PTEC 155 - DEVELOPMENTAL DISABILITIES

MODULE 28

TEACHING/TRAINING
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INTRODUCTION

Each individual is born with instincts for survival, which provide the foundation for the learning capabilities of the individual. Several theorists; Piaget, Kephart, 'Chaney, and Edgars, observed "normal" infant sensorimotor development and related the development in this area to how the individual learns.

Frequently, the person with developmental disabilities is nonverbal, because motor development has not reached the verbal area. Therefore, it is more satisfactory to evaluate the person with developmental disabilities on the basis of motor development levels, than on IQ scores.

Piaget states that development is sequential, yet the client with developmental disabilities, regardless of cause, will almost always demonstrate a multitude of splinter skills that he/she has learned without the basis of previous motor development.

Itard, in 1799, attempted to educate the "Wild Boy of Aveyron" using some basic sensorimotor goals. These techniques have been enlarged by Sequin, Montessori and Kephart. However, these techniques have been used only in the last 10 to 15 years in the education of the client with developmental disabilities.

Several of the study guides in this module have been adapted from material in the Guide to Early Developmental Training. Wabash Center for the Mentally Retarded, Inc.

This module is designed to increase the health care worker's:

1. Awareness of sensorimotor development
2. Understanding of the importance of sensorimotor assessment.
3. Repertoire of interventions necessary to assist the client in making sensorimotor progress
OBJECTIVES

THEORY: The successful candidate will achieve a passing score (75%) on a written comprehensive examination dealing with techniques used to teach and train the clients with developmental disabilities.

ASSESSMENT: There will be a written comprehensive test; multiple choice, true/false, and matching questions.

MAKE UP TESTS MAY BE AN ESSAY TEST!!

INSTRUCTIONAL MEDIA: Study Guides

1. Developmental levels
2. Balance and Posture
3. Sensorimotor Development
4. Locomotion
5. Relaxation
6. Common factors that Delay a Child in the Sensorimotor Period
7. Stages of Language Development

TEXT: Beirne-Smith; pgs.272-282

INSTRUCTIONAL MEDIA:

Study guide 1: Developmental Levels

The successful candidate will be able to:

1. Match the ten (10) developmental levels with characteristic behaviors for each level.

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>MENTAL AGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I</td>
<td>3 months</td>
</tr>
<tr>
<td>b. II</td>
<td>4 months</td>
</tr>
<tr>
<td>c. III</td>
<td>5 months</td>
</tr>
<tr>
<td>d. IV</td>
<td>6 months</td>
</tr>
</tbody>
</table>
INSTRUCTIONAL MEDIA:

Study Guide 2: Balance and Posture

The successful candidate will be able to:

1. Identify the factors associated with posture and balance.
2. Select from a given list the appropriate definitions, descriptions of balance and posture.
3. Identify behaviors involved in head control.
4. Select from a given list the activities that will encourage head control.
5. Identify behaviors involved in sitting.
6. Select from a given list the activities that will encourage sitting balance.
7. Identify behaviors involved in standing balance.

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INSTRUCTIONAL MEDIA:

Study Guide 3: Sensorimotor Development

The successful candidate will be able to:

1. Identify factors involved in sensorimotor development.
2. Select from a given list the definition of sensorimotor.
3. Match the following terms with descriptions of the behaviors that are characteristic of perceptual motor development.

   a. Auditory vocal sequencing
   b. Eye hand coordination
   c. Grasp release
   d. Rhythm
   e. Sequencing
   f. Visual sequencing

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INSTRUCTIONAL MEDIA:

Study Guide 4: Locomotion

The successful candidate will be able to:

1. Select from a given list the definition of locomotion.

2. Match the following behaviors with appropriate descriptions of the behaviors.
   a. Rolling
   b. Crawling
   c. Creeping
   d. Walking
   e. Running

3. Select from a given list at least 3 learning tasks that occur when locomotion ability is well integrated.

4. Select from a given list the rationale for locomotion to be generalized and automatic.

__________________________________________________________________________________________

INSTRUCTIONAL MEDIA:

Study Guide 5: Relaxation

The successful candidate will be able to:

1. Identify the following aspects of relaxation

2. Match the following terms with the appropriate definitions/descriptions.
   a. Body image
   b. Differentiation
   c. Laterality
   d. Relaxation
   e. Directionality

3. Select the appropriate rationale for perceptual motor development relaxation techniques.

4. Identify three (3) relaxation intervention techniques.

__________________________________________________________________________________________

__________________________________________________________________________________________
INSTRUCTIONAL MEDIA:

Study Guide 6: Common Factors That Delay a Child in the Sensorimotor Period

The successful candidate will be able to:

1. Select from a given list a definition of Piaget’s theory of sensorimotor period of cognitive development, according to the Wabash Training Guide.

