

HANDBOOK OF SENSORIMOTOR
ACTIVITIES FOR PRESCHOOL TEACHERS

MASTER'S PROJECT

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CHAPTER I INTRODUCTION

Purpose of the Study

Do you bite your nails, whistle while you work, or chew on pencils when you are attempting to maintain alertness? Or do you find yourself "doodling" while listening or sitting with legs crossed and bouncing the top leg slightly? We all use our bodies, consciously or unconsciously, to help us concentrate to organize information (Trott, 1989). Much of what one does helps to process, organize and use the information one receives from the senses of hearing, vision, smell, taste, touch, movement and gravity. One processes the input from the sensory systems and then uses it to respond to different situations. This is what sensory integration is all about. It is a neurological process that determines one's ability to take in information through the senses, organize the information, and then make appropriate responses in one's environment.

Teachers are concerned with helping children use the information they receive. Most efforts focus on the visual and auditory systems. However, the ability to learn is based in a large part on the ability to process the information received through the tactile, vestibular, and proprioceptive systems as well as through the areas of auditory and visual (Trott, 1989). Children learn best when they are comfortable with their environment and when they are aware of where their body is in

relation to their environment. They must be able to take in and process information from all channels.

Sensory integrative development takes place from infancy through childhood, but it takes sensory input and experiences to activate and enhance the process. For most children, sensory integration develops in the course of natural childhood activities. But for some, sensory integration does not develop as efficiently as it should. Children who are unable to process and use the information they receive in comparison to their peers often have a sensory integrative disorder (Trott, 1989). Students with sensory integration disorders face ongoing problems as a number of learning, development, or behavior problems may develop. Therefore, teachers need to recognize these problems and find activities and practical ways to assist these children. Learning about sensory integration can help to fill in some missing pieces about how children learn. The author felt that this issue is an important one to address even at the preschool level as many children with sensory integration disorders end up frustrated and with a low self-esteem as they attempt to meet the ordinary demands of the classroom.

In the late 1950's, an occupational therapist, Ayres (1972) originated the theory of sensory integration. One of the major premises of her theory was that sensory enhanced activities would improve the ability of the central nervous system to integrate sensory input. This would exert a positive effect on the higher brain centers and then have a positive influence on

various motor and academic tasks, which would in turn, improve sensory integration (Cratty, 1989).

A study was done by Morrison and Pothier (1972) to determine the effectiveness of a program involving sensory integrative training with developmentally handicapped preschoolers. They found that the children who participated in the prescribed training program had significant gains in gross motor and language development compared with a group of children involved in a remedial program that was not based on sensorimotor development.

Children that have sensory disorders can be helped to develop their ability to organize and integrate sensory information. An occupational or physical therapist who has the knowledge and background of sensory integration theory must be the mainstay and work closely and in cooperation with the teacher for children with sensory integration disorders. Even though teachers are not able to treat sensory integration disorders without the consultation of an occupational or physical therapist, the author felt it is important for teachers to recognize these disorders in children as the integration of sensory information is necessary for smooth motor output. Preschool teachers can provide sensorimotor experiences to help children develop an organized manner of looking at the world. It is on this foundation that the child builds more complicated skills, such as in the areas of academics and fine motor. Therefore, this handbook contains sensorimotor activities for preschool teachers to use with their students with

the purpose being to stimulate the senses, as well as develop the ability to remember, to perceive, to motor plan, and to facilitate awareness.

Problem Statement

The purpose of this study was to develop a handbook of sensorimotor activities for use by preschool teachers.

Definition of Terms

Tactile pertains to sense of touch.

Proprioceptive refers to perception of sensation from the muscles and joints.

Vestibular refers to the sense of gravity and movement.

Occupational therapist is a health professional concerned with improving a person's occupational performance.

Physical therapist is a health professional concerned with improving a person's physical ability.

Sensory integrative dysfunction is an irregularity in brain function that makes it difficult to integrate sensory input effectively.

Sensorimotor is an approach to intervention in which sensory input is expected to produce motor output.

CHAPTER II LITERATURE REVIEW

In this chapter, the review of the related literature is presented. It is divided into the following sections: Sensory Modalities Related to Sensory Integration, Sensory Integration Dysfunctions, and Reasons for Using Sensorimotor Activities.

