 3 and 4
Solid Barriers	Parts 5 and 6

PHASE IV: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION AND TO ATTEND TO A BARRIER WHEN THE OBJECT OR PERSON CEASES MOTION AND IS HIDDEN BY THE BARRIER.

In Phase IV students are taught to track a moving object or person and to attend to a barrier when the object or person ceases motion and is:

Totally Hidden by Transparent Barriers	Parts 1 and 2
Partially Hidden by Opaque Barriers	Parts 3 and 4
Totally Hidden by Opaque Barriers	Parts 5 and 6
Partially Hidden by Solid Barriers	Parts 7 and 8
Totally Hidden by Solid Barriers	Parts 9 and 10

PHASE V: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION UNTIL THE OBJECT OR PERSON CEASES MOTION AND IS HIDDEN BY A BARRIER, AND TO REMOVE THE BARRIER TO REGAIN CONTACT WITH THE OBJECT OR PERSON.

The difference between Phase IV and Phase V is essentially that Phase V uses the steps in Phase IV except that the student removes the barrier to regain contact.

C. Instructional Sequence for Teaching Tracking Skills

PHASE I: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION[1]

Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion.

Part 1: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is moving horizontally starting from midline and is within reach.

Instructional Procedure

An object or person is set in motion from midline in a horizontal path and within the reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved to a position 45^{o} to the right of midline and the path is at eye level.

Step B: An object or person is moved to a position 45^{o} to the left of midline and the path is at eye level.

Step C: An object or person is moved to a position 90^{o} to the right of midline and the path is at eye level.

Step D: An object or person is moved to a position 90^{o} to the left of midline and the path is at eye level.

Step E: An object or person is moved to a position which is between 45^{o} and 90^{o} to the right of midline and the path is 15^{o} above eye level.

Step F: An object or person is moved to a position which is between 45^{o} and 90^{o} to the left of midline and the path is 15^{o} above eye level.

Step G: An object or person is moved to a position which is between 45^{o} and 90^{o} to the right of midline and the path is 45^{o} above eye level.

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[1] "Tracking" as the term is used here refers to discrete actions which follow a moving object or person, or follow the path of a moving object or person.

Step H: An object or person is moved to a position which is between 45° and 90° to the left of midline and the path is 45° above eye level.

Step I: An object or person is moved to a position which is between 45° and 90° to the right of midline and the path is 15° below eye level.

Step J: An object or person is moved to a position which is between 45° and 90° to the left of midline and the path is 15° below eye level.

Step K: An object or person is moved to a position which is between 45° and 90° to the right of midline and the path is 45° below eye level.

Step L: An object or person is moved to a position which is between 45° and 90° to the left of midline and the path is 45° below eye level.

Step M: An object or person is moved to at least five different positions which are between 45° and 90° either to the right or left of midline and the path ranges within 45° above and below eye level.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through M within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part I, Step C)

The teacher holds up a balloon in front of the student at eye level and says, "Look, Nick, I have a balloon. Watch the balloon." The teacher moves the balloon in a horizontal path starting at Nick's midline and traveling to 90° to the right of Nick's midline. Nick demonstrates tracking by moving his head and eyes along the same path as the balloon. Nick then is allowed or encouraged to play with the balloon.

Part 2: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is moving horizontally starting from the right or left of the midline, but not crossing midline, and is within reach.

The difference between Part 1 and Part 2 is essentially that in Part 1 the object or person starts motions from midline, whereas in Part 2 the object or person starts motion from a position to the right or left of midline.

Instructional Procedure

An object or person is set in motion from the right or left of midline in a horizontal path which does not cross midline and is within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from 45° to the right of midline to a midline position and the path is at eye level.

Step B: An object or person is moved from 45° to the left of midline to a midline position and the path is at eye level.

Step C: An object or person is moved from 90° to the right of midline to a midline position and the path is at eye level.

Step D: An object or person is moved from 90° to the left of midline to a midline position and the path is at eye level.

Step E: An object or person is moved from a position which is between 45° and 90° to the right of midline to a midline position and the path is 15° above eye level.

Step F: An object or person is moved from a position which is between 45° and 90° to the left of midline to a midline position and the path is 15° above eye level.

Step G: An object or person is moved from a position which is between 45° and 90° to the right of midline to a midline position and the path is 45° above eye level.

Step H: An object or person is moved from a position which is between 45° and 90° to the left of midline to a midline position and the path is 45° above eye level.

Step I: An object or person is moved from a position which is between 45° and 90° to the right of midline to a midline position and the path is 15° below eye level.

Step J: An object or person is moved from a position which is between 45° and 90° to the left of midline to a midline position and the path is 15° below eye level.

Step K: An object or person is moved from a position which is between 45° and 90° to the right of midline to a midline position and the path is 45° below eye level.

Step L: An object or person is moved from a position which is between 45° and 90° to the left of midline to a midline position and the path is 45° below eye level.

Step M: An object or person is moved from at least five different positions which are between 45° and 90° either to the right or left of midline to a midline position and the path ranges between 45° above and below eye level.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase 1, Part 2, Step 1)

Katrina is seated at a table and her father pushes a toy car along a path which is initiated 60° to the right of the student's midline and stops at midline. Her father says, "Watch the car go." Katrina indicates tracking by pointing to the car as it moves along the horizontal path. Father then helps Katrina push or play with the car.

Part 3: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is moving horizontally starting from the right or left of midline, crossing midline, and is within reach.

The difference between Part 2 and Part 3 is essentially that in Part 2 the object or person does not cross midline, whereas in Part 3 the object or person does cross midline.

Instructional Procedure

An object or person is set in motion from the right or left of midline in a horizontal path which crosses midline, within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from 45° to the right of midline to 45° to the left of midline and the path is at eye level.

Step B: An object or person is moved from 45° to the left of midline to 45° to the right of midline and the path is at eye level.

Step C: An object or person is moved from 90° to the right of midline to 90° to the left of midline and the path is at eye level.

Step D: An object or person is moved from 90° to the left of midline to 90° to the right of midline and the path is at eye level.

Step E: An object or person is moved from a position which is between 45° and 90° to the right of midline to a position which is between 45° and 90° to the left of midline and the path is above eye level.

Step F: An object or person is moved from a position which is between 45° and 90° to the left of midline to a position which is between 45° and 90° to the right of midline and the path is above eye level.

Step G: An object or person is moved from a position which is between 45° and 90° to the right of midline to a position which is between 45° and 90° to the left of midline and that path is below eye level.

Step H: An object or person is moved from a position which is between 45° and 90° to the left of midline to a position which is between 45° and 90° to the right of midline and the path is below eye level.

Step I: An object or person is moved in at least five different paths, initiating and ending between 45° and 90° to the right or left of midline and the path ranges between 45° above and below eye level.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required on each of Steps A through I within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;

d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object/person movement.

Example Activity: (Phase I, Part 3, Step F)

The student is seated on a floor cushion and the teacher holds a toy airplane on a string 45° above the student's eye level. The teacher says, "Peggy, watch the plane fly." The airplane is then moved from 45° to the left of midline to 70° right of midline. The student demonstrates tracking by following the airplane's path with her head and eyes. The teacher then gives the airplane to Peggy.

Part 4: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves in a repetitious horizontal motion and is within reach.

The difference between Part 3 and Part 4 is essentially that in Part 3 the object or person is moved in a particular horizontal motion only once, whereas in Part 4 the object or person is moved in a repetitious horizontal motion.

Instructional Procedure

An object or person is set in motion in a horizontal path within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from midline to a position between 45° and 90° to the right or left of midline, is moved back to midline on the same path, and the path is at eye level.

Step B: An object or person is moved from a position which is between 45° and 90° to the right or left of midline to a midline position, is moved back to the starting point on the same path, and the path is at eye level.

Step C: An object or person is moved from a position which is between 45° and 90° to the right or left of midline to a position on the opposite side of the midline, is returned to the starting point on the same path, and the path is at eye level.

Step D: Repeat Steps A, B, and C with the path of the object or person above eye level.

Step E: Repeat Steps A, B, and C with the path of the object or person below eye level.

Step F: An object or person is moved in at least five different paths, with the initiation position ranging between 30° to the right and left of midline, the object or person returns to the initiation position, and the path ranges between 45° above and below eye level.

Criterion Performance

It is suggested that students are taught to correctly perform the actions required in each of Steps A through F within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 4, Step A)

Ken is standing at a kitchen counter and a brother has an orange in his hand. The brother places the orange directly in front of Ken at eye level and says, "Watch the orange." The brother rolls the orange 45° to the right of midline and then rolls the orange back to midline. Ken demonstrates tracking by pointing to the orange as it goes back and forth along the horizontal path. Ken's brother then gives him the orange.

Part 5: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves horizontally and is not within reach.

The difference between Parts 1-4 and Part 5 is essentially that in Parts 1-4 the object or person is within the reach of the students, whereas in Part 5 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion in a horizontal path which is not within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object

Step A: Follow Steps A through M as in Phase I, Part 1; except that the object or person is not within reach.

Step B: Follow Steps A through M as in Phase I, Part 2; except that the object or person is not within reach.

Step C: Follow Steps A through I as in Phase I, Part 3; except that the object or person is not within reach.

Step D: Follow Steps A through F as in Phase I, Part 4; except that the object or person is not within reach.

Criterion Performance

It is suggested that students are taught to correctly perform the actions required in each of Steps A through D within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 5, Step B)

John is seated on the school playground and a peer is being pulled in a wagon approximately ten feet in front of the student. The teacher tells the student, "John, look at Susie" (Susie is in the wagon). The aide pulls the wagon from a position 45° to the right of John's midline to John's midline. John demonstrates tracking by following the path of wagon with head movements. The teacher gives John and Susie a ride in the wagon.

Part 6: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is moving vertically starting from eye level and is within reach.

The difference between Parts 1-5 and Part 6 is essentially that in Parts 1-5 the object or person moves horizontally, whereas in Part 6 the object or person moves vertically.

Instructional Procedure

An object or person is set in motion from eye level in a vertical path within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved to a position 15° above eye level and the path is at midline.

Step B: An object or person is moved to a position 15° below eye level and the path is at midline.

Step C: An object or person is moved to a position 45° above eye level and the path is at midline.

Step D: An object or person is moved to a position 45° below eye level and the path is at midline.

Step E: An object or person is moved to a position which is between 15° and 45° above eye level and the path is 45° to the right of midline.

Step F: An object or person is moved to a position which is between 15° and 45° above eye level and the path is 45° to the left of midline.

Step G: An object or person is moved to a position which is between 15° and 45° below eye level and the path is 45° to the right of midline.

Step H: An object or person is moved to a position which is between 15° and 45° below eye level and the path is 45° to the left of midline.

Step I: An object or person is moved to at least five different positions which are between 15° and 45° either above or below eye level and the path ranges within 45° to the right and left of midline.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through I within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 6, Step C)

The teacher holds a bell at the student's eye level and says, 'Listen to the bell." The teacher moves the bell from eye level to 45° above eye level at the student's

midline. The student (blind) demonstrates tracking by pointing a finger through the path of the bell. The student is then allowed to ring the bell.

Part 7: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves vertically starting above or below eye level, but not crossing eye level, and is within reach.

The difference between Part 6 and Part 7 is essentially that in Part 6 the object or person starts motion from eye level, whereas in Part 7 the object or person starts motion above or below eye level.

Instructional Procedure

An object or person is set in motion from above or below eye level in a vertical path which does not cross eye level, and is within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from 15° above eye level to eye level and the path is at midline.

Step B: An object or person is moved from 15° below eye level to eye level and the path is at midline.

Step C: An object or person is moved from 45° above eye level to eye level and the path is at midline.

Step D: An object or person is moved from 45° below eye level to eye level and the path is at midline.

Step E: An object or person is moved from a position which is between 15° and 45° above eye level to eye level and the path is 45° to the right of midline.

Step F: An object or person is moved from a position which is between 15° and 45° above eye level to eye level and the path is 45° to the left of midline.

Step G: An object or person is moved from a position which is between 15° and 45° below eye level to eye level and the path is 45° to the right of midline.

Step H: An object or person is moved from a position which is between 15° and 45° below eye level to eye level and the path is 45° to the left of midline.

Step I: An object or person is moved from at least five different positions which are between 15° and 45° either above or below eye level to eye level and the path ranges within 45° to the right and left of midline.

Criterion Performance

Same as described in Part 6.

Example Activity: (Phase I, Part 7, Step F)

Mother holds a toy with a pull string above the student's eye level and to the left of midline. Mother says, 'Carol, look at the string.' The mother pulls the string down in a vertical path until it reaches the student's eye level. Carol demonstrates tracking by moving her head and eyes in a downward path as the string moves. Carol is then allowed, or encouraged to play with the toy.

Part 8: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves vertically starting from above or below eye level, crossing eye level, and is within reach.

The difference between Part 7 and Part 8 is essentially that in Part 7 the object or person does not cross eye level, whereas in Part 8 the object or person does cross eye level.

Instructional Procedure

An object or person is set in motion from above or below eye level in a vertical path which crosses eye level and is within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from 15° above eye level to 15° below eye level and the path is at midline.

Step B: An object or person is moved from 15° below eye level to 15° above eye level and the path is at midline.

Step C: An object or person is moved from 45° above eye level to 45° below eye level and the path is at midline.

Step D: An object or person is moved from 45° below eye level to 45° above eye level and the path is at midline.

Step E: An object or person is moved from a position which is between 15° and 45° above eye level to a position which is between 15° and 45° below eye level and the path is to the right of midline.

Step F: An object or person is moved from a position which is between 15° and 45° below eye level to a position which is between 15° and 45° above eye level and the path is to the right of midline.

Step G: An object or person is moved from a position which is between 15° and 45° above eye level to a position which is between 15° and 45° below eye level and the path is to the left of midline.

Step H: An object or person is moved from a position which is between 15° and 45° below eye level to a position which is between 15° and 45° above eye level and the path is to the left of midline.

Step I: An object or person is moved in at least five different paths, initiating and ending between 15° and 45° above or below eye level and the path ranges between 45° to the right and left of midline.

Criterion Performance

Same as described in Part 6.

Example Activity: (Phase I, Part 8, Step F)

The student is sitting on a chair in the living room and a favorite toy is on the floor. Mother says, "Joe, watch your toy", and mother slowly moves the toy upward to a position 15° above eye level. Joe demonstrates tracking by reaching for the toy and following the toy's path with his extended arm. Mother then gives the toy to Joe.

Part 9: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves in a repetitious vertical motion and is within reach.

The difference between Part 8 and Part 9 is essentially that in Part 8 the object or person is moved in a particular vertical motion, whereas in Part 9 the object or person is moved in a repetitious vertical motion.

Instructional Procedure

An object or person is set in motion in a vertical path within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from eye level to a position between 15° and 45° above or below eye level, then is moved back to eye level, on the same path and the path is at midline.

Step B: An object or person is moved from a position which is between 15° and 45° above or below eye level to eye level, then is moved back to the starting point on the same path, and the path is at midline.

Step C: An object or person is moved from a position which is between 15° and 45° above or below eye level to a position on the opposite side of eye level, then returns to the starting point on the same path and the path is at midline.

Step D: Repeat Steps A, B, C with the path of the object or person to the right of midline.

Step E: Repeat Steps A, B, C with the path of the object or person to the left of midline.

Step F: An object or person is moved in at least five different paths, with the initiation position ranging between 45° above and below eye level, the object or person is returned to the initiation position and the path ranges between 45° to the right and left of midline.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through F within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 9, Step C)

The student stands in front of the physical education teacher in gym class. The teacher says, "Dick, watch the ball bounce." The teacher holds the ball above Dick's eye level, then drops it so it bounces on the floor and returns to his hands. Dick demonstrates tracking by following the movement of the bouncing ball with head and eyes. Dick is then allowed to play with the ball.

Part 10: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves vertically and is not within reach.

The difference between Parts 6-9 and Part 10 is essentially that in Parts 6-9 the object or person is within the reach of the students, whereas in Part 10 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion in a vertical path which is not within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: Follow Steps A through I as in Phase I, Part 6; except that the object or person is not within reach.

Step B: Follow Steps A through I as in Phase I, Part 7; except that the object or person is not within reach.

Step C: Follow Steps A through I as in Phase I, Part 8; except that the object or person is not within reach.

Step D: Follow Steps A through F as in Phase I, Part 9; except that the object or person is not within reach.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through D within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform;
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 10, Step C)

The student is seated on a chair in the classroom and the teacher is standing five feet in front of the student. The teacher is holding a pillow and says, "Barb, do you want to sit on the pillow? Look at the pillow." The teacher drops the pillow to the floor and Barb demonstrates tracking by moving eyes in downward motion with the path of the pillow. The teacher then moves Barb to the pillow and allows her to sit on it.

Part II: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves diagonally starting from midline and is within reach.

The difference between Parts 1-10 and Part II is essentially that in Parts 1-10 the object or person moves horizontally or vertically whereas in Part II the object or person moves diagonally.

Instructional Procedure

An object or person is set in motion from midline in a diagonal path within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from midline at eye level to a position 45° to the right of midline and between 15° and 45° above eye level.

Step B: An object or person is moved from midline at eye level to a position 45° to the left of midline and between 15° and 45° above eye level.

Step C: An object or person is moved from midline at eye level to a position 45° to the right of midline and between 15° and 45° below eye level.

Step D: An object or person is moved from midline at eye level to a position 45° to the left of midline and between 15° and 45° below eye level.

Step E: An object or person is moved from midline 45° above eye level to a position 45° to the right or left of midline at eye level.

Step F: An object or person is moved from midline 45° below eye level to a position 45° to the right or left of midline at eye level.

Step G: An object or person is moved in at least five different paths, the initiation position is at midline between 45° above and below eye level. The object or person is moved to a position between 45° above and below eye level and between 45° to the right and left of midline.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through F within five seconds of teacher cues on three consecutive occasions.

In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part II, Step A)

The teacher holds a hand puppet in front of the student at eye level and at midline. The teacher directs Dave, "Look at the puppet." The teacher moves the puppet diagonally to a position 30^{o} above eye level and 45^{o} to the right of midline. Dave demonstrates tracking by following the path with head and eye movements. Dave then gets to put the puppet on his hand and move it.

Part 12: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves diagonally from the right or left of midline, but not crossing midline, and is within reach.

The difference between Part II and Part 12 is essentially that in Part II the object or person starts motion from midline, whereas in Part 12 the object or person starts motion from the right or left of midline.

Instructional Procedure

An object or person is set in motion from the right or left of midline in a diagonal path which does not cross midline and is within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from 45^{o} to the right of midline at eye level to a position which is at midline either 45^{o} above or below eye level.

Step B: An object or person is moved from 45^{o} to the left of midline at eye level to a position which is at midline either 45^{o} above or below eye level.

Step C: An object or person is moved from a position which is 45^{o} to the right of midline and is either 45^{o} above or below eye level to a position at midline and eye level.

Step D: An object or person is moved from a position which is 45° to the left of midline and is either 45° above or below eye level to a position at midline and eye level.