2. Identify three (3) common factors that delay a child in the sensorimotor stages.

3. Match the following terms associated with cognitive development, with the appropriate definitions/descriptions.
   a. Object of permanence
   b. Splinter skills
   c. Generalization

INSTRUCTIONAL MEDIA:

Study Guide 7: Stages of Language Development

The successful candidate will be able to:

1. Match normal language developmental age, with the corresponding chronological age.

INSTRUCTIONAL MEDIA:

Study Guide 8: Development of Oral Language Skills

The successful candidate will be able to:

1. Identify the following aspects of oral language development.

2. Identify the following aspects of pre-speech.
   a. When can verbal behavior be developed?
   b. Preverbal communication skills should provide the child with what experiences as a prelude to spoken language?

3. Identify Preverbal language skills.
4. Identify the following aspects of speech.
   a. What is the goal of speech?
   b. What things can be done to take advantage of individual initiative in areas of speech?

5. Oral language skills development can be facilitated by what suggestions?

6. Identify the following terms with their appropriate definitions/descriptions.
   a. Receptive language
   b. Discrimination of sounds

7. Identify techniques to enhance development of language.

8. Identify the rationale for teaching language skills to the developmentally disabled child.
PRINCIPLES

1. Normal growth and development follow sequential steps.

2. Development of the motor and neurological areas follow a pattern that is continuous, orderly, and progressive, i.e., each stage leads to the next; cephalo-caudal, proximo-distal, etc.


5. Cognitive development begins at birth?

6. What is known as intelligence develops as a result of child’s continuous interaction with the environment?

7. Intellectual organization, adaptation, and progress result in the continued reorganization and growth of mental structures.
VOCABULARY

Be prepared to identify the following vocabulary terms. (Use Tabor’s if necessary or other reference sources).

Auditory Vocal Sequencing
Body Image
Cephalocaudal
Crawling
Creeping
Differentiation
Directionality
Discrimination of Sounds
Eye -Hand coordination
Generalization
Grasp Release
Kinesthetic
Laterality
Locomotion
Ocular
Object of permanence
Propulsion
Proximo-distal
Receptive language
Relaxation
Rhythm
Rolling
Running
Be prepared to identify the following vocabulary terms. (Use Tabor’s if necessary or other reference sources).

Sensorimotor
Splinter skills
Visual Sequencing
Walking
STUDY GUIDE I
DEVELOPMENTAL LEVELS

Developmental levels adapted from the Guide To early Developmental Training, Wabash Center for the Mentally Retarded, Inc.

DEVELOPMENTAL LEVEL I:  Mental age of 3 months

1. Demonstrates good head control when held over an adult’s shoulder
2. When child is placed on belly, lifts head and upper chest.
3. When lying on back, usually moves both arms together and both legs together
4. Rolls from back to either side and returns.
5. Usually has hands closed into a fist and does not reach for or grasp objects. When child's hand is touched with an object, the child's arms wave about and hand opens and closes. Unable to hold rattle placed in hand.

DEVELOPMENTAL LEVEL II:  Mental age of 4 months

1. When placed on belly, lifts head and chest and pushes up on elbows.
2. Begins to open hands
3. When lying on back:
   a. And pulled toward sitting position, assists by raising head, but head still lags.
   b. Observes dangling toy and makes generalized but unsuccessful movements toward reaching it.
   c. Watches hands. Hands meet at midline.
   d. Accepts rattle or ring, looks at it, puts it to mouth, approaches it with free hand, but does not change hands.
4. When sitting with support, takes small block from table using a crude grasp. The child scoops from little finger side of hand, does not use thumb.

DEVELOPMENTAL LEVEL III:  Mental age of 5 months

1. Begins to roll from back to belly.
2. When pulled from back lying position to sitting position, maintains head in alignment with trunk.
3. When lying on belly:
   a. Pushes up on hands lifting upper body off floor, head well back, elbows straight.
   b. Tries to move and get something.
   c. May pivot around middle, moves arms and legs with back arched (swimming), kicks both legs like a frog, or uses arms to push self backward.
4. Uses both arms and hands together to pull things toward self.
5. When trying to hold an object has begun to use thumb. Uses fingers and thumb. Uses fingers and thumb to hold object against palm (palmar grasp).
DEVELOPMENTAL LEVEL IV:  Mental age of 6 months

1. Rolls over from back to belly in both directions.
2. When pulled to a sitting position lifts and actively cooperates by pulling with arms.
3. Sits well when propped.
5. When supported at trunk, takes some weight on legs.
6. Approaches and grasps object with one hand. Movement is not smooth or coordinated.