Sensory Modalities Related to Sensory Integration

There are various sensory modalities related to the concept of sensory integration that are discussed in the following chapter.

One system important to the aspect of sensory integration is the tactile system. It is one of the first systems to develop. It deals with the information one receives from the sense of touch (Trott, 1989). There are two parts to the tactile system: the protective system and the discriminative system. The protective system alerts the body to stimuli which may be dangerous or harmful. For example, if one would touch a hot stove, one would immediately pull the hand away. This demonstrates that this system is working properly.

The discriminative system is the other aspect of the tactile system. It gives information concerning what part of the body is being touched and the object that is doing the touching. One understands information such as soft, hard, rough, smooth, etc. through this channel. When the child's protective system is active and the child is in a "fight" or "flight" mode, one has

limited use of the discriminative system, which is the mode where most learning takes place. Moreover, the protective system and the discriminative system must work together to function effectively. This allows for rich interaction with one's environment when this takes place (Sears, 1994).

Another system important to the aspect of sensory integration is the vestibular system. It involves many different functions that gives one the ability to do many things . The information one receives and processes from this system is basic to everything one does (Mailloux, 1993).

The parts of the vestibular system that take in information are located in the inner ear. One part responds to movement and change of direction while the other part responds to change of head position and gravitational pull (Mailloux, 1993). Input from this system indicates whether one is moving, how quickly, and in what direction (Trott, Laurel, & Windeck, 1993). It allows one to coordinate head movements with eye movements. This would occur in activities where one's head would turn to follow a moving object, such as following a football down a field.

The vestibular system is also important in developing and maintaining muscle tone. Muscle tone allows one to move efficiently and also hold the body in position and then effectively maintain these positions.

Another system important to the aspect of sensory integration is the proprioceptive system. This system provides information from body parts, especially muscles and joints, and

allows one to perform activities with coordination (Fink, 1989). It gives an understanding of the body's position in space, both consciously and unconsciously, based on feedback from joints and muscles. Proprioceptors work in conjunction with the vestibular system to give a sense of balance and position in space (Kramer & Hinojosa, 1993).

Bell (1970) states that, "Proprioceptors are receptors related to kinesthetic sensations. The term kinesthetic sensation implies that these receptors send sensory impulses to the central nervous system where they are integrated with impulses from other receptors for motor output." The muscles and joints take part in this process. The joints in the hips and shoulders are of utmost importance and give the most feedback to the central nervous system.

Another sensory modality related to sensory integration is visual perception (Mailloux, 1992). According to Mailloux, it "refers to the meaning that our brains give to the information that we see." Some of the functions related to visual perception are: figure ground perception, mental imaging, and eye hand coordination.

Figure ground perception refers to the ability to see something that is part of a bigger picture. It allows one to pick a specific thing from a background. For example, one would be able to find a white washcloth on top of a white towel.

Mental imaging refers to the ability to visualize things before actually moving them. One may figure things out in one's head before attempting them.

Eye hand coordination is a part of visual perception that involves integrating the use of the hands and the eyes. This skill gives one the ability to visually discriminate size, shape, and location of objects. It is used to tie one's shoe or to bat a ball. Visual perception is often thought of as an "end product" to effective tactile, vestibular, and proprioceptive systems.

In the above section, the writer dealt with various sensory modalities related to sensory integration. Now the writer discusses some sensory integrative dysfunctions.

Sensory Integration Dysfunctions

One sensory integrative dysfunction is tactile defensiveness. Ayres (1979) states that "tactile defensiveness is the tendency to react negatively and emotionally to touch sensations." Tactile defensiveness occurs when the central nervous system misinterprets input from the sensory modality of touch which causes an overreaction to a typical stimulus. A child that is tactilely defensive will tolerate his own self-touch but reacts negatively to a touch from someone else (Sears, 1981). Other symptoms usually include hyperactivity or distractibility. This child will either over- or under-dress for the weather. One may either cover oneself too much or be intolerant of certain types of fabric, length of sleeve, etc. One of the more obvious signs of tactile defensiveness is that the child dislikes getting hands into fingerpaint, glue, or other comparable materials. The child may exhibit defensiveness around the head and face as well.