Step E: An object or person is moved in at least five different paths, the initiation position is to right or left of midline and is between 45° above and below eye level. The object or person is moved to a position at midline which is between 45° above and below eye level.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through E within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the action of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 12, Step D)

During a mealtime, mother holds a piece of bread to the left of the student and above eye level. Mother tells the student, "Follow the bread." Mother then slowly moves the bread to the student's midline at eye level using a diagonal path. The student tracks the bread with coordinated eye movements and then is allowed to eat the bread.

Part 13: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves diagonally starting from the right or left of midline, crossing midline, and is within reach.

The difference between Part 12 and Part 13 is essentially that in Part 12 the object or person does not cross midline, whereas in Part 13 the object or person does cross midline.

Instructional Procedure

An object or person is set in motion from the right or left of midline in a diagonal path which crosses midline, within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from a position which is 45° to the right of midline and 45° above eye level to a position which is 45° to the left of midline and 45° below eye level.

Step B: An object or person is moved from a position which is 45° to the left of midline and 45° above eye level to a position which is 45° to the right of midline and 45° below eye level.

Step C: An object or person is moved from a position which is 45° to the right of midline and 45° below eye level to a position which is 45° to the left of midline and 45° above eye level.

Step D: An object or person is moved from a position which is 45° to the left of midline and 45° below eye level to a position which is 45° to the right or midline and 45° above eye level.

Step E: An object or person is moved in at least five different paths, the initiation position is to the right or left of midline and is between 45° above and below eye level. The object or person is moved to a position diagonally opposite from the initiation position to the right or left of midline and is between 45° above or below eye level.

Criterion Performance

Same as described in Part 12.

Example Activity: (Phase 1, Part 13, Step A)

Father holds a brightly colored photograph of the student's mother in front of the student in a position which is 45° to the right of midline and 45° above eye level. Father says, "Joan, look at mom", and moves the photo diagonally to a position which is 45° to the left of midline and 45° below eye level. Joan demonstrates tracking by moving her head and eyes along the diagonal path as the photo moves. Father then hands the photo to Joan to look at.

Part 14: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person moves in a repetitious diagonal motion and is within reach.

The difference between Part 13 and Part 14 is essentially that in Part 13 the object or person is moved in a particular diagonal motion only once, whereas in Part 14 the object or person is moved in a repetitious diagonal motion.

Instructional Procedure

An object or person is set in motion in a diagonal path within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved from the midline position at eye level to a position 45° to the right or left of midline and is between 45° above or below eye level, then is moved back to the starting point on the same path.

Step B: An object or person is moved from a position which is either 45° to the right or left of midline and is between 45° above and below eye level to the midline position between 45° above and below eye level, then is moved back to the starting point on the same path.

Step C: An object or person is moved from a position which is either 45° to the right or left of midline and is between 45° above and below eye level to a position diagonally opposite from the starting point, 45° to the right or left of midline and between 45° above and below eye level, then is moved back to the starting point on the same path.

Step D: An object or person is moved in at least five different paths, with the initiation position ranging between 45° to the right and left of midline and between 45° above and below eye level, the object or person is returned to the initiation position along the same path.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through D within five seconds of teacher cues on three consecutive occasions.
In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 14, Step C)

The teacher holds an alarm clock to the left of midline and below the student's eye level. The student, who is blind, is

asked to "Follow the ticking". The teacher winds the clock and slowly moved it diagonally to a position which is to the right of midline and above eye level, then moves it back along the same path to the starting point. The student demonstrates tracking by pointing his finger toward the ticking clock as it moves diagonally. The student is then allowed to handle the clock and hold it to his ear.

Part 15: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is moving diagonally and is not within reach.

The difference between Parts 11-14 and Part 15 is essentially that in Parts 11-14 the object or person is within reach of the students, whereas in Part 15 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion in a diagonal path which is not within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: Follow Steps A through G as in Phase I, Part 11; except that the object or person is not within reach.

Step B: Follow Steps A through E as in Phase I, Part 12; except that the object or person is not within reach.

Step C: Follow Steps A through E as in Phase I, Part 13; except that the object or person is not within reach.

Step D: Follow Steps A through D as in Phase I, Part 14; except that the object or person is not within reach.

Criterion Performance

Same as described in Part 14.

Example Activity: (Phase I, Part 15, Step D)

Rufus and his sister are playing on the floor with blocks. His sister is four feet away and holds a block to the left of Rufus near the floor and says, "Rufus, find the block. Look." The sister moves the block diagonally to the right of Rufus, above eye level and then moves it back to the starting point. Rufus demonstrates tracking by following the path of the block with his eyes. The sister and Rufus then build a tower on top of the block.

Part 16: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion; the motion is continuous and consists of two distinct paths.

The difference between Parts 1-15 and Part 16 is essentially that in Parts 1-15 the object or person is moved through one path, whereas in Part 16 the motion consists of two distinct paths.

Instructional Procedure

An object or person is set in motion from a position which is between 45° to the right and left of midline and is between 45° above and below eye level. The object or person is moved continuously along two distinct paths. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved in a horizontal path and a vertical path, respectively in that order, within reach of the students.

Step B: An object or person is moved in a vertical path and a horizontal path, respectively in that order, within reach of the students.

Step C: An object or person is moved in a horizontal path and a diagonal path, respectively in that order, within reach of the students.

Step D: An object or person is moved in a diagonal path and a horizontal path, respectively in that order, within reach of the students.

Step E: An object or person is moved in a vertical path and a diagonal path, respectively in that order, within reach of the students.

Step F: An object or person is moved in a diagonal path and a vertical path, respectively in that order, within reach of the students.

Step G: An object or person is moved in at least five different motions, which include two distinct paths presented in any order within reach of the students.

Step H: Repeat the paths described in Steps A through H with the object or person not within reach of the students.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through H within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;

c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 16, Step B)

Carlos is seated in front of a flannel board with a flannel dog cut-out on it. The teacher says, "Carlos, look at the dog. Watch him run." The teacher moves the dog from the upper right hand corner vertically to the lower right hand corner then horizontally to the left. Carlos demonstrates tracking by moving his eyes along the path of the dog. Carlos is then allowed to move the dog on the flannel board.

Part 17: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion; the motion is continuous and consists of three distinct paths.

The difference between Part 16 and Part 17 is essentially that in Part 16 the object or person is moved continuously through two distinct paths, whereas in Part 17 the object or person is moved continuously through three distinct paths.

Instructional Procedure

An object or person is set in motion from a position which is between 45° to the right and left of midline and is between 45° above and below eye level. The object or person is moved continuously along three distinct paths. The teacher issues an appropriate cue which requires the students to demonstrate trac ing of the object or person.

Step A: An object or person is moved in horizontal, vertical, and horizontal paths, respectively in that order, within reach of the students.

Step B: An object or person is moved in vertical, horizontal, and vertical paths respectively in that order, within reach of the students.

Step C: An object or person is moved in horizontal, diagonal, and horizontal paths, respectively in that order, within reach of the students.

Step D: An object or person is moved in diagonal, horizontal, and diagonal paths, respectively in that order, within reach of the students.

Step E: An object or person is moved in vertical, diagonal, and vertical paths, respectively in that order, within reach of the students.

Step F: An object or person is moved in diagonal, vertical, and diagonal paths, respectively in that order, within reach of the students.

Step G: An object or person is moved in at least five different continuous motions which include horizontal, vertical, and diagonal paths, in any order, within reach of the students.

Step H: Repeat paths described in Steps A through G with the object or person not within reach of the students.

Criterion Performance

Same as described in Part 16.

Example Activity: (Phase I, Part 17, Step A)

The student is seated on the floor at home and his brother is pushing a toy car on the floor. The brother says, "Tim, look at the car go", and moves the car in a horizontal path, a vertical path and a horizontal path. Tim demonstrates tracking by following the path of the car with eye movements and pointing to the car as it moves. Then Tim's brother helps him to push the toy car across the floor.

Part 18: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion; the motion is continuous, consists of four distinct paths and initiates and ends at the same position.

The difference between Part 17 and Part 18 is essentially that in Part 17 the object or person is moved continuously through three distinct paths, whereas in Part 18 the object or person is moved continuously through four distinct paths.

Instructional Procedure

An object or person is set in motion from a position which is between 45° to the right and left of midline and is between 45° above and below eye level. The object or person is moved continuously along four distinct paths and the path ends at the starting point, (path is a "square"). The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved in horizontal, vertical, horizontal, and vertical paths, respectively in that order, within reach of the students.

Step B: An object or person is moved in vertical, horizontal, vertical, and horizontal paths, respectively in that order, within reach of the students.

Step C: An object or person is moved in four diagonal paths which are at right angles with each other, within reach of the students.

Step D: An object or person is moved in at least five different continuous motions which include four distinct paths, within reach of the students.

Step E: Repeat the paths described in Steps A through D with the object or person not within reach of the students.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through E within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 18, Step D)

Mother holds up a large ball directly in front of Jack, approximately six feet away. Mother tells Jack to "Watch the ball." Mother moves the ball in a large square, starting from the right of midline above eye level, moving to left of midline above eye level, to left of midline below eye level and returning to the starting point. Jack demonstrates tracking by pointing to the ball with his arm as it moves along the square path. Mother then gives the ball to Jack.

Part 19: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in a circular motion.

The difference between Part 18 and Part 19 is essentially that in Part 18 the object or person is moved continuously through

four distinct paths, whereas in Part 19 the object or person is moved in a circular motion.

Instructional Procedure

An object or person is set in motion from a position which is between 45° to the right and left of midline and is between 45° above and below eye level. The object or person is moved in a circular motion. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved in a clockwise circular path of 360 degrees within reach of the students.

Step B: An object or person is moved in a counter-clockwise circular path of 360 degrees within reach of the students.

Step C: An object or person is moved in a clockwise circular path of 360 degrees and continues on the same path for at least another 360 degrees within reach of the students.

Step D: An object or person is moved in a counter-clockwise path of 360 degrees and continues on the same path for at least another 360 degrees within reach of the students.

Step E: An object or person is moved in at least five different circular paths ranging within a 10° to 360° arc within reach of the students.

Step F: Repeat the paths described in Steps A through F with the object or person not within reach of the students.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through F within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 19, Step E)

The teacher holds up a large cardboard clock representation and says, "Look, a clock. Follow my finger." The teacher points to the "12" on the clock and moves his finger 90° clockwise around the face of the clock. Pedro demonstrates tracking by using his eyes to follow the teacher's finger. The teacher repeats the task starting and stopping at different points on the clock. Pedro is then allowed to move his finger around the clock face.

Part 20: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in random motion.

The difference between Parts 1-19 and Part 20 is essentially that in Parts 1-19 the object or person is moved through a distinct path, whereas in Part 20 the object or person moves in a random motion.

Instructional Procedure

An object or person is set in motion from a position which is between 45° to the right and left of midline and is between 45° above and below eye level. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is set in motion from at least five different starting positions within reach of the students.

Step B: An object or person is set in motion from at least five different starting positions not within reach of the students.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in Steps A and B within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;

The word 'random" as it is referred to in this context is indicative of a motion which is not determined or controlled by the teacher.

d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase I, Part 20, Step A)

The student and her babysitter are playing outside with soap bubbles. The babysitter blows a big bubble and tells the student, "Pattie, watch the bubble." Pattie demonstrates tracking by following the path of the bubble as it descends with movement of her head and eyes. Pattie is then allowed to blow bubbles.

PHASE II: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION AND TO ATTEND TO THE OBJECT OR PERSON WHEN MOTION IS TERMINATED

Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to the object or person when motion is terminated.

The difference between Phase I and Phase II is essentially that in Phase I, the students are only required to track the path of the object or person while it is in motion, whereas in Phase II the students are also required to continue to attend to the object or person when it has ceased motion for a specified time.

Individual students may consistently demonstrate the skills required in Phase II during the teaching or verification of Phase I skills. In such instances, it is recommended that such students immediately progress to Phase III. However, if the students do not demonstrate consistent performance of Phase II skills, it is recommended that Phase II be implemented.

Part I: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is moving horizontally, and can perform discrete actions which indicate attending to the object or person when motion is terminated.

Instructional Procedure

An object or person is set in a horizontal motion from a position between 90^{o} to the right and left of midline and between 45^{o} above and below eye level. The object or person should cease motion within this same area and maintain the end position for at least three seconds. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and attending to the object or person when it ceases motion.

Step A: An object or person is set in motion from midline in at least five different horizontal paths within reach of the students. The object or person ceases motion to the right or left of midline.

Step B: An object or person is set in motion from a position to the right or left of midline in at least five different horizontal paths within reach of the students. The object or person ceases motion at midline.

Step C: An object or person is set in motion from a position to the right or left of midline in at least five different horizontal paths within reach of the students. The object or person ceases motion on the opposite side of midline.

Step D: An object or person is set in motion from a position between 90° to the right and left of midline in at least five different horizontal paths within reach of the students. The object or person is moved to a position between 90° to the right and left of midline and is moved on the same path back to the starting position where it ceases motion.

Step E: Repeat Steps A through D with the object or person not within reach of the students.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through E within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase II, Part 1, Step C)

The teacher pushes a toy train in front of the student at eye level. The teacher says, "Brian, follow the train." Then the teacher moves the train from 45° to the right of midline to a point which is 90° to the left of midline and stops the train. Brian demonstrates tracking by following the trains' motion with movements and demonstrates attending to the train when it ceases motion by keeping his eyes fixed on the train and reaching for the train with his hand. The teacher then lets Brian play with the train.

Part 2: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is moving vertically, and can perform discrete actions which indicate attending to the object or person when motion is terminated.

The difference between Part 1 and Part 2 is essentially that in Part 1 the object or person is moving horizontally, whereas in Part 2 the object or person is moving vertically.

Instructional Procedure

An object or person is set in a vertical motion from a position between 90° to the right and left of midline and between 45° above and below eye level. The object or person should cease motion within the same area and maintain the end position for at least three seconds. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and attending to the object or person when it ceases motion.

Step A: An object or person is set in motion from eye level in at least five different vertical paths within reach of the students. The object or person ceases motion above or below eye level.

Step B: An object or person is set in motion from a position above or below eye level in at least five different vertical paths within reach of the students. The object or person ceases motion at eye level.

Step C: An object or person is set in motion from a position above or below eye level in at least five different vertical paths within reach of the students. The object or person ceases motion on the opposite side of eye level.

Step D: An object or person is set in motion from a position between 45° above and below eye level in at least five different vertical paths within reach of the students. The object or person is moved to a position between 45 above and below eye level and is moved on the same path back to the starting position where it ceases motion.

Step E: Repeat Steps A through D with the object or person not within reach of the students.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase II, Part 2, Step A)

The teacher holds up a transistor radio in front of a student who is blind. The teacher turns the radio on, moves it from mid line up to a point 45° above eye level and says, "Terry, follow the music." Terry demonstrates auditory tracking by pointing to the radio as it moves vertically and demonstrates attending to the radio when it ceases motion by continuing to point to the radio. The teacher gives the radio to Terry to listen to.

Part 3: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is moving diagonally, and can perform discrete actions which indicate attending to the object or person when motion is terminated.

The difference between Part 2 and Part 3 is essentially that in Part 2 the object or person is moving vertically, whereas in Part 3 the object or person is moving diagonally.

Instructional Procedure

An object or person is set in a diagonal motion from a position between 90° to the right and left of midline and between 45° above and below eye level. The object or person should cease motion within the same area and maintain the end position for at least three seconds. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and attending to the object or person when it ceases motion.

Step A: An object or person is set in motion from midline in at least five different diagonal paths within reach of the students. The object or person ceases motion to the right or left of midline.

Step B: An object or person is set in motion from a position to the right or left of midline in at least five different diagonal paths within reach of the students. The object or person ceases motion at midline.

Step C: An object or person is set in motion from a position to the right or left of midline in at least five different diagonal paths within reach or the students. The object or person ceases motion on the opposite side of midline.

Step D: An object or person is set in motion from a position between 90° to the right and left of midline in at least five different diagonal paths within reach

of the students. The object or person is moved to a position between 90° to the right and left of midline and is moved on the same path back to the starting position where it ceases motion.

Step E: Repeat Steps A through D with the object or person not within reach of the students.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase II, Part 3, Step E)

Koichi is seated on the floor and the teacher stands six feet away. The teacher tells Koichi, "Look, a car. Watch it go." The teacher then pushes a toy car down an inclined ramp, the car stops moving when it reaches the bottom of the ramp. Koichi moves his head and eyes through the path of the car and continues to attend to the car when it ceases motion. The teacher then lets Koichi pick up the car and push it down the ramp.

Part 4: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in a motion consisting of two to four distinct paths, and can perform discrete actions which indicate attending to the object or person when motion is terminated.

The difference between Parts 1-3 and Part 4 is essentially that in Parts 1-3 the object or person is moved through one distinct path, whereas in Part 4 the object or person is moved continuously through two to four distinct paths.

Instructional Procedure

An object or person is set in continuous motion along two to four distinct paths from a position which is between 45° to the right and left of midline and is between 45° above and below eye level. The object or person should cease motion within the same area and maintain the end position for at least three seconds. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and attending to the object or person when it ceases motion.

Step A: An object or person is moved in at least five different motions within reach of the students, which include two continuous distinct paths; horizontal, vertical or diagonal.

Step B: An object or person is moved in at least five different motions within reach of the students, which include three continuous distinct paths, horizontal, vertical or diagonal.

Step C: An object or person is moved in at least five different motions within reach of the students, which include four continuous distinct paths; horizontal, vertical or diagonal.

Step D: Repeat Steps A through C with the object or person not within reach of the students.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A through D within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase II, Part 4, Step C)

The art teacher holds up a square piece of paper during art class. She asks the students to, "Look at the paper. See how big it is." The art teacher moves her finger around the perimeter of the paper using a continuous motion which results in a square path, she holds her finger at the end point. The students demonstrate tracking by following the path of her finger with eye movements and continue to attend to her finger when it ceases motion. The art teacher instructs the class to start painting where her finger stopped. The students are then given paper for painting.

Part 5: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in a circular motion and can perform discrete actions which indicate attending to the object or person when motion is terminated.

The difference between Part 4 and Part 5 is essentially that in Part 4 the object or person is moved continuously through two to four distinct paths, whereas in Part 5 the object or person is in a circular motion.

Instructional Procedure

An object or person is set in a circular motion from a position which is between 45° to the right and left of midline and between 45° above and below eye level. The object or person should cease motion within the same area and maintain the end position for at least three seconds. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and attending to the object or person when it ceases motion.

Step A: An object or person is moved in at least five different clockwise circular motions ranging within a 10° to 360° arc and is within reach of the students.

Step B: An object or person is moved in at least five different counter-clockwise circular motions ranging within a 10° to 360° arc and is within reach of the students.

Step C: An object or person is moved in at least five different clockwise circular motions of at least 360 degrees, within reach of the students.

Step D: An object or person is moved in at least five different counter-clockwise circular motions of at least 360 degrees within reach of the students.

Step E: Repeat Steps A through D with the object or person not within reach of the students.

Criterion Performance

Same as described in Part I.

Example Activity: (Phase II, Part 5, Step C)

The teacher places a small toy on a circular lazy susan in front of the student. The teacher says, 'Joe, follow the toy,' and then spins the lazy susan in a clockwise motion for two revolutions and stops the lazy susan so the toy is directly in front of Joe. Joe follows the toy with eye movements and reaches for the toy when it ceases motion.