DEVELOPMENTAL LEVEL V:  Mental age of 7 months

1. Sits alone for longer periods. Back is still rounded, but the child no longer uses hands for support.
2. When lying on belly and propped up on straight arms, child begins to push back onto knees.
3. When held in a standing position actively bends and straightens knees (stomping).
4. Begins to crawl on belly while pulling with arms and pushing with leg. Movements of arms and legs are haphazard. Child later begins to use the right arm and leg together; the left arm and leg together.
5. Reach and grasp is now smooth and coordinated. Objects are held more toward the thumb. Tilts hand over on little finger side to grasp object, but is unable to use thumb and forefinger to pick up small objects.
6. Transfers objects from hand to hand, turns them over, and puts them to mouth.

DEVELOPMENTAL LEVEL VI:  Mental age of 8 months

1. Sits erect without support and with good balance.
2. From lying on belly, pushes to hand knee creeping position.
3. Crawls more efficiently, usually progressing from pulling and pushing with the opposite arm and leg.
4. Rolls from stomach to back in either direction.

DEVELOPMENTAL LEVEL VII:  Mental age of 9 – 10 months

1. Begins creeping on hands and knees, but with a variable pattern. Often pulls both knees under body at once in a kind of “bunny hop”. Later develops a better creeping pattern.
2. Moves from lying to sitting independently.
3. Moves from a lying to hand knee position independently.
4. Pulls self to standing position but does not know how to let self down again. Can roll onto belly, push self up on hands and knees, and from there, and pull to standing position with support.
5. Has become more skillful in grasping objects. To form a precise pincer grasp, is capable of placing thumb and forefinger in opposition. Picks and plucks; uses forefinger to poke and probe.

DEVELOPMENTAL LEVEL VIII: Mental age of 11 – 13 months

LOCOMOTOR SKILLS
1. Creeps on hands and knees. Performance is rapid and efficient.
2. Begins to walk progressing through the following states:
   a. Side steps (cruises) along playpen, rail or furniture.
   b. Attempts to stand-alone.
   c. Walks with one hand held and weight evenly distributed on both feet.
3. Rises from hands and knees to hands and feet; from there to standing without assistance.

HAND DEXTERITY AND HAND EYE COORDINATION
1. Uses thumb and forefinger deftly and precisely to pick up small objects; can poke a finger in a small hole.
2. Can drop a small block in a container; has almost acquired the capacity for placement and voluntary release.
3. Takes one block after another and place them repetitively on the table, but without any particular pattern.
4. Holds a toy in one hand while picking up another.
5. "Throws" a ball with a pushing movement.

DEVELOPMENTAL LEVEL IX: Mental age of 14 – 18 months

LOCOMOTOR SKILLS:
1. Walk independently, progressing as follows:
   a. Takes a few steps at a time with feet wide apart, hands raised at shoulder height. Falls by "collapsing".
   b. Walks flatfooted, but with better balance; feet closer together, hands held about waist height.
2. Sits on a child's chair with fair accuracy. 3. Climbs into an adult chair unaided.

HAND DEXTERITY AND HAND EYE COORDINATION
1. Places one block on top of another on the first try. Voluntary release is exaggerated. Takes repeated attempts to build a tower of three blocks.
2. Collects and holds approximately eight blocks handed one at a time.
3. Throws a ball with one or both hands.
4. Turns pages, usually turning several pages at a time, of a book or magazine.
5. Holds large crayon in fist and scribbles spontaneously. Imitates a vertical stroke but without regard for direction.
6. Holds a glass of milk in both hands somewhat precariously.
7. Feeds self with a spoon with palm down.

DEVELOPMENTAL LEVEL X: Mental age of 19 – 24 months

1. Has learned to run; stiffly at first; then for ten feet or more without falling.
2. Walks up and down stairs alone, still bringing both feet to each step in turn.
3. Squats to play
4. On command, walks up to a ball and kicks it.
5. Jumps down on stair step, on foot leading. Usually lands on all fours or in a deep squat position.
6. Rides a kiddie car.
7. Broad jumps over a line or small object.
8. Climbs into and stands up on an adult chair.