The school situation and activities influence the tactilely defensive child. The child is high risk for learning, social, and emotional problems. The child is often in discomfort or stress in closely grouped learning situations. This may trigger hostility and aggression because of the physical intolerance of being touched. These observed behaviors are often misclassified and result in inappropriate treatment of the child.

Social interaction is also affected because most peers would not understand the negative responses from a touch on the arm. When a teacher gives a friendly pat or tousles the child's hair, it can be an extremely unpleasant experience (Trott, 1989). The brain constantly indicates to the child that one is unsafe, so it is difficult for the child to behave appropriately in different school situations.

As the child enters school, tactile input is often integrated into the curriculum as a learning experience, so it is evident how academic problems can arise because of this deficit.

Another sensory integrative dysfunction pertains to the vestibular system. A child with a vestibular dysfunction has difficulty relating to one's environment, and in turn, is prevented from moving with ease and confidence (Trott, Laurel, & Windeck, 1993). One appears uncoordinated and encounters difficulty with timing events and sequencing. Moreover, a child with this dysfunction may not like to participate in activities that require movement in a coordinated way. The child may suffer from motion sickness or quite the opposite, be slow to become dizzy no matter how wild the movement.

The child's communication skills may be affected as well. This may happen because communicating requires muscle tone to coordinate language and muscle activity. This can lead to the child being misunderstood and then the child is left frustrated.

Another sensory integrative dysfunction involves the inability to motor plan. Motor planning or praxis allows one to organize, plan, and execute skills of all types in an efficient way (Trott, Laurel, & Windeck, 1993). It requires accurate information from the tactile, vestibular, proprioceptive, auditory, and visual systems. It actually creates a memory of how things are done. As a task is repeated, the performance becomes automatic. That memory is used again and also modified to fit new situations. Motor planning is used whenever a new task is learned. Once a skill is learned, for example, skipping, it becomes automatic. Once a skill becomes automatic, one does not need to think about it anymore, and motor planning is not part of the process.

A child with motor planning problems has difficulty learning new movement patterns and combining the patterns into sequences. The child may learn a new motor act and then forget it within a short amount of time. The child appears clumsy and falls easily. Activities that require timing and sequencing, such as jumping rope or riding a bike, may be very difficult.

Another sensory integrative dysfunction is the inability to maintain an appropriate state of alertness while performing

everyday activities . The ability to attend, learn, and behave appropriately is somewhat dependent on one's alertness. A normal state of arousal develops as a result of being able to regulate sensory input (Trott, Laurel, & Windeck, 1993).

One's level of arousal changes throughout the day. Upon awakening, one is in a low arousal, and then it rises as one begins to move. During the day, one does various things to stay in a state of alert. If one sits for a lengthy amount of time, the level of arousal drops. In turn, if one becomes emotionally upset, the level rises, and one is unable to attend. Then one is able to calm oneself down to a normal state of arousal (Trott, Laurel, & Windeck, 1993).

A child with a sensory integrative dysfunction may have difficulty maintaining alertness. The child's arousal may be too low or too high to attend to various tasks. If a child's arousal is too low, one might assume the child is lazy or bored. The child is often reluctant to participate in activities and sedate pastimes are preferred over active play. If the child's state of arousal is too high, the child may constantly be in unpurposeful motion and blow up easily. It is also difficult for the child to sit still to complete tasks.

It is evident to observe that these children would have a difficult time in the classroom. Teachers are easily able to control their own state of arousal by walking around the room or by doing what helps them to stay alert. At the same time, most students are denied the ability to move to maintain an optimum state of arousal.

Another sensory integration dysfunction occurs when a child exhibits difficulty with bilateral integration. It involves coordinating both sides of the body and it is closely related to the vestibular system (Trott, Laurel, & Windeck, 1993).

The first part of bilateral integration involves doing the same motion with both sides of the body, such as clapping. The next step involves doing the same motion with both sides of the body, but alternately, like marching. The final step of bilateral integration includes doing different motions with each side of the body, such as cutting with scissors with one hand and holding the paper with the other. This ability permits one to ride a bike, skip, jump rope, or play the piano. It may be inhibited if hand dominance is not established properly.

A child that has difficulty coordinating both sides of the body may avoid crossing midline. One may notice that a child may switch hands during fine motor activities to compensate for the inability to use both hands in an efficient manner (Bissell, Fisher, Owens, & Polcyn, 1988).