Part 6: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in random motion and can perform discrete actions which indicate attending to the object or person when motion is terminated.

The difference between Part 5 and Part 6 is essentially that in Part 5 the object or person is in a circular motion, whereas in Part 6 the object or person is in random motion.

Instructional Procedure

An object or person is set in motion from a position which is between 45° to the right and left of midline and between 45° above and below eye level. The object or person should cease motion within the same area and maintain the end position for at least three seconds. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and attending to the object or person when it ceases motion.

Step A: An object or person is set in motion from at least five different starting positions within reach of the students.

Step B: An object or person is set in motion from at least five different starting positions not within reach of the students.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required in each of Steps A and B within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) using at least two rates of object or person movement.

Example Activity: (Phase II, Part 6, Step A)

Kun-Chou is seated at a table during art class. The art teacher holds a feather above Kun-Chou's eye level and says, "Watch the red feather." The teacher drops the feather which ceases motion when it reaches the table. Kun-Chou follows the feather's random descent and continues to attend to the feather when it ceases motion. The teacher then gives the feather to Kun-Chou and encourages her to drop the feather and follow its descent.

PHASE III: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION AND IS TEMPORARILY HIDDEN BY A BARRIER

Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and is temporarily hidden by a barrier.

Part I: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and is temporarily hidden by a transparent* barrier within reach.

Instructional Procedure

An object or person is set in motion from within reach of the students. The object or person passes behind, under or through a transparent barrier as it moves along the path. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: An object or person is moved in a horizontal path.

Step B: An object or person is moved in a vertical path.

Step C: An object or person is moved in a diagonal path.

Step D: An object or person is moved in a continuous motion of two to four distinct paths.

Step E: An object or person is moved in a circular path.

Step F: An object or person is moved in a random path.

Step G: An object or person is moved in at least five different paths including horizontal, vertical, diagonal, circular, or random motions.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required of Steps A through G within five seconds of teacher cues on three consecutive occasions.
In addition, students should correctly perform the actions of concern:

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* The term transparent as it is used in this context refers to a barrier which does not totally obstruct the object or person from at least one of the sensory modes of the students. For example, a pane of glass obstructs the tactile mode, but not the visual mode. A lightweight cloth obstructs the visual mode, but not the tactile mode.

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform;
e) using at least two rates of object or person movement; and
f) using at least three different barriers.

Example Activity: (Phase III, Part I, Step A)

The student is seated at a table with a toy car on it. The teacher says, "John, watch the car go." The teacher moves the car across the table in a horizontal path and at midline the car passes behind a clear pane of glass (4' x 6'). John demonstrates tracking by moving his head and eyes with the car as it moves along the table. John is then allowed to push the car.

Part 2: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and is temporarily hidden by a transparent barrier not within reach.

The difference between Part 1 and Part 2 is essentially that in Part I the object or person is within reach of the students, whereas in Part 2 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion and is not within reach of the students. The object or person passes behind, under or through a transparent barrier as it moves along the path. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: Follow Steps A through G as in Phase III, Part I.

Criterion Performance

Same as described in Part I.

Example Activity: (Phase III, Part 2, Step B)

Juanita and her father are shopping and approach a revolving door and stands inside the store. Juanita tracks her father's path with her eyes as he walks through the revolving door and then goes through the door herself to join her father.

Part 3: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and is temporarily hidden by an opaque* barrier within reach.

The difference between Part 1 and Part 3 is essentially that in Part 1 the barrier is transparent, whereas in Part 3 the barrier is opaque.

Instructional Procedure

An object or person is set in motion from within reach of the students. The object or person passes behind, under or through an opaque barrier as it moves along the path. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: Follow Steps A through G as in Phase III, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase III, Part 3, Step F)

The teacher and a blind student are standing in the middle of the room. The teacher instructs the student, Shannon, to follow the sound of a wind-up toy. The teacher winds the toy and sets it on the floor, as it moves randomly around the floor it passes under a chair which obscures and muffles the noise. Shannon demonstrates tracking of the sound by walking along the path the toy moves on, stopping at the chair, going around the chair, and recovering the toy's path on the other side of the chair. Shannon is then allowed to wind up the toy and set it on the floor.

Part 4: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and is temporarily hidden by an opaque barrier not within reach.

The difference between Part 3 and Part 4 is essentially that in Part 3 the object or person is within reach of the students, whereas in Part 4 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion and is not within reach

* The term opaque as it is used in this context refers to a barrier which obscures the object or person from the sensory modes of the students. For example, a frosted window pane obscures the visual and tactile modes.

of the students. The object or person passes behind, under or through an opaque barrier as it moves along the path. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: Follow Steps A through G as in Phase III, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase III, Part 4, Step D)

Ivan and his family are at a swimming pool and Ivan's brother is standing on the diving board. The mother tells the student, "Ivan, watch Peter dive." Peter dives into the pool and surfaces. Ivan follows Peter's movement into, through and out of the water with head and eye movements. Ivan is then allowed to play in the swimming pool with Peter.

Part 5: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and is temporarily hidden by a solid* barrier within reach.

The difference between Part 3 and Part 5 is essentially that in Part 3 the barrier is opaque, whereas in Part 5 the barrier is solid.

Instructional Procedure

An object or person is set in motion from within reach of the students. The object or person passes behind, under or through a solid barrier as it moves along the path. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: Follow Steps A through G as in Phase III, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase III, Part 5, Step E)

Kirsten and her father are playing with a toy electrical train. Kirsten is directed to "Follow the train." Father

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* The term solid as it is used in this context refers to a barrier which totally obstructs the object or person from the sensory modes of the students. A cardboard box obstructs the visual and tactile modes.

presses a button which starts the train around the track, as the train moves it passes through a tunnel. Kristen follows the path of the train by pointing to the train as it moves around the circular track and points to the tunnel when the train passes through it. Kirsten is then allowed to push the button.

Part 6: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and is temporarily hidden by a solid barrier not within reach.

The difference between Part 5 and Part 6 is essentially that in Part 5 the object or person is within reach of the students, whereas in Part 6 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion and is not within reach of the students. The object or person passes behind, under or through a solid barrier as it moves along the path. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person.

Step A: Follow Steps A through G as in Phase III, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase III, Part 6, Step A)

The teacher stands approximately five feet away from Karl and says, 'Watch where I go.' The teacher then walks from a position to the left of Karl's midline, walks behind a room divider and proceeds to the right of midline. Karl follows the teacher's path with head and eye movements.

PHASE IV: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION AND TO ATTEND TO A BARRIER WHEN THE OBJECT OR PERSON CEASES MOTION AND IS HIDDEN BY THE BARRIER

Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier when the object or person ceases motion and is hidden by the barrier.

Part 1: Teaching or verifying that students can perform discrete

actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier when the object or person ceases motion and is hidden by a transparent barrier within reach.

Instructional Procedure

An object or person is set in motion from within reach of the students. The object or person ceases motion behind, under or within a transparent barrier. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and to demonstrate attending to the barrier when the object or person ceases motion.

Step A: An object or person is moved in a horizontal path.

Step B: An object or person is moved in a vertical path.

Step C: An object or person is moved in a diagonal path.

Step D: An object or person is moved in a continuous motion of two to four distinct paths.

Step E: An object or person is moved in a circular path.

Step F: An object or person is moved in a random path.

Step G: An object or person is moved in at least five different paths including horizontal, vertical, diagonal, circular or random motions.

Criterion Performance

It is suggested that students be taught to correctly perform the actions required of Steps A through G within five seconds of teacher cues on three consecutive occasions.
In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform;
e) using at least two rates of object or person movement; and
f) using at least three different barriers.

Example Activity: (Phase IV, Part 1, Step B)

Elsa is positioned in front of the teacher at snack time. The teacher holds a cookie above Elsa's eye level and says, "Elsa, look at the cookie." The teacher moves the cookie downward and places the cookie under a glass container. Elsa tracks the cookie as it moves vertically and continues to attend to the cookie when it is under the container. The teacher then removes the cookie and gives it to Elsa.

Part 2: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier when the object or person ceases motion and is hidden by a transparent barrier not within reach.

The difference between Part 1 and Part 2 is essentially that in Part 1 the object or person is within reach of the students, whereas in Part 2 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion and is not within reach of the students. The object or person ceases motion behind, under, or within a transparent barrier. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and demonstrate attending to the barrier when the object or person ceases motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 2, Step F)

The student and his mother are going to the bakery to buy donuts. As they stand in front of the glass container three feet away from them, the mother asks the student, 'What do you want? Watch the lady's hand." The bakery clerk moves her hand under the counter and points to the chocolate glazed donuts. The student follows the clerk's hand with eye motions and continues to attend as the clerk points to the donuts. The student shakes her head 'yes" and the mother purchases the donuts.

Part 3: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier or object or person when the object or person ceases motion and is partially hidden by an opaque barrier within reach.

The difference between Part 1 and Part 3 is that the object or person ceases motion behind, and is totally hidden by a transparent barrier, whereas in Part 3 the object or person ceases motion behind and is partially hidden* by an opaque barrier.

Instructional Procedure

An object or person is set in motion from within reach of the students. The object or person cease motion behind, under or within an opaque barrier, and is partially hidden by the barrier. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and demonstrate attending to the barrier or object or person when the object or person ceases motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 3, Step A)

Marcia is going to a birthday party. Mother is wrapping the teddy bear in blue cellophane. She says "watch the teddy bear Marcia". Mother moves the teddy bear through the air and places it part way under the blue cellophane. Marcia follows the teddy bear with her eyes and points to it when it ceases motion under the cellophane. Marcia is then allowed to help wrap the teddy bear.

Part 4: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier or object or person when the object or person ceases motion and is partially hidden by an opaque barrier not within reach.

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*The phrase partially hidden as it is used in this context refers to a situation in which a part of the object or person is hidden by the barrier. It is suggested that students be exposed to additional presentations with the portion of the object or person to be hidden being gradually increased. This strategy should be utilized in each part which refers to partially hidden objects or persons.

The difference between Part 3 and Part 4 is essentially that in Part 3 the object or person is within reach of the students, whereas in Part 4 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion and is not within reach of the students. The object or person ceases motion behind, under or within an opaque barrier, and is partially hidden by the barrier. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and demonstrates attending to the barrier or object or person when the object or person cease motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 4, Step D)

The student and his father are playing outside and decide that it is time to go in. The father tells Jack, "Follow me." Father walks to the house, opens the door to the screened porch and walks partially into the porch. Jack follows his father's path with head and eye motions and then points to where his father is standing in the doorway. Father encourages Jack to come in and Jack hurries into the porch.

Part 5: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier when the object or person ceases motion and is totally hidden by an opaque barrier within reach.

The difference between Part 3 and Part 5 is essentially that the object or person is partially hidden by an opaque barrier, whereas in Part 5 the object or person is totally hidden by an opaque barrier.

Instructional Procedure

An object or person is set in motion from within reach of the students. The object or person ceases motion behind, under, or within an opaque barrier, and is totally hidden by the barrier. The teacher issues an appropriate cue which requires the student to demonstrate tracking of the

object or person while it is in motion and to demonstrate attending to the barrier when the object or person ceases motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 5, Step B)

The class is engaged in waterplay and the teacher holds several toys above the tub of sudsy water. The students are instructed to watch the toys. The teacher drops the toys one by one into the water. Some of the students demonstrate tracking by following the toys' paths with eye movements and continue to attend the toys' positions as they rest at the bottom of the tub. The students are then allowed to play with the toys in the sudsy water.

Part 6: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier when the object or person ceases motion and is totally hidden by an opaque barrier not within reach.

The difference between Part 5 and Part 6 is essentially that in Part 5 the object or person is within reach of the students, whereas in Part 6 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion and is not within reach of the students. The object or person ceases motion behind, under or within an opaque barrier and is totally hidden by the barrier. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and demonstrate attending to the barrier when the object or person ceases motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 6, Step F)

The student's family is out on a picnic and are playing with the family dog. The sister tells Mary to "Watch where Spot goes," and places Spot's favorite ball under a blanket. Spot runs around and finally crawls under the blanket to get the ball. Mary follows Spot with head and eye movements, then giggles and points to the blanket where Spot's outlined form can be seen. Mary is then allowed to hide Spot's ball.

Part 7: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions actions which indicate attending to a barrier or object or person when the object or person ceases motion and is partially hidden by a solid barrier within reach.

The difference between Part 5 and Part 7 is essentially that in Part 5 the object or person is totally hidden by an opaque barrier, whereas in Part 7 the object or person is partially hidden by a solid barrier.

Instructional Procedure

An object or person is set in motion from within reach of the students. The object or person ceases motion behind, under or within a solid barrier, and is partially hidden by the barrier. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and demonstrate attending to the barrier or object or person when the object or person ceases motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 7, Step C)

The student and teacher are working on the floor with a fine motor task. The teacher holds a small can in her lap and tells Laura, 'Follow the peg.' The teacher places the peg in the can, so that part of it is hidden from view. Laura follows the path of the peg and continues to look at the peg when it is in the can. Laura is then allowed to put a peg in the can.

Part 8: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform dis-

crete actions which indicate attending to a barrier or object or person when the object or person ceases motion and is partially hidden by a solid barrier not within reach.

The difference between Part 7 and Part 8 is essentially that in Part 7 the object or person is within reach of the students, whereas in Part 8 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion and is not within reach of the students. The object or person ceases motion behind, under or within a solid barrier, and is partially hidden by the barrier. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and demonstrate attending to the barrier or object or person when the object or person ceases motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 8, Step D)

The teacher stands in front of the class five feet away from the students. The teacher instructs the class, 'Watch me. Look where I go.' The teacher moves about and walks behind a room divider; her feet and head are not hidden behind the barrier. The students follow the teacher with head and eye movements and some of the students point to the divider when the teacher stops moving.

Part 9: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier when the object or person ceases motion and is totally hidden by a solid barrier within reach.

The difference between Part 7 and Part 9 is essentially that the object or person is partially hidden by a solid barrier, whereas in Part 9 the object or person is totally hidden by a solid barrier.

Instructional Procedure

An object or person is set in motion from within reach of the students. The object or person ceases motion behind,

under, or within a solid barrier, and is totally hidden by the barrier. The teacher issues an appropriate cue which requires the student to demonstrate tracking of the object or person while it is in motion and demonstrate attending to the barrier when the object or person ceases motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 9, Step D)

The teacher and the students are playing a variation of hide-and-seek. The teacher holds a small doll up, and tells the student, "Watch the doll." The teacher moves the doll in several directions and then hides it behind his back. The student points to doll as it moves and attempts to reach the doll behind the teacher's back.

Part 10: Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform discrete actions which indicate attending to a barrier when the object or person ceases motion and is totally hidden by a solid barrier not within reach.

The difference between Part 9 and Part 10 is essentially that in Part 9 the object or person is within reach of the students, whereas in Part 10 the object or person is not within reach of the students.

Instructional Procedure

An object or person is set in motion and is not within reach of the students. The object or person ceases motion behind, under or within a solid barrier and is totally hidden by the barrier. The teacher issues an appropriate cue which requires the students to demonstrate tracking of the object or person while it is in motion and demonstrate attending to the barrier when the object or person ceases motion.

Step A: Follow Steps A through G as in Phase IV, Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 10, Step G)

Rafael and his mother are putting clean clothes away in the student's bedroom. Mom says, 'Let's put your clothes away.

Watch where they go." Mother picks up an article of clothing and places it in a dresser drawer. Rafael tracks the clothing and attends to the drawer when it is closed. Mother repeats the activity until all of the clean clothes have been put in the dresser or closet.

PHASE V: TEACHING STUDENTS TO TRACK AN OBJECT OR PERSON WHILE THAT OBJECT OR PERSON IS IN MOTION, UNTIL THE OBJECT OR PERSON CEASES MOTION AND IS HIDDEN BY A BARRIER, AND TO REMOVE THE BARRIER TO REGAIN CONTACT WITH THE OBJECT OR PERSON.

Teaching or verifying that students can perform discrete actions which indicate tracking of an object or person while that object or person is in motion and can perform actions which remove the barrier which hides the object or person.

The actions required in Phase V are an extension of those required in Phase IV. The major difference is that in Phase IV, the students are required to attend to the barrier when the object or person ceases motion and is hidden by the barrier, whereas in Phase V the students are also required to remove that barrier in order to regain contact with the object or person.

Due to the similarity of teacher and student actions in Phase IV and Phase V, it is suggested that the sequence delineated in Parts 1 through 10 of Phase IV be utilized to facilitate the development of Phase V skills. The teacher will issue cues which require the students to demonstrate tracking of an object or person while that object or person is in motion and which require the student to remove the which hides the object or person when motion is terminated.

Example Activity: (Phase V, Part 9, Step E)

Stan and his father are playing with a toy car. Father instructs Stan, "Watch the car go. Find the car." The car is moved around a circular path and is stopped under a wooden bridge. Stan tracks the moving car until it stops under the bridge. Stan knocks the bridge over and picks the car up. Stan is then allowed to play with the car.

SECTION V: STRATEGIES FOR TEACHING SCANNING AND SELECTION SKILLS

A. Introduction

Parents of children who can communicate verbally often ask the children verbal questions presenting a variety of options (e.g., "What do you want for lunch?")or questions that present a limited number of options (e.g.,"Would you like soup or hot dogs for lunch?") and expect verbally stated preferences in return. Children who can communicate verbally can also look into the refrigerator and initiate a communicative interactions by saying "I don't want spinach for supper" or "I want spaghetti for breakfast". There are hundreds of instances in the day of almost all children who have complex verbal communication skills in which they verbally communicate preferences; when presented with a wide variety of options, when presented with only a few options and when they have scanned realistic possibilities.

Students who cannot communicate verbally should be afforded the same opportunities to manifest preferences as students who can communicate verbally. Unfortunately, however, because some students cannot communicate verbally they are often denied the presentation of options and the opportunity to initiate communicative interactions. Section V is concerned with teaching scanning and selection skills to non-verbal severely handicapped students so that these students may also be given the opportunity to make choices.

The ability to scan is crucial to the determination and communication of rational choices. Without the skills necessary to use visual, tactile and auditory sensory channels to scan environmental options, actions which indicate selection often are random, confused

and in actuality do not represent subjective preferences. In addition to the specific instructional sequence the teacher should consider the following factors: Communication Boards. The skills necessary to use communication boards effectively represent some of the most functional communication skills available to non-verbal severely handicapped students. Communication board arrangements generally employ two general presentation strategies: concurrent presentation and consecutive presentation.

A concurrent presentation strategy requires the presentation of two or more options at the same time. Restaurant menus, supermarkets, ice cream stores, the AAMD classification manual, are but a few examples of the concurrent presentation strategy. A consecutive presentation strategy requires the presentation of options one after another in such a way that no two options are presented at the same time. Paging through a catalogue and pushing the selector dial on a revolving vending machine are but a few examples of consecutive presentation strategies. Obviously, consecutive and concurrent presentation strategies can be combined.

Implementing the Instructional Sequence. Prior to implementing the scanning and selection instructional sequence several factors should be made salient. First, the sequence is suggestive of what a teacher might do and not a recipe of what to do. Second, attempts have been made to arrange the sequence from easy to hard requirements. Obviously, easy to hard taught are arbitrary and must be adapted for individual students. Third, attending and scanning skills are functional in all aspects of development and should be whether or not the use of communication board formats are under consideration.