HAND DEXTERITY AND EYE COORDINATION:

1. Block play
   a. Builds a tower of up to six blocks.
   b. Places three blocks in a row to make a train, then pushes train.
2. Drawing:
   a. Holds crayon in fist.
   b. Scribbles more spontaneously.
   c. Imitates vertical and circular strokes.
3. Form board:
   a. When forms are presented opposite to correct space, correctly inserts all forms.
4. Turns the pages of a book or magazine, one by one. Points to pictures, names some pictures.
5. Feeding:
   a. Holds spoon with thumb and fingers, palm up or with overhand grasp.
   b. Holds glass of milk securely, often with one hand, but with the other hand ready to help.
6. Dressing:
   a. Pulls on simple articles of clothing, socks, mittens, and cap.
   b. Removes shoes, but often needs help with laces.
   c. Cooperates well in dressing- standing, turning, putting out arms, etc.
7. Social behaviors:
   a. Plays beside other children, but not with them. (parallel play)
   b. Apt to snatch, push and kick rather than to give and take in a polite fashion.
   c. Imitates domestic events in play; e.g. putting dolly to bed.
STUDY GUIDE 2
BALANCE AND POSTURE

Adapted from: Guide to Early Developmental Training, Wabash Center for the Mentally Retarded.

DEFINITION OF BALANCE AND POSTURE:

Balance and posture is the ability to control the head and trunk when sitting, standing, walking, running, and jumping. When a person can attend to objects and his environment rather than to body balance, balance has been mastered and dynamic balance achieved.

HEAD AND TRUNK CONTROL BEHAVIORS:

1. The child will be able to:
   a. When held over an adult's shoulder and when lying on belly, hold head erect without support.
   b. When lying on belly, lift head and upper chest.
   c. When supported in the sitting position, hold head erect.
   d. Assist when pulled from lying position to sitting by pulling with arms and holding head in alignment.

2. Activities to encourage head control:
   a. Keep child lying on belly much of the time to stimulate the child to raise his head.
   b. Gently lift the child's head and turn it to the other side.
   c. Stimulate the child by using a sound toy - rattle or bell - directly in front of the child's head.
   d. Gently and minimally hyper extend child's head over ledge of padded table. Encourage child to lift head as you say "up"
   e. With child lying on back, use a bright or shiny object, preferably one which makes noise, to stimulate child to turn and locate object; and then to follow the object with his head.

SITTING BEHAVIORS:

1. The child will be able to:
   a. Go from lying to sitting position without assistance.
   b. Sit with support and attend to another task.
   c. Sit erect without support and with good balance.

2. Activities to encourage sitting behaviors:
   a. Set child in a high chair or special training chair with support and safety strap-
      (1) Present toy
      (2) Dangle toy for child to reach at.
   b. Seat child on floor between your legs
   c. Seat child on floor where he will be able to use both arms for props.
   d. Seat child on lap facing you and support him while bouncing him up and down.
   e. Seat child with corner support. Sit on floor with child to play games.
STANDING BEHAVIORS:

1. The child will be able to:
   a. Support part of weight in standing, actively bend and straighten knees when held in standing position, and balance trunk.
   b. Pull self to standing from squatting position and hand knee position.
   c. Stand independently and attend to other tasks.
   d. Stand on one foot on tip toe and attend to other tasks for 15 seconds.
   e. Fall safely to hands and knees and to sitting position.
   f. Seat self in chair with assistance.

2. Activities that encourage standing:
   a. Stimulate supporting reflex activity in feet and legs by holding the child erect so that the child's feet touch floor or your lap. Raise and lower the child; always keeping child's feet in contact with the floor.
   b. Bounce the child on your lap while holding child erect - allow the child's knees to bend, then lift the child erect again.
   c. With child lying on back, take the child's hands and pull to sitting position. Tuck toes under your thigh, then pull child forward into a squatting position.
   d. Place child's hands on a chair and urge the child to pull up to standing on knees. Then push one knee forward and up until that foot is flat on the floor.
   e. Show child how to use drawer handles, table legs, chair arms, bathtubs, and other similar items as hand holds by which to pull self up.
   f. Stand child in a stand up table with toys on the tabletop.
   g. Stand child with back against a wall for support.