In the above section, the writer gave some insight to sensory integrative dysfunctions. Now the writer gives some reasons for preschool teachers to use sensorimotor activities in the classroom.

Reasons for Using Sensorimotor Activities

One reason that sensorimotor activities should be incorporated into the preschool environment is that they have

a positive influence on a child's development (Horr, Pothier, & Morrison, 1975). During the first seven or eight years of a child's life, one is actively developing the structures and processes of the central nervous system, which indicates that one needs sensation and movement. Also, learning is based on the ability to process and use sensory and motor information. Sensorimotor activities provide the basis for a child to take in, organize, and then act upon information from the world. This ability then transfers to learning and other tasks. Moreover, the capacity to learn is based on the development of the sensory integrative system.

Sensorimotor activities help children to improve praxis or motor planning. The child can improve on old skills and become more confident in learning new skills.

Another reason for promoting sensorimotor activities in the preschool environment is that these activities allow children to interact and learn from their environment (Trott, Laurel, & Windeck, 1993). Children need movement in order to learn. It comes before communication and it is how children learn about their world. Movement benefits the child more than simply allowing one to get from place to place. When a child moves, one experiments with the environment. It helps the brain to organize information and it even reduces stress. It is definitely one of the primary tasks involved in being a child. These experiences provide movement to help the child acquire an organized manner of looking at the world and the child learns to move more efficiently (Trott, Laurel, & Windeck, 1993).

Sensorimotor activities provide information about the body, such as how it moves, and its position in space. This information is required for the child to master new motor tasks. These experiences help the child acquire concepts that underlie learning. The concepts like under, over, above, below, and between are learned through movement during play or other activities.

Moreover, preschool teachers need to provide opportunities for children to move more effectively and to increase awareness of their environment. This will give them the basis to build more complicated skills as they mature.

CHAPTER III PROCEDURE

Review of Journals

The review of journal articles related to the subject clarified the need for the presentation of a handbook. The author reviewed journals from 1972 to present. The following journals were used in obtaining information relating to sensory integration: Sensory Integration Quarterly, American Journal of Mental Deficiency, Academic Therapy, and Infants and Young Children.

Examination of Professional Texts

There were several professional texts available that dealt with sensory motor activities and sensory integration. The author reviewed texts from 1970 to present.

The texts Sensory Integration and Learning Disorders and Sensory Integration and the Child by Ayres (1972) helped support the idea of sensory integration. The texts Adapted Physical Education in the Mainstream by Crafty (1989) and Frames of Reference for Pediatric Occupational Therapy by Kramer and Hinojosa (1993) provided a theoretical base and strategies related to sensory integration.

Two texts that gave an organized collection of sensory motor activities to be used with children who have sensory integration disorders were Sensory-Motor Integration Activities by Fink (1989) and Sensory Motor Handbook: A Guide for Implementing and

Modifying Activities in the Classroom by Bissell, Fisher, Owens, & Polcyn (1988). The text, Sensorimotor Learning by Bell, (1970), included concepts underlying sensory input, integration, and motor output. Another text that gave an awareness to sensory integration is SenseAbilities: Understanding Sensory Integration by Trott, Laurel, & Windeck (1993). Trott (1989) also wrote a handbook that proves helpful for teachers, How Can I Help This Child? A guide for Teachers of Students with Sensory Integrative Disorders.

Critique by Experts

The author had the paper critiqued by an occupational therapist and an occupational therapist assistant. The occupational therapist assistant gave assistance in clarifying some of the concepts and aided with an example in the area of visual perception. The occupational therapist aided in clarifying some of the terminology and she also stated that the sensorimotor activities were safe and appropriate for teachers to use in the preschool classroom.

CHAPTER IV HANDBOOK

The proceeding activities are classified into the following areas: tactile, motor planning, vestibular, proprioceptive, bilateral integration, and visual perceptive, and body awareness. These activities are geared for children in a preschool classroom and are not considered therapy. The activities are classified under one area, but may overlap and actually integrate other areas as well. These activities may need to be varied or modified to meet the needs of the child so that each child is able to experience success. Structure, peer interaction, and sportsmanship will also contribute to the success of these activities (Bissell, Fisher, Owens, 1988).