Fourth, actions that are used to indicate preferences should be observable, clearly distinct from other actions that might occur and utilized consistently.

Finally, in the interest of self-dignity, self-awareness, independence and individual freedom, students are allowed to communicate 'NO', 'NONE', 'NOTHING' etc. That is, given two representations, one of which is a blank card, the students may have a 50-50 chance of selecting the blank card. When the students act on the blank card, the result of this action is the removal of the items. Thus, the consequence of selecting the blank card, getting 'nothing', is discrete from the consequence of selecting other representations. The blank card, besides being a distractor, also presents and/or teaches the option of choosing "nothing". In most instances, students are given nothing only when they do not perform an action toward any of the presented items. In this scanning and selection sequence students can actively choose 'nothing' by acting on a blank card.

B. Overview of an Instructional Sequence for Teaching Scanning and Selection Skills

PHASE I: TEACHING STUDENTS TO ATTEND TO AN OBJECT OR PERSON

In Phase I students are taught to attend to:

An object or person which can continuously activate two sensory modalities	Parts 1 and 2
An object or person which can intermittently activate two sensory modalities	Parts 3 and 4
An object or person which can activate one sensory modality	Parts 5 and 6
A representation and its referent which can activate one sensory modality.	Parts 7 and 8

PHASE II: TEACHING STUDENTS TO ATTEND TO AN OBJECT OR A PERSON PRIOR TO THE SELECTION OF THAT OBJECT OR PERSON WHEN GIVEN TWO CONSECUTIVE CUES TO PERFORM BOTH ATTENDING AND SELECTION ACTIONS.

In Phase II students are give TWO cues to attend to and then to select:

An object or a person	Parts 1 and 2
A representation of an object or a person.	Parts 3 and 4

PHASE III: TEACHING STUDENTS TO ATTEND TO AN OBJECT OR A PERSON PRIOR TO THE SELECTION OF THAT OBJECT OR PERSON WHEN GIVEN ONE CUE TO PERFORM BOTH ATTENDING AND SELECTION ACTIONS.

In Phase III students are given ONE cue to attend to and then to select:

An object or a person	Parts 1 and 2
A representation of an object or a person.	Parts 3 and 4

CONCURRENT PRESENTATION

PHASE IV: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS WHICH ARE PRESENTED CONCURRENTLY.

In Phase IV students are taught to scan:

Two objects or persons	Parts 1 and 2
Two representations, one of which is a blank card	Parts 3 and 4
Two representations of objects or persons.	Parts 5 and 6

PHASE V: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONCURRENTLY PRESENTED AND TWO CUES ARE GIVEN TO PERFORM BOTH SCANNING AND SELECTION ACTIONS.

In Phase V students are given TWO cues to scan and then select one of:

Two objects or persons	Parts 1 and 2
Two representations, one of which is a blank card.	Parts 3 and 4
Two representations of objects or persons.	Parts 5 and 6

PHASE VI: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONCURRENTLY PRESENTED AND ONE CUE IS GIVEN TO PERFORM BOTH SCANNING AND SELECTION ACTIONS.

In Phase VI students are given ONE cue to scan and then select one of:

Two objects or persons	Part 1
Two representations, one of which may be a blank card.	Part 2

PHASE VII: TEACHING STUDENTS TO SCAN MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONCURRENTLY PRESENTED AND TWO CUES ARE GIVEN TO PERFORM BOTH SCANNING AND SELECTION ACTIONS.

In Phase VII students are given TWO cues to scan and then select one of:

More than two objects or persons	Part 1
More than two representations, one of which is always a blank.	Part 2

PHASE VIII: TEACHING STUDENTS TO SCAN MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONCURRENTLY PRESENTED AND ONE CUE IS GIVEN TO PERFORM BOTH SCANNING AND SELECTION.

In Phase VIII students are given ONE cue to scan and then select one of:

More than two objects or persons	Part 1
More than two representations, one of which is always a blank.	Part 2

CONSECUTIVE PRESENTATION

PHASE IX: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS WHICH ARE CONSECUTIVELY PRESENTED THREE OR FOUR TIMES IN A DEFINED, REPEATING CYCLE.

In Phase IX students are taught to scan:

Two objects or persons	Parts 1 and 2
Two representations of an object or a person.	

These materials are presented THREE or FOUR times.

PHASE X: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED THREE OR FOUR TIMES AND TWO CUES ARE GIVEN TO PERFORM SCANNING AND SELECTION.

In Phase X students are given TWO cues to scan and then select one of:

Two objects or persons	Parts 1 and 2
Two representations of an object or person	Parts 3 and 4
Two representations, one of which may be a blank.	Part 5

These materials are presented THREE or FOUR times.

PHASE XI: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED THREE OR FOUR TIMES AND ONE CUE IS GIVEN TO PERFORM BOTH SCANNING AND SELECTION.

In Phase XI students are given ONE cue to scan and then select one of:

Two objects or persons	Parts 1 and 2
Two representations, one of which may be a blank card	Part 3

These materials are presented THREE or FOUR times.

PHASE XII: TEACHING STUDENTS TO SCAN MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED THREE OR FOUR TIMES AND ONE CUE IS GIVEN TO PERFORM BOTH SCANNING AND SELECTION.

In Phase XII students are given ONE cue to scan and then select one of:

More than two objects or persons	Parts 1 and 2
More than two representations, of which may be a blank card.	Part 3

These materials are presented THREE or FOUR times.

PHASE XIII: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED TWICE AND TWO CUES ARE GIVEN TO PERFORM BOTH SCANNING AND SELECTION.

In Phase XIII students are given TWO cues to scan and select one of:

Two objects or persons	Part 1
Two representations, one of which may be a blank.	Part 2

These materials are presented TWICE.

PHASE XIV: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED TWICE AND ONE CUE IS GIVEN TO PERFORM BOTH SCANNING AND SELECTION.

In Phase XIV students are given ONE cue to scan and then select one of:

Two objects or persons	Part 1
Two representations, one of which may be a blank card.	Part 2

These materials are presented TWICE.

PHASE XV: TEACHING STUDENTS TO SCAN MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED TWICE AND ONE CUE IS GIVEN TO PERFORM BOTH SCANNING AND SELECTION.

In Phase XV students are given ONE cue to scan and then select one of:

More than two objects or persons	Part 1
More than two representations, one of which is always a blank card.	Part 2

These materials are presented TWICE.

PHASE XVI: TEACHING STUDENTS TO SCAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED ONCE AND ONE CUE IS GIVEN TO PERFORM BOTH SCANNING AND SELECTION.

In Phase XVI students are given ONE cue to scan and then select one of:

Two objects or persons	Part 1
Two representations, one of which may be a blank card.	Part 2

These materials are presented ONCE.

PHASE XVII: TEACHING STUDENTS TO SCAN MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSEDUTIVELY PRESENTED ONCE AND ONE CUE IS GIVEN TO PERFORM BOTH SCANNING AND SELECTION.

In Phase XVII students are given ONE cue to scan and then select one of:

More than two objects or persons	Part 1
More than two representations, one of which is always a blank card.	Part 2

These materials are presented ONCE.

C. Instructional Sequence for Teaching Scanning and Selection Skills

PHASE I: TEACHING ATTENDING TO AN OBJECT OR PERSON[1]

Teaching or verifying that students can perform discrete actions which indicate attending to a presented object or person's face.

Part 1: Teaching or verifying that students can perform discrete actions which indicate attending to a single object or a person's face, when that object or person's face is placed within reach of the students and can continuously activate at least two sensory modalities.

Instructional Procedure

An object or person's face which can continuously activate at least two sensory modalities is placed within reach. The teacher issues an appropriate cue which requires the students to demonstrate attending to the object or person's face.

Step A: An object or person's face is placed in midline position at eye level.

Step B: An object or person's face is placed in a position 45° to the right of midline at eye level.

Step C: An object or person's face is placed in a position 45° to the left of midline at eye level.

Step D: An object or person's face is placed in at least five different positions ranging between 45° to the right and left of the midline at eye level.

Step E: An object or person's face is placed at midline and 15° above eye level.

Step F: An object or person's face is placed at midline and 45° above eye level.

Step G: An object or person's face is placed at midline and 15° below eye level.

Step H: An object or person's face is placed at midline and 45° below eye level.

Step I: An object or person's face is placed in at least five different positions ranging within 45° to the right and left of midline, and 45° above and below eye level.

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[1]The phrase "attending to" as it is used in this context is meant to be synonymous with phrase "awareness of".

Criterion Performance

It is suggested that students are taught to correctly perform the actions required in each of Steps A through I within five seconds of teacher cues on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings; and
d) in reaction to at least two verbal or non-verbal cues to perform.

Example Activity: (Phase I, Part 1, Step B)

The teacher presents a music box 45^{o} to the right and twelve inches away from the student's face, at the midline position. The teacher plays the music box and says, "Sue, find the music." The student then demonstrates attending to the music box by turning her head toward the music box. The student could also point to, touch, reach for, move her eyes to the music box as a demonstration of attending.

Part 2: Teaching or verifying that students can perform discrete actions which indicate attending to a single object or person's face when that object or person's face is not within reach of the students and can continuously activate at least two sensory modalities.

The difference between Part 1 and Part 2 is essentially that in Part 1 the object or person's face is placed within reach of the students, whereas in Part 2 the object or person's face is not within reach of the students.

Instructional Procedure

An object or person's face which can continuously activate at least two sensory modalities is not within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate attending to the object or person's face.

Step A: Follow Steps A through I as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase I, Part 2, Step H)

A mother stands in front of and five feet away from her child, who is sitting in a chair. The mother pushes a musical toy along the floor toward the child's midline. Mother says, 'Eric, watch the toy.' Eric may demonstrate attending by smiling and leaning toward the toy.

Part 3: Teaching or verifying that students can perform discrete actions which indicate attending to a single object or person's face when that object or person's face is placed within reach of the students and can intermittently activate at least two sensory modalities.

The difference between Part 1 and Part 3 is essentially that in Part 1 the object or person's face can continuously activate at least two sensory modalities, whereas in Part 3 the object or person's face can intermittently activate at least two sensory modalities.

Instructional Procedure

An object or person's face which can intermittently activate at least two sensory modalities is placed within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate attending to the object or person's face.

Step A: Follow Steps A through I as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase 1, Part 3, Step C)

The physical therapist places a vibrator on a blind student's outstretched left forearm and turns the switch on and off in short intervals. This form of presentation provides intermittent activation of the tactile and auditory modalities. The therapist directs the student to 'find the noise.' The student may demonstrate attending by reaching toward the vibrator.

Part 4: Teaching or verifying that students can perform discrete actions which indicate attending to a single object or person's face when that object or person's face is not within reach of the students and can intermittently activate at least two sensory modalities.

The difference between Part 3 and Part 4 is essentially that in Part 3 the object or person's face is placed within reach of the students, whereas in Part 4, the object or person's face is not within reach of the students.

Instructional Procedure

An object or person's face which can intermittently activate at least two sensory modalities is not within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate attending to the object or person's face.

Step A: Follow Steps A through I as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase I, Part 4, Step A)

A telephone is placed in a midline position, ten feet in front of the student. The teacher allows the phone to ring several times to provide intermittent activation of the visual and auditory modalities. The teacher then asks, "What's ringing?" and the student demonstrates awareness by looking toward or pointing to the telephone.

Part 5: Teaching or verifying that students can perform discrete actions which indicate attending to a single object or person's face, when that object or person's face is placed within reach of the students and the object can activate only one sensory modality.

The difference between Part 5 and Part 5 is essentially that in Part 5 the object or person's face could intermittently activate at least two sensory modalities, whereas in Part 5 the object or person's face can activate only one sensory modality.

Instructional Procedure

An object or person's face which can activate only one sensory modality is placed within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate attending to the object or person's face.

Step A: Follow Steps A through I as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase I, Part 5, Step D)

While reading a story, the father holds up the open book to the left of the student's midline and says, "Look at the picture." The pictures in the book can only activate the visual sense. The child demonstrates attending to the book or pictures by turning his head to look at the book. The father presents the book in this manner several times during the story, varying the position of the book between 45° to the right and left of midline at the student's eye level, but not varying his own position.

Part 6: Teaching or verifying that students can perform discrete actions which indicate attending to a single object or person's face, when that object or person's face is not within reach of the students and the object can activate only one sensory modality.

The difference between Part 5 and Part 6 is essentially that in Part 5 the object or person's face is placed within reach of the students, whereas in Part 6 the object or person's face is not within reach of the students.

Instructional Procedure

An object or person's face which can activate only one sensory modality is not within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate attending to the object or person's face.

Step A: Follow Steps A through I as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase 1, Part 6, Step H)

The student is sitting on the couch at home and a brother is lying on the floor directly in front of the student. A sister tells the student, "Find Jack (brother)." The student demonstrates awareness by looking down at the floor and smiles as he looks at the brother's face.

Part 7: Teaching or verifying that students can perform discrete actions which indicate attending to a representation of an object or person when both the object or person (referent) and the representation are in reach of the students.

The difference between Part 6 and Part 7 is essentially that in Part 6 the students are required to demonstrate attending to an object or person's face, whereas in Part 7, the students are required to demonstrate attending to a representation of an object or person when the object or person is also present.

Instructional Procedure

An object or person's face and its representation are both placed within reach of the students. The referent and representation are placed at the eye level at which the students demonstrated criterion performance in Parts 1-6 with the least difficulty. The teacher issues an appropriate cue which requires the students to demonstrate attending to the representation.

Step A: A representation is placed in the midline position and the referent is placed in the midline position.

Step B: A representation is placed in the midline position and the referent is placed 45° to the right of midline.

Step C: A representation is placed in the midline position and the referent is placed 45° to the left of midline.

Step D: A representation is placed in the midline position and the referent is placed in at least five different positions ranging between 45° to the right and left of midline.

Step E: A referent is placed in the midline position and the representation is placed 45° to the right of midline.

Step F: A referent is placed in the midline position and the representation is placed 45° to the left of midline.

Step G: A referent is placed in the midline position and the representation is placed in at least five different positions ranging between 45° to the right and left of midline.

Step H: The representation and referent are both placed in five different positions ranging between 45° to the right and left of midline.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of the Steps A through H within five seconds of teacher cue on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues to perform; and
e) with the referent and representation presented at three different eye levels.

Example Activity: (Phase I, Part 7, Step C)

The teacher sets the table for snacks and places the cups to the left of the student's midline and then places a photograph of the cup directly in front of the student. The teacher then says, "Juris, find the picture of cup." The student looks at the photograph of the cup and the teacher immediately moves the cup towards the student and pours juice into the cup.

Part 8: Teaching or verifying that students can perform discrete actions which indicate attending to a representation, when the representation is within reach of the students and the referent is not within reach of the students.

The difference between Part 7 and Part 8 is essentially that in Part 7, both the representation and referent are within reach, whereas in Part 8, the representation is in reach but the referent is not within reach.

Instructional Procedure

An object or person is placed out of reach of the students and the representation of the object or person is placed in reach of the students. The referent and representation are placed at

the eye level at which the students demonstrated criterion performance in Parts 1-6 with the least difficulty. The teacher issues an appropriate cue which requires the students to demonstrate attending to the representation.

Step A: Follow Steps A through H as in Part 7.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase I, Part 8, Step F)

The student's bike is positioned at midline ten feet away from the student and a picture of a bike is presented to the student's left approximately ten inches away at eye level. The playground supervisor may say, "Kelly, do you want to ride the bike? Look at the picture of a bike." The student demonstrates attending by looking at the picture of the bike. The supervisor then takes Kelly to the bike and lets him ride it.

PHASE II: TEACHING ATTENDING TO AN OBJECT OR PERSON PRIOR TO THE SELECTION OF THE OBJECT OR PERSON, GIVEN TWO CUES TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate attending to and selection of a single object or person when given two consecutive cues to perform both attending and selection.

Part 1: Teaching or verifying that students can consecutively perform discrete actions which indicate attending to and selection of an object or person's face which is placed within reach of the students and when the students are given two consecutive cues to perform both attending and selection.

Instructional Procedure

An object or person's face is placed within reach of the students. The teacher issues two consecutive cues; the first cue will require the students to demonstrate attending to the object or person's face and the second cue will require the students to make a selection action toward the object or person's face.

Step A: An object or person's face is placed in a midline position at eye level.

Step B: An object or person's face is placed in a position 45° to the right of midline at eye level.

Step C: An object or person's face is placed in a position 45° to the left of midline at eye level.

Step D: An object or person's face is placed in at least five different positions ranging between 45° to the right and left of the midline at eye level.

Step E: An object or person's face is placed at midline and 15° above eye level.

Step F: An object or person's face is placed at midline and 45° above eye level.

Step G: An object or person's face is placed at midline and 15° below eye level.

Step H: An object or person's face is placed at midline and 45° below eye level.

Step I: An object or person's face is placed in at least five positions ranging within 45° to the right and left of midline, and 45° above and below eye level.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of Steps A through I within five seconds of teacher cue on three consecutive occasions. In addition, students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings; and
d) in reaction to at least two sets of consecutive verbal or non-verbal cues to perform.

Example Activity: (Phase II, Part 1, Step B)

Instruction is occurring in front of a sink, with the soap placed 45° to the right of the student's midline. The student's sister says, "Kim, find the soap and pick it up." Kim turns, finds the soap by looking at it, and picks it up. They proceed to wash their hands.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate attending to and selection of an object or person's face which is not within reach of the students and when the students are given two consecutive cues to perform both attending and selection.

The difference between Part 1 and Part 2 is essentially that in Part 1 the objects and persons are within reach, whereas in Part 2 the objects and persons are not within reach.

Instructional Procedure

An object or person's face is not within reach of the students. The teacher issues two consecutive cues; the first cue will require the students to demonstrate attending to the object or person's face and the second cue will require the students to make a selection action toward the object or person's face.

Step A: Follow Steps A through I as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase II, Part 2, Step H)

The student is told at dismissal time by the aide, "Mark, look for your bus, then walk over and get on." Mark looks out the door, then approaches his bus which is the only one parked in the school lot.

Part 3: Teaching or verifying that students can consecutively perform discrete actions which indicate attending to and selection of a representation of an object or person when both the referent and representation are in reach of the students, and when the students are given two consecutive cues to perform both attending and selection.

The difference between Part 1 and Part 3 is essentially that in Part 1 the students are required to demonstrate attending to and selection of an object or person's face, whereas in Part 3 the students are required to demonstrate attending to and selection of a representation when the referent is also present.

Instructional Procedure

An object or person's face and its representation are both placed within reach of the students. The referent and representation are placed at the eye level at which the students demonstrated criterion performance in Part 1 with the least difficulty. The teacher issues two consecutive cues; the first cue will require the students to demonstrate attending to the representation and the second cue will require the students to make a selection action toward the representation.

Step A: A representation is placed in the midline position and the referent is placed in the midline position.

Step B: A representation is placed in the midline position and the referent is placed 45° to the right of midline.

Step C: A representation is placed in the midline position and the referent is placed 45° to the left of midline.