NOTE: ACTIVITIES THAT WILL STRENGTHEN STANDING ACTIVITY AS: SUPPORT THE CHILD'S UPPER RIBS, PROGRESS TO ASSISTING FROM SITTING TO STANDING.
Sensorimotor development is the term used to describe the period of intellectual growth that occurs from birth to the beginning of developmental language. The sensorimotor period is the period of mental development, which begins with the capacity for a few reflexes and ends when language and other symbolic ways of representing the world first appear. During this period, a child learns about his body and how to use it. He learns how to use his head, neck, trunk, shoulders, arms, hands, hips, legs and feet. He learns how to use the various parts of his body so that he can hold his head up, sit, kneel, stand, roll, crawl, creep and walk. He learns how to use his arms and hands to manipulate objects, play with toys, feed himself, etc. He learns how to explore his environment.

This exploration must be systematic. If it is not systematic, exploration is random and learning is random and meaningless. It is through systematic exploration that the individual gains an accurate concept of the world, including an accurate concept of himself. If the exploration is random, there is no continuity of information. There is only a collection of isolated facts. For learning to be meaningful, exploration must be systematic.

The sensorimotor period can be divided into segments or stages. There are several ways to do this including Kephart’s sensorimotor areas and Piaget’s sub stages. A very simple way is to divide the sensorimotor period into major stages. An individual must go through both stages to develop the ability to systematically explore. The first stage is the stage of “learning to move” A child must learn how to move before he can actively explore. Once he has learned to move, he is then in the second stage which is the stage of “moving to learn”.

Learning during this period consists primarily of moving in the environment to gather information. Before an individual can move around to learn, he must first learn how to move. He must develop a large number of what Piaget called “schema”. (Schema are well defined sequences of action which can be recognized easily amid other actions). The schema or movement patterns develop during the sensorimotor period.

He starts out with the ability to make certain reflexive actions and certain generalized globular movement. These reflexive activities are specific responses to specific stimuli. These reflexive activities do not gather information for the individual. Before movements out of these reflexive actions can be meaningful, there must be elaboration, modification (this includes inhibition), and integration of the various reflexes so that they help make a pattern of movement. Generalized movements are undifferentiated movements. They are not a series of movements of successive parts, but are mass movements throughout the individual. They usually cannot be stopped once started. As development occurs, generalized movements become more specific, become differentiated. As the reflexive movements are integrated and the generalized movements become differentiated, movement patterns develop. Movement patterns are a series of actions for a purpose. Movement or motor patterns provide the flexibility needed in an individual to permit him to respond to the environment, to solve problems. A motor pattern differs from a motor skill. A motor skill refers to the ability to do one particular motor activity extremely well. A motor pattern refers to the ability to do many activities acceptably. Motor patterns stress the purpose of the movement, the outcome of the movement.
Motor patterns provide the foundation for more complex learning. It is this foundation, which provides the basis for systematic exploration. As these patterns are developing, the individual is learning about the individual part of his body. This is also systematic as it proceeds by two general principles. The first is that development precedes cephalo caudally, i.e. goes from the head to the tail. The second is that development proceeds proximo-distally, i.e. goes from the midline to the fingers and toes. As the individual learns to sort out the various parts of his body and to use them (differentiation), he is also learning to oppose gravity. He then learns to use the various parts in combination and with the various senses. He begins to interact purposefully with his environment. He develops receipt and propulsion (the ability to use his hands and eyes together), and perceptual motor match (the ability to match information from the sense to information from movement). These abilities permit him to begin to explore purposefully as he can use the various body parts and senses to into the environment concentrating on the goal.

During the sensorimotor period, the individual develops his initial concepts of space, time, objects and causality. The first of these concepts is space. Space is the area between objects. It is the area immediately around a person. An individual must learn that he can move around in space, objects can move about in space, and most importantly that he is not a part of space, but is separate from his environment. Time is the cyclical occurrence of events such as day and night. It is the awareness that every activity has beginning, middle and end. It also refers to rhythm, the free flowing of actions.

**Objects** is a concept consisting of two parts:

1. The character of objects
2. The permanence of objects

The most important thing that the individual must learn is that he is an object. A separate entity apart from his environment. He must become aware that there are many objects around him; each separate and different. He must also learn of the permanence of objects, i.e. that objects still exist even when out of sight. Without his knowledge of permanence, he is extremely limited in what he can do as he can only act on what he sees before him. He must learn to handle and manipulate objects and that objects can do things to him.