It would be beneficial to include one of the following activities into a large or small group setting each day and allow for a 20 minute segment of time depending on the needs of the children. Also, it is important not to force any of these activities on a child. **Note: These activities are not considered therapy. For a more indepth study, consult a physical or occupational therapist.**

Tactile Activities

The purpose of these activities is to encourage using the sense of touch to learn from one's environment.

Caterpillar

Child rolls up in foam mat (3'x6'x1") keeping head out and then attempts rolling on another mat on the floor without it unraveling for two opportunities (Fink, 1989).

Steam Roller

Children lie down, prone or supine, on floor in a row. Roll a large ball over them except for faces for five times (Fink, 1989).

Hot Dog

Child rolls up in mat and other children or instructor put on pretend condiments by rubbing the hot dog with slight pressure (Fink, 1989).

Carpet Sample Erase

Instructor draws shape, number, letter, or picture on carpet sample with soft chalk. After children guess, one child erases mark with hands or feet (Fink, 1989).

Back Chalkboard

Instructor draws a shape on back of child with finger. Child guesses and then instructor erases. Try it with a row of children. The person in the back starts drawing, and the next child then draws the same shape on the next child's back (Fink, 1989).

Mat Sandwich

A group of children lie on a large mat. An additional mat is placed over the children with heads protruding to make a sandwich. A child is chosen to roll over sandwich pretending to be the condiments. Do not force participation with this activity (Fink, 1989).

Painters

Children pretend to paint themselves with soft paintbrushes. Paint fingers! Paint on a beard or freckles (Fink, 1989).

Feeley-Meeley

Child feels in box and guesses object before bringing it out. If child guesses wrong, object goes back into box. Use such objects as toothbrush, pencil, pen, sponge, key, coin, comb, spoon (Fink, 1989).

Look and Feel

Child picks an object out of a box with one hand and looks at it. With the other hand, child reaches into another box without looking and searches for similar object (Have two of each object: one in open box and one in hidden box, such as cars, blocks, crayons, etc.).

Object Search

Children find various objects in popcorn or sand (tiny dinosaurs, bears, seashells, etc.).

We Waded in the Water

Children sing the following song and pat the body part when it is mentioned in the song. Sing to the tune of *The Battle Hymn of the Republic*.

*We waded in the water, and we got our feet all wet
We waded in the water, and we got our feet all wet
We waded in the water, and we got our feet all wet
But we didn't get our (Clap, Clap) wet (Clap) yet.*

Substitute other body parts such as: ankles, knees, hips, elbows, hands, etc. (Bissell, Fisher, Owens, & Polcyn, 1988).

Other tactile or touch activities that can be incorporated throughout the day include: fingerpainting, shaving cream, chalk, or playdo.

Motor Planning Activities

The purpose of motor planning activities is to promote the child to plan and execute new motor tasks. These activities should be adapted to fit the needs of the child so an appropriate level of success can be met.

Center Stride Ball

The children form a circle standing with their feet apart and touching the feet of those on both sides. Each child attempts to roll ball through legs of another child and blocks the ball being rolled to them with hands. The children attempt to complete the game without allowing the ball to go between their legs (Bissell, Fisher, Owens, & Polcyn, 1988).

Throw and Jump

The child stands on a chair and throws a newspaper section to the floor, jumps down, and lands on it for three opportunities (Sher, 1992).

Jimmy Crack Corn

Children form circle and sing and do motions to the song.

Jimmy crack corn and I don't care

Jimmy crack corn and I don't care

Jimmy crack corn and I don't care

My master's gone away.

Verses:

Hop on one foot and I don't care...

Touch your toes and I don't care...

Shake your hands and I don't care...

Go in circles and I don't care...

(Bissell, Fisher, Owens, & Polcyn, 1988).

Kanga Ball

Children are divided into groups of three. Two of the children sit 10-15 feet apart facing one another with legs apart. The third child stands between the other two children with legs apart. The seated children roll a small ball back and forth between the middle child's legs. After six successful rolls, the children change places. For variations, the child in the middle attempts to jump a half-turn while the ball is being rolled. Also, more children may be asked to stand in the center (Bissell, Fisher, Owens, Polcyn, 1988).