Step D: A representation is placed in the midline position and the referent is placed in at least five different positions ranging between 45° to the right and left of midline.

Step E: A referent is placed in the midline position and the representation is placed 45° to the right of midline.

Step F: A referent is placed in the midline position and the representation is placed 45° to the left of midline.

Step G: A referent is placed in the midline position and the representation is placed in at least five different positions ranging between 45° to the right and left of midline.

Step H: The representation and referent are both placed in five different positions ranging between 45° to the right and left of midline.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of the Steps A through H within five seconds of teacher cue on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two sets of consecutive verbal or non-verbal cues to perform; and
e) with the referent and representation presented at three eye levels.

Example Activity: (Phase II, Part 3, Step F)

After the main course of lunch is over, a bowl of jello is placed on the table at the student's midline. A picture of jello is presented to the left of the student's midline on the table. The teacher aide says, "Yoko, look at the jello picture." Yoko turns and looks at the picture. The aide says, "Touch the picture," and the student places her hand on top of the picture. The aide gives Yoko some jello.

Part 4: Teaching or verifying that students can consecutively perform discrete actions which indicate attending to and selection of a representation of an object or person when the representation is within the reach of the students and the referent is not within reach of the students, and when the students are given two consecutive cues to perform both attending and selection.

The difference between Part 3 and Part 4 is essentially that in Part 3 the representation and referent are both within reach, whereas in Part 4 the representation is in reach and the referent is not within reach.

Instructional Procedure

An object or person is not within reach of the students and the representation of an object or person is placed in reach of the students. The referent and representation are placed at the eye level at which the students demonstrated criterion performance in Part 1 with the least difficulty. The teacher issues two

consecutive cues; the first cue will require the students to demonstrate attending to the representation and the second cue will require the students to make a selection action toward the representation.

Step 1: Follow Steps A through H as in Part 3.

Criterion Performance

Same as described in Part 3.

Example Activity: (Phase II, Part 4, Step G)

The student is sitting on a mat in the gym and a balloon is tied from the ceiling; the balloon hangs two feet above the student's head, five feet in front of the student and at midline. The phy.ed. instructor presents a picture of a balloon to the student at midline and says, "Pat, find the balloon picture and touch it." Pat looks at the picture of the balloon, then touches it. The balloon is batted over to Pat to play with. The student is presented with the picture in various positions to the right and left of midline.

PHASE III: TEACHING ATTENDING TO AN OBJECT OR PERSON PRIOR TO THE SELECTION OF THAT OBJECT OR PERSON, GIVEN ONE CUE TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate attending to and selection of a single object or person when given a single cue to perform both attending and selection.

Part 1: Teaching or verifying that students can consecutively perform discrete actions which indicate attending to and selection of an object or person's face which is placed within reach of the students, and when the students are given one cue to perform both attending and selection.

Instructional Procedure

An object or person's face is placed within reach of the students. The teacher issues one cue which will require the students to demonstrate attending to the object or person's face and to make a selection action toward the object or person's face. The object or person's face is placed at the eye level at which the students demonstrated criterion performance in Phase II, Part 1 with the least difficulty.

Step A: An object or person's face is placed in a midline position.

Step B: An object or person's face is placed in a position 45° to the right of midline.

Step C: An object or person's face is placed in a position 45° to the left of midline.

Step D: An object or person's face is placed in at least five different positions ranging between 45° to the right and left of the midline.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of the Steps A through D within five seconds of teacher cue on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues; and
e) with the object or person's face presented at three eye levels.

Example Activity: (Phase III, Part 1, Step C)

At the door to the auditorium, another student presents a movie ticket to the left of the student's midline and says, "Take your ticket." The student demonstrates attending by first looking to his left at the ticket and then demonstrates selection by reaching out and taking the ticket. The student's wheelchair is then pushed into the auditorium so he can see a movie.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate attending to and selection of an object or person's face which is not within reach of the students and when the students are given one cue to perform both attending and selection.

The difference between Part 1 and Part 2 is essentially that in Part 1 the objects and persons are within reach, whereas in Part 2 the objects or persons are not within reach.

Instructional Procedure

An object or person's face is not within reach of the students. The teacher issues one cue which will require the students to demonstrate attending to the object or person's face and to make a selection action toward the object or person's face. The object or person's face is placed at the eye level at which the students demonstrated criterion performance in Phase II, Part 1 with the least difficulty.

Step A: Follow Steps A through D as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase III, Part 2, Step C)

Perry is seated at a group activity in the classroom. His mother comes to the door and the teacher says, "Perry, go to your mother." Perry looks at his mother and then walks to his mother from across the room.

Part 3: Teaching or verifying that students can consecutively perform discrete actions which indicate attending to and selection of a representation of an object or person when both the referent and representation are within reach of the students, and when the students are given a single cue to perform both attending and selection.

The difference between Part 1 and Part 3 is essentially that in Part 1 the students are required to demonstrate attending to and selection of an object or person's face, whereas in Part 3, the students are required to demonstrate attending to and selection of a representation when the referent is also present.

Instructional Procedure

An object or person's face and its representation are both placed within reach of the students. The referent and representation are placed at the eye level at which the students demonstrated criterion performance in Phase II, Part 1 with the least difficulty. The teacher issues one cue which will require the students to demonstrate attending to the representation and to make a selection action toward the representation.

Step A: A representation is placed in the midline position and the referent is placed in the midline position.

Step B: A representation is placed in the midline position and the referent is placed 45° to the right of midline.

Step C: A representation is placed in the midline position and the referent is placed 45° to the left of midline.

Step D: A representation is placed in the midline position and the referent is placed in at least five different positions ranging between 45° to the right and left of midline.

Step E: A referent is placed in the midline position and the representation is placed 45° to the right of midline.

Step F: A referent is placed in the midline position and the representation is placed 45° to the left of midline.

Step G: A referent is placed in the midline position and the representation is placed in at least five different positions ranging between 45° to the right and left of midline.

Step H: The representation and referent are both placed in five different positions ranging between 45° to the right and left of midline.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of the Steps A through H within five seconds of teacher cue on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two verbal or non-verbal cues; and
e) with the object or person's face presented at three eye levels.

Example Activity: (Phase III, Part 3, Step B)

In an instructional dressing skills class, the teacher places a miniature shoe on the table directly in front of the student and the student's real shoes are to the right of the student's midline. The teacher says, "Show me the little shoes." Maria looks at the shoe representation and then picks it up and gives it to the teacher. The real shoes are then given to the student to put on.

Part 4: Teaching or verifying that students can consecutively perform discrete actions which indicate attending to and selection of a representation of an object or person when the representation is within reach of the students, and the referent is not within reach of the students, and when the students are given a single cue to perform both attending and selection.

The difference between Part 3 and Part 4 is essentially that in Part 3 the representation and referent are both within reach, whereas in Part 4 the representation is within reach and the referent is not within reach.

Instructional Procedure

An object or person is not within reach of the students, and the representation of the object or person is placed in reach of the students. The referent and representation are placed at the eye level at which the students demonstrated criterion performance in Phase II, Part 1 with the least difficulty. The teacher issues a single cue which will require the students to demonstrate attending to the representation and to make a selection action toward the representation.

Step A: Follow Steps A through H as in Part 3.

Criterion Performance

Same as described in Part 3.

Example Activity: (Phase III, Part 4, Step A)

Between classroom activities, the teacher presents a photograph of the aide at the student's midline; the aide is standing five feet away from the student in a midline position. The teacher says, "Diane (the aide) will work with you. Who will work with you?" The student looks at the photograph and then takes photo from the teacher. The aide takes the student to the play area.

PHASE IV: TEACHING SCANNING OF TWO OBJECTS OR PERSONS WHICH ARE PRESENTED CONCURRENTLY

Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons which are concurrently presented to the students.

Part 1: Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons when those objects or persons are concurrently presented and placed within reach of the students.

Instructional Procedure

Two different objects or persons are concurrently presented and placed within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the objects or persons.

Step A: Two objects or persons are placed in the midline position at eye level, and are in a horizontal array.

Step B: Two objects or persons are placed in at least three different positions ranging between 45^{o} to the right and left of the midline at eye level, and are in a horizontal array.

Step C: Two objects or persons are placed in the midline position in at least three different positions ranging between 45^{o} above and below eye level, and are in a horizontal array.

Step D: Two objects or persons are placed in at least five different positions ranging within 45^{o} to the right and left of the midline, and 45^{o} above and below eye level, and are in a horizontal array.

Step E: Two objects or persons are placed in midline position at eye level, and are in a vertical array.

Step F: Two objects or persons are placed in at least three different positions ranging between 45° to the right and left of midline at eye level, and are in a vertical array.

Step G: Two objects or persons are placed in the midline position in at least three different positions ranging between 45° above and below eye level, and are in a vertical array.

Step H: Two objects or persons are placed in at least five different positions ranging within 45° to the right and left of the midline, and 45° above and below eye level, and are in a vertical array.

Step I: Two objects or persons are placed in midline positions at eye level and in a diagonal array.

Step J: Two objects or persons are placed in at least three different positions ranging between 45° to the right and left of midline at eye level, and are in a diagonal array.

Step K: Two objects or persons are placed in the midline position in at least three different positions ranging between 45° above and below eye level, and are in a diagonal array.

Step L: Two objects or persons are placed in at least five different positions ranging within 45° to the right and left of the midline, and 45° above and below eye level, and are in a diagonal array.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of Steps A through L within five seconds of teacher cues on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different sets of objects;
c) in at least two instructional settings; and
d) in reaction to at least two verbal or non-verbal cues to perform.

Example Activity: (Phase IV, Part 1, Step E)

The student is seated with her coat on and waiting to go outside. The teacher presents the student's hat and mittens at eye level, arranged in a vertical array. The teacher says, "Ulla, look at the hat and mittens." The student looks at one object and then the other object. Ulla's hat and mittens are given to her to put on.

Part 2: Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons when those objects or persons are concurrently presented and are not within reach of the students.

The difference between Part 1 and Part 2 is essentially that in Part 1 the two objects or persons are placed within reach, whereas in Part 2 the two objects or persons are not within reach.

Instructional Procedure

Two different objects or persons are concurrently presented and are not within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the objects or persons.

Step A: Follow Steps A through L as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IV, Part 2, Step A)

The father holds up two toys from the toy box, one in each hand, standing three feet directly in front of the student. The father says, "Look, we can play with these!" The student looks at the toy on the left and then looks at the toy on the right. The father brings the toys closer to play with.

Part 3: Teaching or verifying that students can perform discrete actions which indicate scanning of two representations; one is a representation of an object or person, the other is a representation of nothing (a blank). The representations are concurrently presented within reach of the students.

The difference between Part 1 and Part 3 is essentially that in Part 1 objects or persons are presented, whereas in Part 3 two representations and one referent are presented.

Instructional Procedure

The two representations are concurrently presented and placed within the reach of the students. The referent is placed within reach of the students in positions ranging within 45° to the right and left of midline, and 45° above and below eye level. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the representations.

Step A: Two representations are placed in midline position at eye level and are in a horizontal array.

Step B: Two representations are placed in at least three different positions ranging between 45° to the right and left of the midline at eye level and are in a horizontal array.

Step C: Two representations are placed in a midline position in at least three different positions ranging between 45° above and below eye level, and are in a horizontal array.

Step D: Two representations are placed in at least five different positions ranging within 45° to the right and left of the midline, and 45° above and below eye level. and are in a horizontal array.

Step E: Two representations are placed in midline position at eye level, and are in a vertical array.

Step F: Two representations are placed in at least three different positions ranging between 45° to right and left of the midline at eye level, and are in a vertical array.

Step G: Two representations are placed in a midline position in at least three different positions ranging between 45° above and below eye level, and are in a vertical array.

Step H: Two representations are placed in at last five different positions ranging within 45° to the right and left of the midline and 45° above and below eye level, and are in a vertical array.

Step I: Two representations are placed in midline position at eye level and in a diagonal array.

Step J: Two representations are placed in at least three different positions ranging between 45° to the right and left of the midline at eye level, and are in a diagonal array.

Step K: Two representations are placed in a midline position in at least three different positions ranging between 45° above and below eye level, and are in a diagonal array.

Step L: Two representations are placed in at least five different positions ranging within 45° to the right and left of the midline and 45° above and below eye level, and are in a diagonal array.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of Steps A through L within five seconds of teacher cue on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two other persons;
b) using at least two different sets of objects;
c) in at least two instructional settings; and
d) in response to at least two verbal or non-verbal cues to perform.

Example Activity: (Phase IV, Part 3, Step K)

While seated at a table, a picture of a cup and a blank card of the same size are placed on the table in front of the student in a diagonal array. The cups are placed to the right of the student on the table. The aide is pouring juice from a pitcher into cups for the other students. The aide says, "Percy, look at each card. Look for a cup." Percy looks at the blank and then the picture of the cup. The aide helps Percy point to the cup picture and then pours juice for Percy.

Part 4: Teaching or verifying that students can perform discrete actions which indicate scanning of two representations; one is a representation of an object or person, the other is a representation of nothing (a blank). The representations are concurrently presented within reach of the students and the object or person referent is not within reach of the students.

The difference between Part 3 and Part 4 is essentially that in Part 3 the referent is within reach, whereas in Part 4 the referent is not within reach.

Instructional Procedure

The two representations are concurrently presented and placed within reach of the students. The referent is not within reach of the students in positions ranging within 45^{o} to the right and left of midline, and 45^{o} above and below eye level.

Step A: Follow Steps A through L as in Part 3.

Criterion Performance

Same as described in Part 3.

Example Activity: (Phase IV, Part 4, Step E)

The teacher stands next to a book shelf five feet directly in front of the student. The aide holds up a board at eye level with a picture of a book and a blank card on it in a vertical array. The teacher says, "Brian, show me the book and show me 'nothing'." Brian looks at and points to the representations individually. The teacher brings a book over from the shelf to the student.

Part 5: Teaching or verifying that students can perform discrete actions which indicate scanning of two representations of objects or persons. The representations are concurrently presented within reach of the students and their respective referents are also placed within reach of the students.

The difference between Part 3 and Part 5 is essentially that in Part 3 one representation is a blank and the other is of an object or person, whereas in Part 5 both representations are of objects or persons.

Instructional Procedure

The two representations are concurrently presented and placed within reach of the students. The respective referents are also placed within reach of the students and in positions ranging within 45° to the right and left of the midline, and 45° above and below eye level. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the representations.

Step A: Follow Steps A through L as in Part 3.

Criterion Performance

Same as described in Part 3.

Example Activity: (Phase IV, Part 5, Step A)

A puzzle and a toy radio are on the table within reach. Presented with two cards at eye level in a horizontal array, the student is told by the recess supervisor, "Here is a picture of a puzzle. Here is a picture of a radio. Show me the pictures." The student looks at and points to each picture. Both toys are pushed closer for the student to play with.

Part 6: Teaching or verifying that students can perform discrete actions which indicate scanning of two representations of objects or persons. The representations are concurrently presented within reach of the students and their respective referents are not within reach of the students.

The difference between Part 5 and Part 6 is essentially that in Part 5 the referents are within reach of the students, whereas in Part 6 the referents are not within reach of the students.

Instructional Procedure

The two representations are concurrently presented and placed within reach of the students. The respective referents are placed out of reach of the students and in positions ranging within 45° to the right and left of midline and 45° above and below eye level. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the representations.

Step A: Same as described in Part 3.

Example Activity: (Phase IV, Part 6, Step K)

The student is shown two pictures, one of the teacher (Jan) and one of a peer, presented in a diagonal arrangement above eye level. "Yuma, look at the pictures, Jan and Mike." The student visually scans both pictures and is taken to the teacher and Mike who are playing a game.

PHASE V: TEACHING SCANNING OF TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONCURRENTLY PRESENTED AND TWO CUES ARE GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons and selection of one of the objects or persons when the objects or persons are concurrently presented and the students are given two consecutive cues to perform scanning and selection.

Part 1: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two objects or persons which are concurrently presented within reach of the students and selection of one of the objects or persons when given two consecutive cues to perform scanning and selection.

Instructional Procedure

Two different objects or persons are concurrently presented and placed within reach of the students. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of both objects or persons and the second cue will require the students to make a selection action toward one of the objects or persons.

The objects or persons should be placed at the eye level and midline position at which the students have previously (Phase IV) demonstrated criterion performance with the least difficulty for Steps A, B, and C.

Step A: Two objects or persons are in a horizontal array.

Step B: Two objects or persons are in a vertical array.

Step C: Two objects or persons are in a diagonal array.

Step D: Two objects or persons are placed in at least five different positions ranging within 45° to the right and left of the midline and 45° above and below eye level and are in a horizontal array.

Step E: Two objects or persons are placed in at least five different positions ranging within 45° to the right and left of the midline and 45° above and below eye level and are in a vertical array.

Step F: Two objects or persons are placed in at least five different positions ranging within 45° to the right and left of the midline and 45° above and below eye level and are in a diagonal array.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of Steps A through F within three seconds of teacher cue on three consecutive occasions. In addition, the student should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different sets of objects or persons;
c) in at least two instructional settings; and
d) in reaction to at least two sets of consecutive verbal or non-verbal cues to perform; at least one of which allows self-selection by the student.

Example Activity: (Phase V, Part 1, Step A)

During a playtime the teacher presents a puzzle and a book in a horizontal array on the floor in front of the student. The teacher says, "Look, a puzzle and a book. Take the book." The student looks at each object individually and the student picks up the book and begins to look at it.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two objects or persons which are concurrently presented not within reach of the students and selection of one of the objects or persons when given two consecutive cues to perform scanning and selection.

The difference between Part 1 and Part 2 is essentially that in Part 1 the objects or persons are within reach, whereas in Part 2 the objects or persons are not within reach of the students.

Instructional Procedure

Two different objects or persons are concurrently presented and are not within reach of the students. The teacher issues one cue which requires the students to demonstrate scanning of both objects or persons and to make a selection action toward one of the objects or persons. The objects or persons should be placed at the eye level and midline position at which the students had previously demonstrated criterion performance with the least difficulty for Steps A, B, and C.

Step A: Follow Steps A through E as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase V, Part 2, Step A)

The recreation supervisor says to Louis, "Look at Dick and Martha. Pick one of your friends for a partner!" Louis looks at both his peers and goes over and takes Martha's hand.

Part 3: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one is a representation of an object or person, the other is a representation of nothing (a blank); and selection of one of the representations when given two consecutive cues to perform scanning and selection. The representations are concurrently presented within reach of the students and the object or person referent is also within reach of the students.

The difference between Part 1 and Part 3 is essentially that in Part 1 objects or persons are presented, whereas in Part 3 two representations and one referent are presented.

Instructional Procedure

The two representations are concurrently presented within reach of the students. The referent is placed within reach of the students and in positions ranging within 45° to the right and left of the midline and 45° above and below eye level. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of both representations and the second cue will require the students to make a selection action toward one of the representations.

The representations should be placed at the eye level and midline position at which the students have previously (Phase IV) demonstrated criterion performance with the least difficulty for Steps A, B, and C.

Step A: The representations are in a horizontal array.

Step B: The representations are in a vertical array.

Step C: The representations are in a diagonal array.

Step D: The representations are placed in at least five different positions ranging within 45° to the right and left of the midline and 45° above and below eye level, and are in a horizontal array.