**Causality** means the cause and effect of any activity, i.e., the concept that every action has a cause and effect whether the action is made by him, acted upon by him, or occurs around him. The individual must learn that he got from one place to another by propelling himself through space. He walked, crawled, rolled, etc. When he becomes aware of the causality of an action, he can repeat that action over and over. He learns causality only by attending to each action.
Many individuals do not develop fully during the sensorimotor period. Because it is the foundation for all later conceptual development, any disturbances during the sensorimotor period disrupt the development of later stages. The mentally retarded often have deficiencies of the sensorimotor period. Severely and profoundly retarded have gross sensorimotor deficits. Most moderately and mildly retarded have sensorimotor deficits.

(It should be noted that many individuals with normal and superior intelligence have sensorimotor deficiencies. Most people with such deficiencies have learned to compensate adequately so that there has not been an adverse effect. Some mentally retarded have also compensated effectively, but most have not). To help the mentally retarded develop to the fullest extent possible, it is essential to correct these deficiencies.

There has been much supportive research regarding the importance of movement for bases for learning. In particular, works by Held, Zaporazhets, Hohler, Kephart, Piaget, Edgar, and others have shown the importance of being aware of the movements and be able to attend to the movements.

There is no sensorimotor technique as such. There are many techniques, which facilitate sensorimotor development. Any technique which helps an individual’s awareness of the various parts and ability to systematically explore his environment is stimulating sensorimotor development and could be termed a sensorimotor technique.

Developmental specialists use a variety of techniques and equipment to help correct sensorimotor deficiencies in clients. Regardless of what technique or equipment is used, the benefit is only seen if it is directed towards the individual client’s problems. The use of any piece of equipment or any technique must be modified or adapted to meet the needs of each client.
STUDY GUIDE 4
LOCOMOTION

Adapted From Guide to Early Developmental Training
Wabash Center For the Mentally Retarded

“Locomotion is the development of movement patterns that enable the child to move through space and to explore the environment”.

LOCTOMOTION ACTIVITIES: These activities encourage the developmental learning tasks of balance, body image, and sensorimotor development.

1. Rolling
   a. Rolls from back to either side and to back again
   b. Rolls over from back to belly in either direction
   c. Rolls from belly to back in either direction

2. Crawling
   a. Crawl on belly progressing from arm and leg on same side to pulling and pushing with the opposite arm and leg

3. Creeping
   a. Pushes back onto knees when lying on belly and propped up on straight arms
   b. Rocks forward and back and may push self backward when assuming the creep
   c. Moves from the lying position to the hand knee position independently
   d. Creeps on hands and knees efficiently and rapidly

4. Walking
   a. Cruises along furniture and attempts to stand-alone for short time periods
   b. Walks with one hand held, weight evenly distributed on both feet
   c. Takes a few steps at a time with feet wide apart and hands at shoulder height
   d. Walks independently with heel toe gait
   e. Walks on tiptoe ten feet or more without touching heels to the ground
   f. Without losing balance, walks forward eight feet on a four inch wide, twelve foot long walking board alternating feet; backward sliding feet; sideways sliding feet
   g. Steps over obstacles without exaggerated steps
   h. Combines walking with other means of moving in simple sequences and can attend to objects or people in the environment while walking

5. Running
   a. Runs, stiffly at first, and maintains balance ten feet or more
   b. Changes speed and direction, starting and stopping; is able to participate in running games
Perceptual Motor learning precedes the individual's ability to control motor responses and to participate meaningfully with these controlled motor responses. Kephart states that a kinesthetic figure-ground development begins during motor differentiation. Most developmentally disabled clients exhibit various degrees of differentiation problems. These clients will exhibit increased tension in muscles inhibiting the reception of purposeful kinesthetic information. The differentiation learned builds up high energy levels in order to produce voluntary movements.

Using Jacobsen’s technique of progressive relaxation, the client can be taught to relax one part at a time. Relaxation by verbal suggestion, manipulation of joints, and massage of muscles can be carried from extremities inward. The client with developmental disabilities experiences the most difficulty in the area of head and trunk, therefore, relaxation techniques should begin first with feet and legs, then hands and arms, neck and shoulders, and finally to the trunk.

Initially, the extremities should be supported at the joint closest to where the manipulation will begin. Seat yourself behind the client. Beginning with the dominant foot, holding client’s ankle, massage toes and foot, allow client to see foot, tell client to relax his/her toes or that you will do that for him/her.

After you have relaxed the lower extremities, you can then use passive range of motion (R.O.M.) to move these lower limbs or ask the client to move them in some purposeful fashion. Watch for tension to develop. When tension develops at some point, return to the relaxation procedure.