Pulley

Child will pull on 15 foot rope held by two instructors to propel scooter, while on scooterboard. Attempt sitting up or lying on stomach (Fink, 1989).

Follow the Leader

Children imitate postures. Include bending sideways, forwards, backwards, at waist. Swing arms, circle arms, deep knee bends.

Feet Ball

Children sit on floor in circle. One child rolls a playground ball to another using both feet. Say the name of person the ball is being rolled to (Fink, 1989).

Push Piggy to Market

Child pushes a beanbag along a path using a yardstick given 3 opportunities (Fink, 1989).

Growing Wall

Instructor lays half gallon milk cartons in a row like a miniature wall. The child runs and leaps over them. Keep adding milk cartons to wall, increasing its height (Sher, 1989).

Ping Pong Blow

Child is given a ping pong ball and attempts to blow it along a three foot path while in an all fours position. Give the child three opportunities (Fink, 1989).

Animal Charades

Instructor puts animal pictures in a shoebox. Child chooses picture and then attempts to imitate how that animal moves. Other children guess the animal and then all children attempt to imitate.

Jumping Game

Instructor lays out a string path of two parallel ropes a short distance apart. Have the child start with feet close together inside the rope path, then jump, landing with feet apart on outside of rope path. Do a series of jumps along the path, alternating open and closed positions (Sher, 1992).

Vestibular Input

The goal of vestibular activities is to encourage better movement and balance.

Wheelbarrow

The child's hands are on the floor and the teacher holds child's legs and helps the child go forward. This is fun to do as a relay.

Scooter board bowling

Child is placed on scooter board on stomach and is urged to raise head and legs. The child pushes self to blocks and knocks them down with hands for two opportunities.

Train

Child sits on scooter board and holds on to hula hoop. Another child forms a train behind child and put hands on waist of the first child. Instructor holds hula hoop and pulls children on a path.

Mini-Trampoline

Child jumps on mini-trampoline for one minute focusing on one object. Have child tell what he sees.

Mummies

Players wrap each other up in toilet paper so arms are at side. When mummies are wrapped, stage a jumping race. Have mummies jump around by themselves.

Ramp

Instructor removes one of the braces from one end of the balance beam so it forms a ramp. Child walks up and down ramp having assistance from instructor if needed (Sher, 1992).

Balance Beam Pick Up

Child walks across balance beam and picks up small objects scattered along the beam: beanbags, poker chips, etc. for two opportunities (Sher, 1992).

Balance Race

Child balances beanbag or book on head and does relays with other children. Child can try to beat own time (Sher, 1992).

Parachute Play

Children stand around parachute and are given directions such as: walk around the parachute, sit on it, lift it up to your chin. Give commands like: When I call two children's names, cross under the parachute to the other person's place.

Proprioception activities

Proprioceptive activities provide awareness of one's body, especially from the joints and muscles.

Schmertz Ball

Instructor rolls up a couple of socks and tuck them into the toe of a knee sock. One by one players swing the sock creation around their heads, get go and see how far it can be thrown. Good outdoors game (Sher, 1992).

Balance Beam Carry

Child carries two buckets of water on balance beam and empties containers at the end of the beam (Sher, 1992).

Blanket Pull

One child sits on sturdy blanket and another pulls blanket along the floor. Give each child an opportunity to do the pulling (Sher, 1992).

Bucket Lift

Child sits in chair and lifts bucket filled with beanbags with legs. Have child dump beanbags using feet and legs only (Sher, 1992).

Bilateral Integration Activities

Bilateral integration activities promote coordination in both the left and right sides of the body. Activities such as skipping, jumping rope, and pedaling a bike encourage development in this area.

Johnny Pounds With One Hammer

Children sit on the floor and imitate the actions of the leader:

Johnny pounds with one hammer

One hammer, one hammer

Johnny pounds with one hammer

Now he pounds with two.

(Now he pounds with three.)

The leader pounds the floor with a fist. With each increase in number, another part of the body is added, up to five body parts. The song ends with:

Johnny pounds with five hammers, Now he is all through.

(Bissell, Fisher, Owens, & Polcyn, 1988).

Kicking

Children kick a scrunched up newspaper ball, first with right leg, then the left leg. See how far they can kick. Give each child two opportunities on each foot (Sher, 1992).