Step E: The representations are placed in at least five different positions ranging within 45° to the right and left of the midline and 45° above and below eye level, and are in a vertical array.

Step F: Representations are placed in at least five different positions ranging within 45° to the right and left of the midline and 45° above and below eye level, and are in a diagonal array.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of Steps A through F within three seconds of teacher cue on three consecutive occasions. In addition, the student should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different sets of representations and referents;
c) in at least two instructional settings; and
d) in reaction to at least two sets of consecutive verbal or non-verbal cues to perform; at least one of which allows self-selection by the student.

Example Activity: (Phase V, Part 2, Step 3)

The teacher places a blank card and a photograph of the teacher intern concurrently in front of the student in a vertical array. The teacher intern is standing to the left of the student. The teacher says, "Look at the pictures, find Jackie." The student looks at each representation and then touches the photo of the teacher intern. The teacher intern takes the student out for a walk.

Part 4: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one is a representation of an object or person, the other is a representation of nothing (a blank); and selection of one of the representations when given two consecutive cues to perform scanning and selection. The representations are concurrently presented within reach of the students and the referent is not within reach of the students.

The difference between Part 3 and Part 4 is essentially that in Part 3 the referent is within reach, whereas in Part 4 the referent is not within reach of the students.

Instructional Procedure

The two representations are concurrently presented within reach of the students. The referent is not within reach of the students and in positions ranging within 45° to the right and left of midline and 45° above and below eye level. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of both representations and the second cue

will require the students to make a selection action toward one of the representations. The representations should be placed at the eye level and midline position at which the students have previously (Phase IV) demonstrated criterion performance with the least difficulty for Steps A, B, and C.

Step A: Follow Steps A through E as in Part 3.

Criterion Performance

Same as described in Part 3.

Example Activity: (Phase V, Part A, Step C)

The lunch room supervisor presents two cards flat on the table in a diagonal array. One is blank, the other one has a large 'EAT.' The student is asked, "Look at the cards. Do you want to eat or not?' The student looks at both cards and then points to the blank. The student is given nothing to eat and the cards are removed.

Part 5: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; both are of objects or persons; and selection of one of the representations when given two consecutive cues to perform scanning and selection. The representations are concurrently presented within reach of the students and the referents are also within reach of the students.

The difference between Part 3 and Part 5 is essentially that in Part 3 one representation is a blank and the other is of an object or person, whereas in Part 5 both representations are of objects or persons.

Instructional Procedure

The two representations are concurrently presented within reach of the students. The respective referents are also placed within reach in positions ranging within 45° to the right and left of midline and 45° above and below eye level. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of both representations and the second cue will require the students to make a selection action toward one of the representations. The representations should be placed at the eye level and midline position at which the students have previously (Phase IV) demonstrated criterion performance with the least difficulty for Steps A, B, and C.

Step A: Follow Steps A through E as in Part 3.

Criterion Performance

Same as described in Part 3.

Example Activity: (Phase V, Part 5, Step B)

The teacher places two pictures, a bike and a wagon, in a vertical array on a board and holds it up in front of the student. The teacher says, "Linda, let's go for a ride. Look, a bike and a wagon. What do you want to ride?" The student looks at each photo and the student picks up the wagon photo. The teacher puts the student in the wagon next to her and takes Linda for a ride.

Part 6: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; both are of objects or persons; and selection of one of the representations when given two consecutive cues to perform scanning and selection. The representations are concurrently presented within reach of the students and the referents are not within reach of the students.

The difference between Part 5 and Part 6 is essentially that in Part 5 the referents are within reach, whereas in Part 6 the referents are not within reach.

Instructional Procedure

The two representations are concurrently presented within reach of the students. The respective referents are not within reach in positions ranging within 45^{o} to the right and left of the midline and 45^{o} above and below eye level. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of both representations and the second cue will require the students to make a selection action toward one of the representations. The representations should be placed at the eye level and midline position at which the students have previously (Phase IV) demonstrated criterion performance with the least difficulty for Steps A, B, and C.

Step A: Follow Steps A through F as in Part 3.

Criterion Performance

Same as described in Part 3.

Example Activity: (Phase V, Part 6, Step A)

A picture of the I.M.C. and one of the gym are placed in a horizontal array in front of the student. The teacher says, "Bill, look at the gym picture, look at the I.M.C. picture. Where do you want to go for recess?" The student taps his finger on each picture, then rests his hand on gym picture, and is walked to the gym.

PHASE VI: TEACHING SCANNING OF TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONCURRENTLY PRESENTED AND ONE CUE IS GIVEN

Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons and selection of one of the objects or persons when the objects or persons are concurrently presented and the student is then given one cue to perform scanning and selection.

Part 1: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two objects or persons which are concurrently presented within and not within reach of the students and selection of one of the objects or persons when given one cue to perform scanning and selection.

Instructional Procedure

Two different objects or persons are concurrently presented and placed within reach or not within reach of the students. The teacher issues one cue which requires the students to demonstrate scanning of both objects or persons and to make a selection action toward one of the objects or persons. The objects or persons should be placed at the eye level and midline position at which the students have previously demonstrated criterion performance with the least difficulty for Steps A, B, and C.

Step A: Follow Steps A through F as in Phase V, Part 1.

Criterion Performance

Same as described in Phase V, Part 1.

Example Activity: (Phase VI, Part 1, Step A)

During a music class, the student is presented with a drum and a guitar in a vertical array. The music teacher says, "John, which instrument do you want?" John looks at each instrument and then points to the guitar. The music teacher helps John play the guitar.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one or both may be representations of objects or persons, one may be a blank representation; and selection of one of the representations when given one cue to perform scanning and selection. The representations are concurrently presented within reach of the students and the object or person referents are not within reach of the students.

The difference between Part 1 and Part 2 is essentially that in Part 1 objects or persons are presented, whereas in Part 2 two representations are presented.

Instructional Procedure

The two representations are concurrently presented within reach of the students. The referent or referents are not within reach and in positions ranging within 45° to the right and left of the midline and 45° above and below eye level. The teacher issues one cue which requires the students to demonstrate scanning of both representations and to make a selection action toward one of the representations. The representations should be placed at the eye level and midline positions at which the students have previously demonstrated criterion performance with the least difficulty for Steps A, B, and C.

Step A: Follow Steps A through F as in Phase V, Part 2.

Criterion Performance

Same as described in Phase V, Part 2.

Example Activity: (Phase VI, Part 2, Step A)

The father presents a picture of pants and a picture of a dress at eye level in a horizontal array to the student and says, "It's time to dress. Point to the picture of pants." The student looks at each and points to the picture of the pants. The pants are brought to the student from the closet and the student gets dressed.

PHASE VII: TEACHING SCANNING OF MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONCURRENTLY PRESENTED AND TWO CUES ARE GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of more than two objects or persons and selection of one of the objects or persons when the objects or persons are concurrently presented and the students are given two consecutive cues to perform scanning and selection.

Repeat the instructional sequence of Phase VI, utilizing two consecutive cues and using more than two objects, persons, or representations. Proceed in an easy to hard sequence by gradually increasing the number of objects, persons or representations to three, four, five, etc. In Part 2 one of the representations should always represent "nothing" (a blank).

As the number of objects, persons or representations increases, the items may need to be presented in combinations of horizontal, vertical, and/or diagonal arrays. These combinations may form rows, columns, and/or shapes. In these instances, the students need to be taught a scanning and selection strategy to cope with the combination of arrays. As stated in the scanning and selection introduction the most widely used strategy is from left to right and from top to bottom. It is recommended that this strategy be taught as the students are required to cope with the combination of arrays.

PHASE VIII: TEACHING SCANNING OF MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONCURRENTLY PRESENTED AND ONE CUE IS GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of more than two objects or persons and selection of one of the objects or persons when the objects or persons are concurrently presented and the students are given one cue to perform scanning and selection.

Repeat the instructional sequence as in Phase VII, with one cue rather than two consecutive cues given to the students to perform scanning and selection. As in Phase VII , combinations of arrays may need to be utilized as the number of items increases.

Introduction to Phases IX through XVII. Consecutive Presentations

The next Phases, IX through XVII, are a continuation of the scanning and selection sequence but involve a critical change in the presentation of the materials. In these phases the materials are consecutively presented, whereas in the previous phases the presentation of materials was concurrent. A consecutive presentation involves a presentation of an item for a specified length of time, followed by a defined interval, after which the second item is presented for a specific length of time. Both the length of presentation and length of the interval between presentations need to be adjusted by the teacher to best facilitate scanning and selection by the students.

In the sequence the presentation of items is initially repeated three or four times. The students are required to scan each item as it is presented and then make a selection action. In instances where students are not able to perform the actions of concern upon completion of the final presentation of items, the interval between and the length of the presentations needs to be adjusted until the students can perform the actions of concern at least during the final presentation of items. Gradually the number of times the items are presented is reduced to two, and finally to one presentation. During these presentations the length of the presentation and the interval between presentations may again need to be adjusted to facilitate the students performing the required actions within the number of repeated presentations.

PHASE IX: TEACHING SCANNING OF TWO OBJECTS OR PERSONS' FACES CONSECUTIVELY PRESENTED IN A DEFINED, REPEATING CYCLE

Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons' faces which are consecutively presented three or four times in a defined, repeating cycle within reach of the students.

Part I: Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons' faces. The objects or persons' faces are consecutively presented three or four times in a defined, repeating cycle within reach of the students.

Instructional Procedure

Two different objects or persons are consecutively presented in a defined sequence three or four times within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the objects or persons' faces. The objects are presented for a specified length of time and with an interval between presentations at which the students can perform the actions of concern with the least difficulty.

Step A: The objects or persons' faces are consecutively presented at the midline position and at eye level.

Step B: The objects or persons' faces are consecutively presented 45° to the right of midline and at eye level.

Step C: The objects or persons' faces are consecutively presented 45° to the left of midline and at eye level.

Step D: The objects or persons' faces are consecutively presented in at least five different positions ranging between 45° to the right and left of midline and at eye level.

Step E: The objects or persons' faces are consecutively presented at midline and 45° above eye level.

Step F: The objects or persons' faces are consecutively presented at midline and 45° below eye level.

Step G: The objects or persons' faces are consecutively presented in at least five different positions ranging within 45° to the right and left of midline, and 45° above and below eye level.

Criterion Performance

It is suggested that the students be taught to correctly perform the actions required in each of Steps A through G within three seconds of teacher cue and on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different sets of objects or persons' faces;
c) in at least two instructional settings; and
d) in reaction to at least two verbal or non-verbal cues to perform.

Example Activity: (Phase IX, Part 1, Step A)

Kenny is sitting on a chair in the kitchen. His mother brings over two opened packages of Kool-Aid and says, "Kenny, let's make Kool-Aid. This is the grape Kool-Aid!" She holds it near Kenny's nose for three seconds then puts it down. She presents the other package saying, "This is the cherry Kool-Aid!" After three seconds she puts the second package down and they prepare two pitchers of Kool-Aid.

Part 2: Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons' faces. The objects or persons' faces are consecutively presented three or four times in a defined, repeating cycle not within reach of the students.

The difference between Part 1 and Part 2 is essentially that in Part 1 the objects or persons' faces are within reach, whereas in Part 2 the objects or persons' faces are not within reach.

Instructional Procedure

Two different objects or persons' faces are consecutively presented in a defined sequence, three or four times and are not within reach of the students. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the objects or persons' faces. The objects are presented for a specified length of time and with an interval between presentations at which the students can perform the actions of concern with the least difficulty.

Step A: Follow Steps 1 through 3 as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IX, Part 2, Step B)

John and his peers are being instructed in table setting skills. The teacher requests Bill and Sue, John's peers, to get a cup and then tells John, "John, watch Sue and Bill get their cups." John watches first Sue, then Bill perform the task. Then John is given his turn.

Part 3: Teaching or verifying that students can perform discrete actions which indicate scanning of two representations; one is a representation of a specific object or person, the other is a representation of nothing (a blank). The representations are consecutively presented three or four times in a defined, repeating cycle within reach of the students. The object or person referent is presented both within and not within reach of the students.

The difference between Part 2 and Part 3 is essentially that in Part 2, two objects or persons are presented within reach of the students, whereas in Part 3 two representations are presented within reach.

Instructional Procedure

Two representations are consecutively presented in a defined sequence three or four times within reach of the students. The referent is placed both within and not within reach in positions ranging within 45° to the right and left of midline, and 45° above and below eye level. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the representations. The representations are presented for a specified length of time and with an interval between presentations at which the students can perform the actions of concern with the least difficulty.

Step A: Follow Steps A through G as in Part 1, using representations rather than objects or persons.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IX, Part 3, Step A)

The teacher presents a photograph of a nearby toy for four seconds and then a blank card for four seconds. Both are presented at the student's midline and eye level, as the teacher directs Eric to look at each. The sequence is repeated again and Eric looks at each photo again. As the toy photograph appears the third time the toy is pushed closer to Eric and "nothing" is given when the blank card appears the third time.

Part 4: Teaching or verifying that students can perform discrete actions which indicate scanning of two representations of objects or persons. The representations are consecutively presented three or four times in a defined, repeating cycle within reach of the students. The object or person referents are presented both within and not within reach of the students.

The difference between Part 3 and Part 4 is essentially that in Part 3 one object or person representation and one blank representation were presented whereas in Part 4 two object or person representations are presented.

Instructional Procedure

Two representations are consecutively presented in a defined sequence three or four times within reach. The referents are placed both within and not within reach in positions ranging

within 45° to the right and left of midline and 45° above and below eye level. The teacher issues an appropriate cue which requires the students to demonstrate scanning of both of the representations. The representations are presented for a specified length of time and with an interval between presentations at which the students can perform the actions of concern with the least difficulty.

Step A: Follow Steps A through G as in Part 1, using representations rather than objects or persons.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase IX, Part 4, Step B)

Nick is sitting on the living room couch and the television is to his right. His father walks to the set and says, 'Nick, let's look at the programs that are on. Two channels are shown to Nick, three consecutive times. Then Nick's father selects a program for them to watch together.

PHASE X: TEACHING SCANNING OF TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED AND TWO CUES ARE GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons prior to the selection of one. The objects or persons are consecutively presented three or four times in a defined, repeating cycle and the students are given two consecutive cues to perform scanning and selection.

Part 1: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two objects or persons' faces and selection of one of the objects or persons' faces when given two consecutive cues to perform scanning and selection. The objects or persons' faces are consecutively presented three or four times in a defined, repeating cycle within reach of the students.

Instructional Procedure

The objects or persons' faces are consecutively presented in a defined sequence three or four times within reach. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of the objects or persons' faces and the second cue will require the students to make a selection action toward one of the objects or persons' faces. The objects or persons' faces in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase IX, Part 4 with the least difficulty. In addition, the

objects are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the three or four presentations.

Step A: The objects or persons' faces are presented at the midline position.

Step B: The objects or persons' faces are presented to the right of midline.

Step C: The objects or persons' faces are presented to the left of midline.

Step D: The objects or persons' faces are presented at five different positions ranging within 45° to the right and left of midline, and 45° above and below eye level.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of Steps A through E within three seconds of teacher cue on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different objects;
c) in at least two instructional settings;
d) in reaction to at least two sets of consecutive verbal or non-verbal cues; at least one of which allows self-selection by the student; and
e) with the objects or persons' faces presented at three eye levels.

Example Activity: (Phase II, Part 1, Step A)

On a trip to the zoo snacks are being purchased from a rotating vending machine. On Sarah's turn the teacher pushes the button and says, 'Sarah, look at the apples and oranges then point to the one you want." Sarah watches as the fruits pass in front of a viewer window and on the fourth rotation touches the window which contains an apple. The teacher and Sarah then deposit a quarter and take out the apple.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two objects or persons' faces and selection of one of the objects or persons' faces when given two consecutive cues to perform scanning and selection. The objects or persons' faces are consecutively presented three or four times in a defined, repeating cycle not within reach of the students.

The difference between Part 1 and Part 2 is essentially that in Part 1 the objects or persons are within reach, whereas in Part 2 the objects or persons are not within reach.

Instructional Procedure

The objects or persons' faces are consecutively presented in a defined sequence three or four times and are not within reach. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of the objects or persons' faces and the second cue will require the students to make a selection action toward one of the objects or persons' faces. The objects or persons' faces, in Steps A through D are placed at the eye level at which the students demonstrated criterion performance in Phase IX, Part 4 with the least difficulty. In addition, the objects or persons' faces are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the three or four presentations.

Step A: Follow Steps A through D as in Part 1.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase X, Part 2, Step D)

The recess supervisor comes to the classroom door to take Bruce to a recess room. He holds up a record and a ball in varying positions above Bruce's eye level and says, "Bruce, here's a record. Here's a ball. Watch again and then show me the ball." Bruce watches as each is held up and then raises his arm and smiles when the ball appears for the third time.

Part 3: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one of which is a representation of nothing (a blank); and selection of one of the representations when given two consecutive cues to perform scanning and selection. The representations are consecutively presented three or four times within reach of the students and the referents are placed both within and not within reach.

The difference between Part 2 and Part 3 is essentially that in Part 2 objects or persons are presented within reach, whereas in Part 3 the representations are presented within reach and the referents are both within and not within reach.

Instructional Procedure

Two representations, one of which is a representation of nothing (a blank), are consecutively presented in a defined sequence three

or four times within reach. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of the representations and the second cue will require the students to make a selection action toward one of the representations. The referent is placed both within and not within reach in positions ranging within 45° to the right and left of midline, and 45° above and below eye level. The representations, in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase IX, Part 4 with the least difficulty. In addition, the representations are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the three or four presentations.

Step A: The representations are presented at the midline position.

Step B: The representations are presented 45° to the right of midline.

Step C: The representations are presented 45° to the left of midline.

Step D: The representations are presented at five different positions ranging between 45° to the right and left of midline.

Step E: The representations are presented at five different positions ranging within 45° to the right and left of midline, and 45° above and below eye level.

Criterion Performance

It is suggested that students should be taught to correctly perform the actions required in each of Steps A through E within three seconds of teacher cue on three consecutive occasions. In addition, the students should correctly perform the actions of concern:

a) in reaction to the cues of at least two persons;
b) using at least two different representations and one different referent;
c) in at least two instructional settings;
d) in reaction to at least two sets of consecutive verbal or non-verbal cues; at least one of which allows self-selection by the student; and
e) with the representations presented at three eye levels.

Example Activity: (Phase X, Part 3, Step B)

Before a hike the aide brings over a blank card and a coat picture on a rotating index card file and presents it to the left of Sean's midline on his lap tray. The aide says, "Sean, you need your coat for the hike. Look at the cards and show me the coat card." Sean turns the knob which rotates the cards.

Sean rotates the cards a second time then turns to the coat card. The aide then takes Sean to the hallway coat rack and Sean gets his coat on.

Part 4: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations of objects or persons and selection of one of the representations when given two consecutive cues to perform scanning and selection. The representations are consecutively presented three or four times within reach of the students and the referents are placed both within and not within reach of the students.

The difference between Part 3 and Part 4 is essentially that in Part 3 an object or person representation and a blank card are presented, whereas in Part 4 both the representations presented are object or person representations.