Since many of the actions of these clients will be done quickly or without following directions, you may believe the client is uncooperative. Indeed, what is occurring is that the client will be so busy trying to keep his/her balance, that he/she cannot attend to the activity concurrently with a kinesthetic awareness of what that body part is doing. How can we expect an activity to be carried out using the foot if the client does not feel what or where the foot is.
Definitions of Terms:


2. Differentiation: Ability to sort out and use independently different parts of body in specific controlled manner.

3. Laterality: Awareness of two sides of body and use separately or together as task demands.

4. Kinesthetic: The sense that yields information of the movement of muscles of body and positions of joints during passive movement.

5. Directionality: Projecting towards right and left, up and down, forwards and backwards.
STUDY GUIDE 6
COMMON FACTORS THAT DELAY A CHILD IN THE SENSORIMOTOR PERIOD

According to the Wabash center Training Guide, there are three (3) factors, which may hold back a child’s progress through the sensorimotor and later stages.

1. Physical impairments that slow the critical mastery of fine and gross motor skills.
2. Sensory deficiencies, such as impaired vision or hearing acuity, that slow knowledge acquisition.
3. Language problems – either receptive or expressive – that impede the child’s assimilation into normal educational and social settings.

Vocabulary associated with cognitive development during the sensorimotor period:

1. Object of Permanence: Ability to visually perceive objects separate from self and awareness of their existence even when out of sight.
2. Splinter Skills: Particular ability mastered in isolation from other areas of competence.
3. Generalization: Ability to apply previously learned information appropriately to a new situation.
### STUDY GUIDE 7

**STAGES OF LANGUAGE DEVELOPMENT**

**NORMAL DEVELOPMENT STAGES IN LANGUAGE DEVELOPMENT**

*(From the Wabash Training Center Guide)*

<table>
<thead>
<tr>
<th>AGE</th>
<th>SKILL SET</th>
</tr>
</thead>
</table>
| Birth to 2 months | Cries  
Non cry vocalization: grunts, coos, gurgles, squeals |
| 2 to 4 months | Attends to others’ voices  
Offers consonant – vowel – like utterances  
May participate in vocal exchange with caretaker |
| 4 to 7 months | Responds to human voices by turning head toward source  
May be disturbed by angry voices  
Usually stops crying when spoken to |
| 7 to 9 months | Some single syllables associated to objects  
Listens to familiar words  
Jargon with intonation that is “sentence like”  
Imitates some sounds |
| 9 to 10 months | Imitates self perpetuated sounds that interest him  
Evidence of comprehension; e.g. “Where is Daddy”? and child looks toward father |
| 10 months to 1 year | Imitates babbling sounds of others  
Comprehends “bye bye” and similar recurrent routines  
Responds to simple commands  
First word may appear |
| 1 to 1-1/2 years | Responds to a variety of commands  
Makes self understood through reporting, requesting  
Has about 10 to 30 single word vocabulary  
Identifies familiar objects, some body parts when named |
| 1-1/2 to 2 years | Names objects and pictures upon request  
Two word combinations occur; may be quickly followed by three, four, and five word utterances  
Can follow many one and two part commands |
| 2 to 3 years | Begins developing negative and interrogative markers; e.g., “no, sit down”  
Names one to three colors  
Understands imperatives  
Uses more detailed speech to satisfy needs  
Speech used for greetings, asking questions  
Uses pronouns with frequent errors  
Understands concepts: ‘on/off, up/down, open/shut, etc.’ |
<table>
<thead>
<tr>
<th>Age Range</th>
<th>Language Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 to 4 years</td>
<td>Understands and uses many plural forms and some verb tenses. Understands five colors; also concepts like little/big, fast/slow. Uses pronouns correctly. Can sequence a three-part event.</td>
</tr>
<tr>
<td>4 to 5 years</td>
<td>Sentence length 6 to 8 words in well-ordered sequence. Usually asks for information with well formed sentences. Understands a picture story. Few articulation errors. Understands “a pair of”, some, many, middle, etc.</td>
</tr>
<tr>
<td>5 to 6 years</td>
<td>Continued addition of pronouns, prepositions, and conjunctions. Recites numbers to 30. Asks meaning of words. Relates fanciful tales. Names: Nickel, penny, and dime. Understands half, left/right, few, fourth one, same/different etc.</td>
</tr>
<tr>
<td>6 to 7 years</td>
<td>Make telephone calls. Can tell familiar story. Reads at pre primer level. Further development of structure and syntax. Increases variety of negative forms; e.g. “I don’t want any carrots”. Uses “is” and “are” correctly.</td>
</tr>
<tr>
<td>7 to 8 years</td>
<td>Names all coins. Reads on own initiative. Uses most sentence forms. Self directed speech. Uses passive voice correctly. References to time are usually syntactically correct.</td>
</tr>
</tbody>
</table>
Prespeech