Beat the Drum

Children sit in a circle. One child sits in the middle and holds a stick in each hand and beats a rhythm on the drum while children around the circle pass object. When rhythm is finished, child with object in hand goes to the middle.

Visual Perception Activities

The purpose of these activities is to promote better eye-hand and eye-foot coordination and to contribute to the ability of understanding spatial relationships.

Upside Down Roll

Instructor scrunches up newspaper and wraps with tape. Partners stand backwards to each other, bend at waist, and toss paper ball to each other between their legs (Sher, 1992).

Target Soccer

Instructor places three empty two-liter bottles evenly spaced two feet behind the target area. The children line up fifteen feet from the center of the target area. One child plays the goalie and stand in the target area and stops the ball from hitting the target area using feet only. Also the child may not step out of taped boundary (Bissell, Fisher, Owens, & Polcyn, 1988).

Bean Bag in a Basket

Children form a large circle around a container. Each child holds a bean bag and moves around the circle by skipping, jumping, hopping, etc. On command, child stops and throws beanbag. Children collect bean bag and tries again. For variation, change the size or distance of the container (Bissell, Fisher, Owens, & Polcyn, 1988).

Hoop Ball

Two children hold a hula hoop while two other children throw a ball back and forth to each other through the hoop (Sher, 1992).

Building Bigger Towers

Children sit in a circle, each with 12-15 blocks. Each child builds tall tower, then finds partner to take down towers and build a bigger tower together (Werder & Bruininks, 1988).

Bowling

Instructor sets soft drink cans in a pyramid shape and has child throw a ball or beanbag to knock them over. Have the child count how many were knocked down.

Tong Pick Up

Child uses tongs to pick up cotton balls or other object and place in a bottle with a small hole at the top.

Bubbles

Children make bubbles and have child clap them between hands.

One group of children blow the bubbles and the other group attempts to clap them between hands. Switch groups after five minutes.

Line Throwing

Children line up behind each other, facing a pitcher. The pitcher throws the ball to the first person in line. This player catches the ball, runs to the "pitcher's mound " and gets ready to toss ball to the next player in line. The pitcher goes to the end of the line (Sher, 1992).

Step-overs

Instructor uses several objects of varying heights and widths (plastic milk jug, shoe box, block, etc.) and places random distances apart. Direct child to step over object without touching it (Sher, 1992).

Block Structures

Instructor builds a structure with blocks. Have child copy the structure with other blocks. Good to use in a center.

Chalkboard Mazes

Instructor makes chalk mazes on chalkboard and have child follow mazes with a toy car. Good to use in a center.

CHAPTER V SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Sensory integration is a neurological process that determines one's ability to take in information through the senses, organize the information, and then make appropriate responses in one's environment. Teachers are concerned with helping children use the information they receive and yet often neglect the aspect that children receive information through the tactile, vestibular, and proprioceptive systems. These systems as well as the visual and auditory systems contribute to the child's ability to learn and develop smooth motor output.

For most children, sensory integration develops in the course of natural childhood activities. But for some, sensory integration does not develop as efficiently as it should. Children who are unable to process and use the information they receive in comparison to their peers often have a sensory integrative disorder. Children with sensory integrative disorders face ongoing problems as a number of learning, development, or behavior problems may develop.

The purpose of this study was to develop a handbook of sensorimotor activities for use by preschool teachers.

The writer reviewed sources such as journals, books, and handbooks on sensory integration. The handbook was critiqued by an occupational therapist and occupational therapist assistant.

The handbook provides the teacher with the following information: introduction to sensory integration, sensory modalities related to sensory integration, sensory integration dysfunctions, reasons for using sensorimotor activities in the preschool classroom, and the handbook.

Conclusions

Preschool teachers need to provide sensorimotor experiences to help children develop an organized manner of looking at the world, since it is on this foundation that they build more complicated skills. The purpose of these experiences is to stimulate the senses, develop the ability to remember, to perceive, to motor plan, and to facilitate awareness.

When sensorimotor activities are promoted in the preschool classroom, children will interact and learn from their environment. This increased awareness will allow them to move more effectively and give them the basis to build more complicated skills.

Recommendations

The writer recommends the handbook be used with preschool children. The writer concludes that the activities would be fun and benefit all children, not just those with sensory integrative dysfunctions.

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