Instructional Procedure

The representations are consecutively presented in a defined sequence three or four times within reach. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of the representations and the second cue will require the students to make a selection action toward one of the representations. The referents are placed both within and not within reach in positions ranging within 45° to the right and left of midline, and 45° above and below eye level. The representations, in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase IX, Part 4 with the least difficulty. In addition, the representations are presented for a specified length of time and with an interval between presentations at which the students most easliy perform scanning and selection within the three or four presentations.

Step A: Follow Steps A through E as in Part 3.

Criterion Performance

Same as described in Part 2.

Example Activity: (Phase X, Part 4, Step A)

Beth is seated on a chair in the family den with the record player on the floor to her right. Her brother consecutively presents two record covers at her midline on her lap. He presents a Sesame Street record cover and then a marching band cover, saying, "Beth, look at these and put your hand on the one you want to hear." The record covers are shown twice and on the third presentation of the Sesame Street cover Beth places her hand on it. The record is then played.

Part 5: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one or both may be representations of objects or persons, one may be a blank representation; and selection of one of the representations when given two consecutive cues to perform scanning and selection. The representations are consecutively presented three or four times in a defined, repeating cycle within reach of the students and the referents are placed both within and not within reach of the students.

The difference between Part 4 and Part 5 is essentially that in Part 4 two representations of objects or persons are presented, whereas in Part 5 two representations are presented, one of which may be a blank card.

Instructional Procedure

The two representations are consecutively presented in a defined sequence three or four times within reach. The teacher issues two consecutive cues; the first cue will require the students to demonstrate scanning of the representations and the second cue will require the students to make a selection action toward one of the representations. The referents are placed both within and not within reach in positions ranging within 45° to the right and left of midline and 45° above and below eye level. The representations, in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase IX, Part 4 with the least difficulty. In addition, the representations are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the three or four presentations.

Step A: Follow Steps A through E as in Part 3.

Criterion Performance

Same as described in Part 3.

Example Activity: (Phase X, Part 5, Step B)

Pietro and Tom are playing a board game with their teacher. It's Pietro's turn to spin the pointer either to candy canes (and move one space forward) or to the blank space (and move one space backward). Pietro spins the pointer and tracks it until it lands on the blank space. His token is moved back one space and Tom takes his turn.

PHASE XI: TEACHING SCANNING OF TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED AND ONE CUE IS GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons prior to the selection of one when the objects or persons are consecutively presented three or four times and the students are given one cue to perform scanning and selection.

Part 1: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two objects or persons' faces and selection of one of the objects or persons' faces when given one cue to perform scanning and selection. The objects or persons' faces are consecutively presented three or four times in a defined, repeating cycle within reach of the students.

Instructional Procedure

Two different objects or persons' faces are consecutively presented in a defined sequence three or four times within reach. The teacher issues one cue which requires the students to demonstrate scanning of each object or persons' face and to make a selection motion toward one of the objects or persons. The objects or persons' faces in Steps 1 through 5 are placed at the eye level at which the students demonstrated criterion performance in Phase X, Part 5 with the least difficulty. In addition, the objects or persons are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the three or four presentations.

Step 1: Follow Steps 1 through 5 as in Phase X, Part 1.

Criterion Performance

Same as described in Phase X, Part 1.

Example Activity: (Phase XI, Part 1, Step A)

Anne is seated at a chair in the school kitchen. Ingredients for chocolate milk (milk and chocolate to mix) are placed on an electrical lazy susan to Anne's right. The teacher turns on the lazy susan and says, "Anne, push the button when the milk is in front of you." Anne watches the objects pass by three times then stops the lazy susan when the milk is closest to her. The teacher and Anne pour the milk and prepare to mix in the chocolate.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two objects or persons' faces and selection of one of the objects or persons' faces when given one cue to perform scanning and selection. The objects or persons' faces are consecutively presented three or four times in a defined, repeating cycle not within reach of the students.

The difference between Part 1 and Part 2 is essentially that in Part 1 the objects or persons are presented within reach of the students, whereas in Part 2 the objects or persons are not within reach of the students.

Instructional Procedure

Two different objects or persons' faces are consecutively presented in a defined sequence three or four times not within reach. The teacher issues one cue which requires the students to demonstrate scanning of each object and to make a selection action toward one of the objects or persons. The objects or persons' faces, in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase X, Part 5 with the least difficulty. In addition, the objects or persons are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the three or four presentations.

Step A: Follow Steps A through E as in Phase X, Part 1.

Criterion Performance

Same as described in Phase X, Part 1

Example Activity: (Phase XI, Part 2, Step F)

Cindy is helping her mother prepare dessert. A bowl of chocolate frosting is presented to her, then a bowl of vanilla frosting. Her mother asks, 'Cindy, which one do you want to spread on the cupcakes?" Cindy watches (and tastes each one) as her mother consecutively presents them again. On the third presentation Cindy points to the chocolate frosting, which she is given and helped to spread on the cupcakes.

Part 3: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one or both may be representations of objects or persons, one may be a blank representation; and selection of one of the representations when given one cue to perform scanning and selection. The representations are consecutively presented three or four times in a defined, repeating cycle within reach of the students, and the referents are placed both within and not within reach of the students.

The difference between Part 2 and Part 3 is essentially that in Part 2 two objects or persons are presented, whereas in Part 3 two representations are presented.

Instructional Procedure

The representations are consecutively presented in a defined sequence three or four times within reach. The teacher issues

one cue which requires the students to demonstrate scanning of each object and to make a selection action toward one of the representations. The referents are placed both within and not within reach in positions ranging within 45^{o} to the right and left of midline, and 45^{o} above and below eye level. The representations, in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase X, Part 5 with the least difficulty. In addition, the representations are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the three or four presentations.

Step A: Follow Steps A through E as in Phase X, Part 3.

Criterion Performance

Same as described in Phase XI, Part 3.

Example Activity: (Phase XI, Part 3, Step A)

During recess an older student presents Benjie with a view master containing two pictures. The older student says, "Benjie, pick a game for us to play!" Benjie pushes the button and looks at each picture. After the frames are seen three times, Benjie stops at a picture of a ball. The older student gets a ball. He and Benjie play toss and catch.

PHASE XII: TEACHING SCANNING OF MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED AND ONE CUE IS GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of more than two objects or persons prior to the selection of one when the objects are consecutively presented three or four times and the students are given one cue to perform scanning and selection.

Repeat the instructional sequence of Phase XI using more than two objects, persons, or representations. Proceed in an easy to hard sequence by gradually increasing the number of objects, persons or representations to three, four, five, etc. In Part 3 one of the representations should always represent "nothing" (a blank).

PHASE XIII: TEACHING SCANNING OF TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED AND TWO CUES ARE GIVEN TO PERFORM

...ifying that students can perform discrete actions which ... of two objects or persons prior to the selection of ... or persons are consecutively presented twice in ... sentence and the students are given two consecutive ... scanning and selection.

... or verifying that students can consecutively ... actions which indicate scanning of two objects ... are given two consecutive cues to perform ... selection. The objects or persons' faces are con- ... in a defined, repeated sequence, twice, ... within reach of the students.

... Procedure

... persons' faces are consecutively presented in a ... within or not within reach. The ... two consecutive cues; the first cue will require ... demonstrate scanning of the objects or persons' ... second cue will require the students to make a ... tion toward one of the objects or persons' faces. ... persons' faces, in Steps _ through 2, are placed ... level at which the students demonstrated criterion ... in those with the least difficulty. In addi- ... objects or persons are presented for a specified ... with an interval between presentations at ... students easily perform scanning and selection ... two presentations.

... The objects or persons' faces are presented at the ... positions.

... The objects or persons' faces are presented 45° to ... of midline.

... The objects or persons' faces are presented 45° to ... of midline.

... The objects or persons' faces are presented at five ... positions ranging between 45° to the right and ... midline.

... Performance

... suggested that the students should be taught to correctly ... the actions required in each of Steps _ through E with- ... seconds of teacher cue on three consecutive occasions. ... in, the students should correctly perform the actions ...

... reaction to the cues of at least two persons;
... in, at least two different objects;

c) in at least two instructional settings;
d) in reaction to at least two sets of consecutive verbal or non-verbal cues; at least one of which allows self-selection by the student; and
e) with the objects or persons' faces presented at three eye levels.

Example Activity: (Phase XIII, Part 1, Step D)

The physical education instructor consecutively presents a ball and a scooter board in positions to the left and right of Marcy and says, "Marcy, look at the equipment and show me which one you want." Marcy watches as each is presented and nods when the ball is presented the second time. The ball is tossed to Marcy and she and her peers take turns playing catch.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one or both may be representations of objects or persons, one may be a blank representation; and selection of one of the representations when given two consecutive cues to perform scanning and selection. The representations are consecutively presented in a defined, repeated sequence twice, within reach of the students and the referents are placed both within and not within reach of the students.

The difference between Part 1 and Part 2 is essentially that in Part 1 objects or persons' faces are presented whereas in Part 2 representations are presented.

Instructional Procedure

The two representations are consecutively presented in a defined sequence two times within reach. The teacher issues two consecutive cues; the first cue will require the students to make a selection action toward one of the representations. The referents are placed both within and not within reach in positions ranging within 45° to the right and left of midline and 45° above and below eye level. The representations, in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase XII with the least difficulty. In addition, the representations are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the two presentations.

Step A: Follow Steps A through E as in Part 1, using representations in place of objects or persons.

Criterion Performance

Same as described in Part 1.

Example Activity: (Phase XIII, Part 2, Step E)

A film loop viewer is put on a table to the left of Leah, who is seated at the table. The librarian says, "Leah, turn the knob and look at each of your two friends, then turn to the one you want to work with." Leah turns to each frame, starts over and stops at the first frame, showing Janet. Leah then joins Janet in a group task.

PHASE XIV: TEACHING SCANNING OF TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED AND ONE CUE IS GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons prior to the selection of one when the objects or persons are consecutively presented twice in a defined, repeated cycle and the students are given one cue to perform scanning and selection.

Part 1: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning and selection of two objects or persons' faces when given one cue to perform both scanning and selection. The objects or persons' faces are consecutively presented in a defined, repeated sequence twice, within and not within reach of the students.

Instructional Procedure

The objects or persons' faces are consecutively presented in a defined sequence two times within and not within reach. The teacher issues one cue which requires the students to demonstrate scanning of each object or person and to make a selection action toward one of the objects or persons. The objects or persons' faces, in Steps A through E, are placed at the eye level at which the students demonstrated criterion performance in Phase XIII, Part 1 with the least difficulty. In addition, the objects or persons are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the two presentations.

Step A: Follow Steps A through E as in Phase XIII, Part 1.

Criterion Performance

Same as described in Phase XIII, Part 1.

Example Activity: (Phase XIV, Part 1, Step A)

The aide consecutively presents Claire with her swimsuit and

a towel. "Claire, here are your swim things. Get dressed for swimming." Claire looks as each is presented to her right side, then selects her swimsuit as it is next presented and gets dressed.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one or both may be representations of objects or persons, one may be a blank representation; and selection of one of the representations when given one cue to perform both scanning and selection. The representations are consecutively presented in a defined, repeated sequence twice, within reach of the students and the referents are placed both within and not within reach of the students.

The difference between Part 1 and Part 2 is essentially that in Part 1 objects or persons' faces are presented, whereas in Part 2 representations are presented.

Instructional Procedure

The representations are consecutively presented in a defined, sequence two times within reach. The teacher issues one cue which requires the students to demonstrate scanning of each object and to make a selection action toward one of the representations. The referents are placed both within and not within reach in positions ranging within 45° to the right and left of midline, and 45° above and below eye level. The representations, in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase XIII, Part 1 with the least difficulty. In addition, the representations are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the two representations.

Step A: Follow Steps A through E as in Phase XIII, Part 1, using representations in place of objects or persons.

Criterion Performance

Same as described in Phase XIII, Part 1.

Example Activity: (Phase XIV, Part 2, Step A)

At snack time the occupational therapist presents a book with two pages; one showing a drink, the other a cookie; to the right of Jamie's midline and on the table. The therapist turns the pages, saying, 'Jamie, choose what you want.' The pages are turned over again and the student points to the cookie picture.

PHASE XV: TEACHING SCANNING OF MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED AND ONE CUE IS GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of more than two objects or persons prior to the selection of one when the objects or persons are consecutively presented twice in a defined, repeated cycle and the students are given one cue to perform scanning and selection.

Repeat the instructional sequence of Phase XIV using more than two objects, persons or representations. Proceed in an easy to hard sequence by gradually increasing the number of objects, persons or representations to three, four, five, etc. In Part 2, one of the representations should always represent "nothing" (a blank).

PHASE XVI: TEACHING SCANNING OF TWO OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED AND ONE CUE IS GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of two objects or persons prior to the selection of one when the objects or persons are consecutively presented twice in a defined, repeated cycle and the students are given one cue to perform scanning and selection.

Part 1: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning and selection of two objects or persons' faces when given one cue to perform scanning and selection. The objects or persons' faces are consecutively presented once, in a defined sequence both within and not within reach of the students.

Instructional Procedure

Two different objects or persons' faces are consecutively presented once in a defined sequence both within and not within reach. The teacher issues one cue which requires the students to demonstrate scanning of each object or person and to make a selection action toward one of the objects or persons. The objects or persons, in Steps A through D, are placed at the eye level at which the students demonstrated criterion performance in Phase XV with the least difficulty. In addition, the objects are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the one presentation.

Step A: Follow Steps A through E as in Phase XIV, Part 1.

Criterion Performance

Same as described in Phase XIV, Part 1.

Example Activity: (Phase XVI, Part 1, Step E)

The mother and her child are waiting for the school bus to arrive in the morning. The mother tells the child, "Watch for your bus." A car and a bus approach the house on the same side of the street, and the child walks toward the street when the bus stops in front of the house.

Part 2: Teaching or verifying that students can consecutively perform discrete actions which indicate scanning of two representations; one or both may be representations of objects or persons, one may be a blank representation; and selection of one of the representations when given one cue to perform both scanning and selection. The representations are consecutively presented once, in a defined sequence within reach of the students and the referents are placed both within and not within reach of the students.

The difference between Part 1 and Part 2 is essentially that in Part 1 objects or persons are presented whereas in Part 2 representations are presented.

Instructional Procedure

The representations are consecutively presented in a defined sequence once within reach. The teacher issues one cue which requires the students to demonstrate scanning of each object and to make a selection action toward one of the representations. The referents are placed both within and not within reach in positions ranging within 45° to the right and left of midline, and 45° above and below eye level. The representations, in Steps 1 through D, are placed at the eye level at which the students demonstrated criterion performance in Phase XV with the least difficulty. In addition, the objects are presented for a specified length of time and with an interval between presentations at which the students most easily perform scanning and selection within the one presentation.

Step 1. Follow Steps 1 through E as in Phase XIV, Part 1, using representations in place of objects or persons.

Criterion Performance

Same as described in Phase XIV, Part 1.

Example Activity: (Phase XVI, Part 2, Step A)

The student is seated in front of a screen on which two slides

are consecutively presented. One slide is of the school swimming pool and one is of the slide on the playground. The student is asked to select the next activity. The swimming pool slide is the first to appear on the screen and the student does not press the button to advance the slides, thus indicating a preference to go swimming.

PHASE XVII: TEACHING SCANNING OF MORE THAN TWO OBJECTS OR PERSONS PRIOR TO THE SELECTION OF ONE OF THE OBJECTS OR PERSONS WHEN THE OBJECTS OR PERSONS ARE CONSECUTIVELY PRESENTED AND ONE CUE IS GIVEN TO PERFORM

Teaching or verifying that students can perform discrete actions which indicate scanning of more than two objects or persons prior to the selection of one when the objects or persons are consecutively presented once, and the students are given one cue to perform scanning and selection.

Repeat the instructional sequence of Phase XVI using more than two objects, persons, or representations. Proceed in an easy to hard sequence by gradually increasing the number of objects or persons, or representations to three, four, five, etc. In Part 2 one of the representations should always represent 'nothing' (a blank).

SECTION VI: SUGGESTED ACTIVITIES, TOYS, AND GAMES THAT CAN BE USED TO TEACH TRACKING, SCANNING AND SELECTION SKILLS

The following list has been formulated to provide additional activities to those listed in the instructional sequences. Often, a particular activitiy toy or game may be used to develop both tracking and scanning; the teacher must adapt activity requirements to meet the needs of particular students. It is hoped that this list serves as a catalyst to teachers for developing additional activities and that teachers will extend the list provided here.

A. TRACKING ACTIVITIES AND GAMES

ACTIVITY: Making Popcorn

MATERIALS: Popcorn, oil, salt, butter (optional), electric popcorn popper with transparent lid, measuring cups, bowl.

OBJECTIVE: The students will perform discrete actions which follow the paths of the oil, the popcorn kernels, and the popcorn as it pops.

PROCEDURE: The students may be seated at a table with a popcorn popper in the center of the table. Pour the oil and then the popcorn kernels into the popper; direct the student to watch the paths of these items as they are poured. As the popcorn pops, have the students watch the repetitious paths of the popping kernels.

ACTIVITY: Pouring Liquids

MATERIALS: Liquids; milk, water, Kool-Aid, soda.
Containers; pitchers, bottles, cans, glasses, cups, bowls.

OBJECTIVE: The students will perform discrete actions which follow the liquids as they are poured.

PROCEDURE: At appropriate times, meals or snack times, direct the students to watch as liquids are poured from one container to another. Have the students take active participation by letting them help pour the liquids.

ACTIVITY: Flying a kite

MATERIALS: Kite, string

OBJECTIVE: The students will perform discrete actions which follow the movements of the kite.

PROCEDURE: The students should be directed to watch the kite as it is flown. The students should also have an opportunity to fly the kite.

ACTIVITY: Paper airplanes

MATERIALS: Colored construction paper

OBJECTIVE: The students will perform discrete actions which follow the flight of the airplane.

PROCEDURE: During an art class have students fold paper to make airplanes. The teacher or students can toss the airplanes into flight and the required skill is to track the plane until it comes to rest on the floor.

ACTIVITY: Water play

MATERIALS: Water table or tubs, cups, perforated spoons, floating toys, pots, food coloring, funnels.

OBJECTIVE: The students will perform discrete actions which follow the objects as they are dropped into the water or the water as it is poured into the tubs.

PROCEDURE: The teacher and students can interact with the materials in a variety of ways; pour water into the tub, let water drain through perforated spoons or funnels, drop food coloring into water, float boats in the water, or pour water from one pan to another.

ACTIVITY: Bathtime

MATERIALS: Bath water, bubble bath, floating toys, towel, soap.

OBJECTIVE: The students will perform discrete actions which follow the moving objects or water.

PROCEDURE: During bathtime a family member can direct the student to track the flow of the water as the tub is filled. Once the student is in the bathtub, attention should be given to the movement of floating toys or soap. The student may also be asked to track the washcloth as it is moved along legs and arms.

ACTIVITY: Shooting marbles

MATERIALS: Marbles, containers

OBJECTIVE: The students will perform discrete actions which follow the marbles and attend to the containers when the marbles are hidden in the containers.

PROCEDURE: Drop the marbles vertically into the containers or shoot marbles across a horizontal plane into the containers. Direct students to track marbles in motion and to locate hidden marbles. The students should be allowed to play with the marbles.