A. Introduction:

1. Verbal behavior cannot be developed unless other aspects of behavior show a readiness for speech. As a prelude to spoken language, the preverbal communication skills should provide the child with experiences to:

   a. Build receptive language skills (attending to parent, imitating body actions, following simple directions, following more complex directions)
   b. Compensate for the lack of early sensory experiences
   c. Develop and improve the parts of the body used for speech production

B. Preverbal Language Skills

1. Receptive Language Skills

   a. If the child is ever to develop and use language, it is important that he/she be exposed to a variety of experiences
   b. Our goal is the development of responsive listening habits. In learning the sounds in the environment and the verbal speech sounds, which make language, a child must be trained to listen
   c. Interest in imitation is a normal stage of speech and language development. Since imitation of vocal behavior follows imitation of motor behavior, the child may be asked to imitate movement before being asked to imitate vocal responses

2. Early Sensory Experience

   a. The sensory experience focuses on the young child’s “all over” learning through feeling, hearing, seeing, smelling and tasting
   b. The child’s sensory limitation should be considered Determine what senses are functional and to what extent. Try to improve his/her functional level with whatever means necessary

3. Development of Sucking, Swallowing, and Chewing

   a. The parts of the body used for eating and breathing may be poorly developed and limited in function. Physical activities such as sucking, swallowing, tongue control and chewing may have to be improved before many exceptional children can produce intelligible and meaningful speech and language.
   b. Sucking and swallowing are the first of the reflexes to develop
   c. The best way of establishing voluntary chewing habits is by ensuring that the child’s daily diet consist of solid foods that can be chewed
Speech

A. Introduction: The goal is to develop good, usable speech. The idea is that words for things are learned through action with these things. Set aside periods of time to create language activities for the child. It is important to initiate activities of interest to the child as well as to take advantage of individual initiative.

B. Suggestions for Oral Language Skills Development. The following suggestions are given for the development of oral language skills:

1. When talking to the child, use a simple vocabulary. Because a young child thinks in terms of uncomplicated actions and words, he/she can most easily understand simple and brief sentences. Words should be spoken slowly and clearly. Sentences should be short and simple.

2. Talk the child saying the words, which go along with the experience going on. State simple, short sentences about what he/she is doing, feeling, and perceiving. When the child is nearby, talk loudly about what you are hearing, seeing, doing, or feeling.

3. Children with little or no speech need to hear spoken language. If you find it difficult to maintain a running conversation, try singing. Make up songs about what you are doing or the child is doing. Use the tune “Here we go round the mulberry bush” and add your own lines to it, such as “This is the way we wash our hands, wash our hands, wash our hands, so early in the morning”. Other short phrases such as “eat our soup”, “comb our hair”, “brush our teeth” can also be used.

4. Above all, encourage some verbalization from the child, the best that he/she is capable of, and then reinforce accomplishment with words of praise.

5. Avoid delaying the child’s acquisition of speech by anticipating his/her needs and thereby depriving him/her of the necessity of asking, and removing the incentive to talk.

6. Strive to make speech as enjoyable as possible. Combining language with play can be effective.

7. When the child receives the affection and attention that helps him/her feel important, the child has the best chance for developing good usable speech. The child needs to feel wanted and that he/she makes real contributions to the family.
Teaching and Training

- Definitions
  - Splinter skills
  - Object permanence
  - Differentiation
  - Directionality
  - Generalization
  - Kinesthetic relaxation
  - Cephalo-caudal development

Basic Principles

- PERCEPTUAL MOTOR DEVELOPMENT
  - Visual sequencing
  - Auditory vocal sequencing
  - Grasp release
  - Hand-eye coordination

- COGNITIVE DEVELOPMENT
  - Begins at birth
  - Follows sequential steps
  - Is a result of continuous interaction with environment
Developmental Stages

Language skill acquisition

- Birth-2 months
- 2-4 months
- 4-7 months
- 7-9 months
- 2-3 years
- 4-5 years
- 5-6 years
- 6-7 years

Developmental levels

- Know how the levels progress and how each step builds upon the previous one (levels 1-7)
Important principles and definitions

- Balance and posture
- Locomotion
- Standing
- Receptive language
- Sensorimotor development
- Relaxation