ACTIVITY: Attending a dance

MATERIALS: People dancing

OBJECTIVE: The students will perform discrete actions which follow the people as they are dancing.

PROCEDURE: Direct the student's attention to a particular dancing couple, have the student track their movements on the dance floor.

ACTIVITY: Flashlight play

MATERIALS: Flashlight, darkened room

OBJECTIVE: The students will perform discrete actions which follow the movement of the light.

PROCEDURE: Have the students seated and gradually darken the room by pulling the shades and reducing the artificial lighting. Several activities can be utilized; move the light on the wall or ceiling, flash the light on specific objects in the room, flash the light on the floor and when it stops have the students step on the lit area. The students should also have opportunities to move the flashlight for their peers to watch. *This activity can also be adapted by using a slide projector and slides of colorful objects or familiar people. The projected slides should be moved in different paths on the wall or screen.

ACTIVITY: Blowing soap bubbles

MATERIALS: Bubble solution, bubble blowers or pipes

OBJECTIVE: The students will perform discrete actions which follow the random motions of the bubbles.

PROCEDURE: The teacher should blow individual bubbles and direct the students to follow the floating bubbles. As an additional activity the students should be asked to attend to the location where the bubble disappears.

ACTIVITY: Feeding ducks, birds, or fish

MATERIALS: Bread, crackers, fish food

OBJECTIVE: The students will perform discrete actions which follow the food when thrown and the animals while they are moving.

PROCEDURE: Toss food into a duck pond and direct the students to watch the food as it is thrown and also track the ducks as they swim to the food. Similar procedures would be used to feed birds on the lawn or fish in a tank.

ACTIVITY: Cooking activities

MATERIALS: Cooking ingredients, measuring spoons, bowls, measuring cups.

OBJECTIVE: The students will perform discrete actions which follow the ingredients as they are mixed together.

PROCEDURE: While baking a cake, making jello, or a similar cooking project have the students assist in the preparation. The students can pour liquids and solids into the mixing bowl, stir the batter, and pour the finished product into another container. Direct the students to track the liquids and solids as they are poured and track the stirring spoon. *The activity can be adapted for art activities such as, preparing play dough, cornstarch batter, or Silly Putty.

ACTIVITY: Watering the lawn, gardens or houseplants.

MATERIALS: Garden hose, watering can, lawn sprinkler.

OBJECTIVE: The students should perform discrete actions which follow the paths of the water.

PROCEDURE: Direct the students to track the water as it is sprayed on the lawn or garden with a hose. The hose may be directed at a drive-way and have the student track the water as it streams down the driveway. Inside the house, students may be requested to follow the water as it is poured out of a watering can.

ACTIVITY: Painting; finger painting or brush painting

MATERIALS: Paints, construction paper, paintbrushes

OBJECTIVE: The students should perform discrete actions which track the movements of the brushes, hands and paints.

PROCEDURE: During a finger painting activity, students should be asked to track finger and hand movements in the paint and locate paths which they created. During a brush painting activity, students should track the brush and the paint as it is applied. Varied paths should be used; horizontal, vertical, diagonal and circular.

ACTIVITY: Pinball machines, ping pong games, tennis, badminton, billiards

MATERIALS: Appropriate equipment for above games

OBJECTIVE: The students will perform discrete actions which follow the balls used in the games.

PROCEDURE: The students should be seated around the game area and directed to follow the path of the ball as others play the games. The students should also receive opportunities to play the games themselves.

ACTIVITY: Raking leaves, mowing lawn, vacuuming, sweeping

MATERIALS: Rakes, lawn mower, vacuum cleaner, brooms, mops

OBJECTIVE: The students will perform discrete actions which follow the paths of the tools.

PROCEDURE: The tools should be used in a very discrete manner; make definite diagonal or horizontal motions with the tools. Direct the students to watch the rake as it moves across the grass, watch the person pushing the lawn mower, watch the vacuum as it moves across the carpet, or watch the mop as the floor is swept.

ACTIVITY: Playground activities

MATERIALS: Slides, teeter-totter, bikes, trampolines, swings, balls.

OBJECTIVE: The students will perform discrete actions which follow the persons using the playground equipment or the movement of the equipment.

PROCEDURE: Allow the students to interact with the playground equipment, then direct the students to track the various movements: persons moving down a slide, persons moving up and down on a teeter-totter, moving bikes, persons jumping on a trampoline, persons swinging, bouncing or rolling balls.

ACTIVITY: Amusement park rides

MATERIALS: Rides available at a carnival, fair or amusement park.

OBJECTIVE: The students will perform discrete actions which track the movements of persons on rides or the movement of the rides themselves.

PROCEDURE: Direct the students to the various movements of a ride, and pinpoint a particular person or portion of the ride to track. Such rides may be; a horse on a merry-go-round, a car of a roller coaster, boat on a track, bumper cars, seat on a ferris wheel and others. Of course, students should get a chance to have a ride, too.

ACTIVITY: Making eatable jewelry.

MATERIALS: Licorice strings, Cheerios, Life savers.

OBJECTIVE: The students will perform discrete actions which track the Cheerios and Life savers as they are strung on the licorice.

PROCEDURE: The teacher presents a necklace or bracelet made of licorice, Cheerios and Life savers. The students are directed to watch the teachers as another necklace is made. The students should track the Cheerios and Life savers as they are strung on the licorice. The students can then make their own jewelry.

ACTIVITY: Checking out of a grocery store

MATERIALS: Groceries, check out lane

OBJECTIVE: The students will perform discrete actions which follow the grocery items as they move along the conveyor belt.

PROCEDURE: The grocery items are placed on the conveyor belt and the students are directed to watch a particular item as it moves along the conveyor belt.

B. SCANNING AND SELECTION ACTIVITIES AND GAMES

ACTIVITY: Dressing

MATERIALS: Clothing

OBJECTIVE: The students will perform discrete actions which scan the items of clothing and select the needed clothing items.

PROCEDURE: The clothes are laid out on a bed, or are hanging in closets, or in drawers. The number of clothing items and their arrangement depends on the skill level of the student. The teacher would cue the students to "Find your shirt" or "Get dressed."

ACTIVITY: Body part identification

MATERIALS: Picture of a body, person, a doll, or individual pictures of body parts.

OBJECTIVE: The students will perform discrete actions which scan the body and select the appropriate body part.

PROCEDURE: Several procedures may be used, two of which are: 1) Direct the students to locate a specific body part on a body or partial body representation; "Look at the whole body. Show me head." 2) The students can be required to locate the body part which is appropriate for a clothing article; "Here is a mitten, where does it go?"

ACTIVITY: Eating

MATERIALS: Eating utensils, food served family style

OBJECTIVE: The students will perform discrete actions which scan the utensils available and select the appropriate utensil or will scan the food items and select a desired or designated food item.

PROCEDURE: At a mealtime, milk can be poured for several of the students and a particular student can be told, "Look for you cup." The student must scan all utensils and select the cup, then would receive milk. Another activity may be to ask the students, "What do you want to eat?" The students are directed to scan the food choices and select a preferred item.

ACTIVITY: Recess or free playtime

MATERIALS: Variety of toys, playmates, ongoing activities

OBJECTIVE: The students will perform discrete actions which scan the play options and select an activity to engage in.

PROCEDURE: The students should be presented with a variety of play activities or toys; hopscotch, bike riding, jump rope, records, etc., and directed to, "Find something to do." The students may also be presented with choices of playmates as in picking teams. "Who do you want on your team, Shing, Barb, or Perry?"

ACTIVITY: Clean-up after an activity

MATERIALS: Items used in a previous activity

OBJECTIVE: The students will perform discrete actions which scan the room and select items to be put away.

PROCEDURE: The students are told that it is time to clean-up after an activity, and to find items which need to be picked up. "Find all the balls and put them away" or "Pick up all the dirty dishes" may be two such situations.

ACTIVITY: Watering Houseplants

MATERIALS: Plants, watering can, water

OBJECTIVE: The students will perform discrete actions which scan the room to locate plants and scan the plants for dirt to water.

PROCEDURE: The student is given a water can and told to look around the room and find the plants to water. When the plants are found, the student is directed to find the dirt and water the plant.

ACTIVITY: Preparing a food dish

MATERIALS: Ingredients for food dish

OBJECTIVE: The students will perform discrete actions which scan the available ingredients and select each ingredient in proper order.

PROCEDURE: The ingredients are assembled in various arrays on a counter or table. The students are directed to find individual ingredients in order of use; "Look at all the food, find the flour."

ACTIVITY: Cleaning

MATERIALS: Dirty table or floor, cleaning solution, cloths, mops, sponges.

OBJECTIVE: The students will perform discrete actions which scan an area and select an area which needs to be cleaned.

PROCEDURE: A dirty area is mopped or wiped clean and students are asked to locate any dirt left on the surface. The students must scan the surface and point out any dirt.

ACTIVITY: Table setting

MATERIALS: Table, chairs, dishes, utensils

OBJECTIVE: The students will perform discrete actions which scan the eating area and locate missing utensils, dishes or chairs.

PROCEDURE: The table can be partially set for use. The teacher directs the students to find a place setting which is missing a chair. The student must scan the area and select the place which does not have a chair by it. Another strategy would be to have students locate missing utensils in the table setting.

ACTIVITY: Putting objects into containers

MATERIALS: Blocks, buttons, small balls, pegs, egg cartons, peg boards

OBJECTIVE: The students will perform and select an empty space to be filled.

PROCEDURE: The students are presented with a container with holes or a slot. The students are given an item (block, button, peg) and told to scan and find a hole to put it in. The task can be made easier or harder depending on the number of items initially placed in the containers.

ACTIVITY: Sorting or matching

MATERIALS: Two sets of objects or pictures

OBJECTIVE: The students will perform discrete actions which scan the arrays of objects or pictures and select a pair which are identical.

PROCEDURE: One set of objects is placed in front of the student; ball, toy car, balloon and toy truck. The teacher holds up an item which is identical to one of the four objects in the set and says, "Find the one that is the same." The student must scan the options and make a proper selection.

ACTIVITY: Tic-tac-toe

MATERIALS: Paper, ten chips; five blue, five white

OBJECTIVE: The students will perform discrete actions which scan the nine squares of the playing board and select an empty square to place the chip on.

PROCEDURE: A grid is drawn on the paper; two horizontal and two vertical lines to form nine squares: #. Two players take turns placing three chips in a row; vertically, horizontally, or diagonally. The students should be directed to scan the array and locate empty squares.

ACTIVITY: Purchasing items from a vending machine

MATERIALS: Vending machine, proper amount of money

OBJECTIVE: The students will perform discrete actions which scan the available choices and make a selection.

PROCEDURE: The students are directed to scan the available choices, select an item, place the money in the proper slot, and pull the knob for their selection. Vending machines offer a variety of situations; horizontal, vertical and repeated continuous arrays. Also the items themselves may be scanned or pictorial representations may be displayed for scanning.

ACTIVITY: Farmer-in-the Dell

MATERIALS: Eight or more persons to participate

OBJECTIVE: The students will perform discrete actions which scan the persons in the circle and selects one to join the center of the circle.

PROCEDURE: One student is in the center of a circle and plays the Farmer. The students in the circle walk around the Farmer, who picks another student to join him as the wife. Each new person in the center of the circle, selects another person to join him; a child, nurse, dog, cat, rat and cheese are all picked. *Similar games can be used for scanning and selection; "Little Sally Saucer."

ACTIVITY: Hopscotch

MATERIALS: Chalk, puck (stone, stick, etc.)

OBJECTIVE: The students will perform discrete actions which scan eight squares to select the square in which the puck landed.

PROCEDURE: A diagram is drawn on the floor with the chalk as follows:

1	2
3	4
5	6
7	8

The student throws the puck onto the playing array. The student must scan and select the square on which the puck landed. The student must then jump or walk into each square except the one which contains the puck. If the student steps on a line or into the square that contains the puck, a turn is lost. If the student proceeds correctly over all the squares, his name is placed on the square which contained his puck. The student who gets his name placed in the most squares in the winner.

C. COMMERCIALLY AVAILABLE TOYS FOR TRACKING, SCANNING AND SELECTION ACTIVITIES

In addition to the activities and games delineated in the previous sections, there are numerous commercially produced toys which can enhance the implementation of the instructional sequences. The toys can be found in most department stores, discount stores and toy shops. The following list of toys is not meant to be an exhaustive listing of available toys, but should serve as a sampling.

PULL TOYS

The students can track movement of toys, both visual and auditory components, and track moving parts of the toys.

Fisher-Price: Humpty-Dumpty, Penguin, Cow, Bouncy Racer, Jiffy Dump Truck, Telephone, Mini-Copter, Peek-a-boo Block.

Creative Playthings: Blocks and Beads.

ACTIVATION TOYS WITH ONE MOVABLE PART

The students can track the movement of the toy.

Slinky
Frisbee
Dum-Dum on a spring
Yo-yo

ACTIVATION TOYS WITH MULTIPLE MOVABLE PARTS

The students can track the movements of the toy parts and scan the toy for levers, buttons, knobs, or strings which activate the toy.

Fischer-Price:	Activity Center, Play Gym
Kohner:	Busy Box, Surprise Box, Mr. Busy Face
Creative Playthings:	Baby Activator
Child Guidance:	Big Mouth Singers
Ohio Art:	Etch-a-Sketch
Mattel:	See 'n Say toys
Winnie the Pooh: (Sears)	Musical Birdhouse

BOARD GAMES

The students can track the spinners used to determine the number of moves allowed to a player. The game board may be scanned to locate a player's marker or to locate specific spots on the board. The player's markers can be tracked as they progress on the board.

Candyland
Winnie-the-Pooh
Twister
Chutes and Ladders
Hi-Ho-Cheerio
Many additional games at varying levels.

TABLE GAMES

The students can track the movements of the playing objects; ball, puck or electronic dot.

Air Hockey
Pong (T.V. Tennis)
Foos Ball
Pool

OTHER TOYS

The students can track movements of objects or the person operating the toy.

Tonka:	Vehicles with movable parts
Fisher-Price:	Bowling, Basketball, Garage
Creative Playthings:	Sewing Block with Wooden Needle
Child Guidance:	Log and Tools
Bowmar:	Manipulative Books; How Does it Feel? and Things I Can Do
Variety of Race Car Games:	May be electric or manual (Mattel, Tower of Power, etc.)

SECTION VII: SUGGESTED STRATEGIES FOR RECORDING STUDENT PROGRESS

There are numerous ways in which the acquisition of skills can be empirically verified. Several sample strategies for recording student progress have been included in an attempt to assist teachers who may use the tracking skill sequence or the scanning and selection skill sequences.

SAMPLE DATA SHEET: Data Sheet I is an example of a way to record an individual student's progress through a particular step in one of the sequences. Data Sheet I has been partially completed to exemplify possible performance on Phase 1, Part 1, Step A of the Tracking Sequence. As can be discerned from inspection of Data Sheet I instruction has occurred in two settings, with two persons instructing, using two objects, but using one consistent verbal cue. However, the student has not yet reached criterion performance, and additional teaching trials are necessary.

CUMULATIVE RECORD SHEET: The Cumulative Record Sheet can be utilized to record an individual student's progress toward the attainment of criterion performance on all steps of a particular part in the sequence. The cumulative record sheet provides one way to collate longitudinal information, including performance across persons, settings, objects, language cues, distance, eye level and speed. A teacher may place marks in squares which can represent a student's performance on a particular step of a sequence. This cumulative record sheet has been completed to exemplify how a student's performance on Phase 1, Part 1, Steps A, B, and C of the Tracking Sequence might be recorded cumulatively.

SAMPLE DATA SHEET

INSTRUCTIONAL SEQUENCE: Tracking STUDENT NAME Mary

PHASE I PART I STEP A

Trial 1	DATE: 9/3	TEACHER Jan	DISTANCE within 2 ft.
		OBJECT clock	EYE LEVEL eye level
		CUE "Look at"	SPEED slow
		SETTING mat in classroom	STUDENT ACTION incorrect
Trial 2	DATE: 9/3	TEACHER Jan	DISTANCE within 2 ft.
		OBJECT balloon	EYE LEVEL eye level
		CUE "Look at"	SPEED slow
		SETTING mat in classroom	STUDENT ACTION correct
Trial 3	DATE: 9/3	TEACHER Steve	DISTANCE within 2 ft.
		OBJECT bread	EYE LEVEL eye level
		CUE "Look at"	SPEED slow
		SETTING lunchroom	STUDENT ACTION correct
Trial 4	DATE:	TEACHER	DISTANCE
		OBJECT	EYE LEVEL
		CUE	SPEED
		SETTING	STUDENT ACTION
Trial 5	DATE:	TEACHER	DISTANCE
		OBJECT	EYE LEVEL
		CUE	SPEED
		SETTING	STUDENT ACTION
Trial 6	DATE:	TEACHER	DISTANCE
		OBJECT	EYE LEVEL
		CUE	SPEED
		SETTING	STUDENT ACTION
Trial 7	DATE:	TEACHER	DISTANCE
		OBJECT	EYE LEVEL
		CUE	SPEED
		SETTING	STUDENT ACTION
Trial 8	DATE:	TEACHER	DISTANCE
		OBJECT	EYE LEVEL
		CUE	SPEED
		SETTING	STUDENT ACTION

CUMULATIVE RECORD SHEET

Instructional Sequence Tracking

Student Name Mary

Phase 1 Part 1

Initiation Date 9/3/76

Completion Date

STEPS

OBJECTS

	A	B	C	D	E	F	G	H	I	J	K	L	M
Clothing			X										
Toys	X												
Persons		X											
Functional Tools		X	X										
Foods	X												

STEPS

PERSONS

	A	B	C	D	E	F	G	H	I	J	K	L	M
Classroom Personnel	X	X	X										
School Personnel		X											
Family Members	X		X										
Peers													
Community Members		X											

STEPS

SETTINGS

	A	B	C	D	E	F	G	H	I	J	K	L	M
Classroom	X	X	X										
School		X											
Home	X		X										
Community		X											

X = Criterion Performance

STEPS

LANGUAGE CUES

	A	B	C	D	E	F	G	H	I	J	K	L	M
Verbal[1]	X	X	X										
Verbal[2]		X											
Non-Verbal[1]													
Non-Verbal[2]													
Verbal & Non-Verbal			X										

X = Criterion Performance

CUMULATIVE RECORD SHEET (Cont.)

STEPS

DISTANCE

	A	B	C	D	E	F	G	H	I	J	K	L	M
Within 2 feet	X	X	X										
2-5 feet													
5-10 feet													
Beyond 10 feet													

STEPS

EYE LEVEL

	A	B	C	D	E	F	G	H	I	J	K	L	M
At Eye Level	X	X	X										
15^0 Above Eye Level													
45^0 Above Eye Level													
15^0 Below Eye Level													
45^0 Below Eye Level													

STEPS

SPEED

	A	B	C	D	E	F	G	H	I	J	K	L	M
Slow	X	X	X										
Fast	X	X	X										

COMMENTS:

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Technical and Clerical Acknowledgements

It should be further acknowledged that the technical and clerical aspects of this book were arranged and supervised by Ms. Janet Garkey. Ms. Garkey wishes to express appreciation to Cynthia Beck, Jan Heisig, Sara Blake and Jeannette Talbot for their clerical contributions.