Learning Through the Senses: Whole Body Learning in the Classroom

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Objectives Of This Presentation

- Overview of Sensory Systems
- Typical and Atypical Sensory Processing Patterns and Behaviors
- What Can We Do?
  - Co-regulation
  - Infuse activities into the curriculum
  - Adapt the environment
  - Activity Ideas for all lessons

How learning through the senses applies to education based on what we know now...

- Filling in gaps of background knowledge
  - Help feel the whole experience (sensory motor)

- Bottom up regulation

- Emotional connections make things meaningful
  - Perception and emotional experience

- Use of the whole body to enhance integration
  - ASD is a disorder of integration

- 21st century – connectivity and self direction and adaptability --- need it within self first to then apply outward
Systems of Individual Differences

Central Nervous System

• Senses
  • Sight
  • Sound
  • Taste
  • Touch
  • Proprioception
  • Vestibular
  • Smell
  • Interoception

“The Real World”

Senses: Sensory filter = perception

Brain: Cognition of information

“The Real World”

OR

The REAL World: Transformed Mental Image
Vestibular Sense

- Movement of body through space
- Position of our head in relation to surface
- Balance
- Comes from inner ear

Proprioceptive Sense

- Information about body position/body awareness
- Information about movement of body parts
- Comes from joints (stretching muscles)

Tactile Sense

- Touch
- Contact with skin
- Generally light touch of skin
**Visual Sense**

- Sight and seeing
- Spatial awareness
  - Body in space
  - Relation of objects to self
  - Logical reasoning
  - Representational thought
  - Boundaries of others
  - Purposeful movement in space

**Auditory Sense**

- Hearing
- Auditory Processing of sound
  - Speed of processing
  - Discrimination of sounds

**Interconnectivity**

- All of the senses work together to provide a complete understanding and comprehension of learning experience
Hyperresponsive

- Overly sensitive
  - Sensory defensiveness

- Fearful and **avoidant** of stimuli and/or activity
Hyporesponsive

- Under sensitivity
  - Sensation-seeking behaviors

Combination

- Fluctuating responsivity is characterized by fluctuations and rapid shifts from greater to lesser sensory modulation within a short period of time

(Degangi, G., 2005)

How do I know if my child is not processing "The Real World" as "The Real World"?
Difficulty Processing Vestibular Input

“Behaviors”
- Very difficult not to or to move around, school and work tasks impacted
- Safety concerns as will take risks to get input – climbing furniture
- Disorganized
- Discomfort with heights, walking up stairs/elevators, hiking
- Loves to be upside down
- Difficulty shifting attention from board to desk
- Rocks his/her head or body
- Loves to spin

Difficulty Processing Proprioception

“Behaviors”
- Seems to get stuck when playing with toys – difficulty sequencing movements within activities
- Inability to position oneself appropriately – slumps over, trouble sitting still
- Difficulty in dressing – cannot figure out where body goes into clothing
- Frequently falling and bumping into things
- Loves to jump and stomp
- Walks on tip toes
- Loves hugs/squeezes
- Pushes parts of body against objects and/or others – pushes head against yours, pushes chin
- Pinches, hits, and/or bites
- Stays away from crowds
- Hides in small spaces - closets

Difficulty Processing Touch

“Behaviors”
- Difficulty dressing – may take clothes off frequently throughout day
- Difficulty with toileting, hand washing
- Textural challenges while eating – picky eater
- Does not participate in messy activities – glue, playdoh, art activities
- Trouble with fine motor skills, writing, grasping, feeding, talking
- Hates hand holding
- Uncomfortable walking in a crowd or sitting close to others in circle
Visual Differences

“Behaviors”
- Lines toys up
- Walks in a line with eyes to the side (scanning)
- May spit (to determine distance of objects)
- May hit when attempting to touch or reach (misjudge distance)
- Difficulty with spatial relationships – walking down stairs or on inclines/declines
- Safety risk when not seeing edges – falls frequently

Auditory Differences

“Behaviors”
- Difficulty localizing to your voice or sounds in environment
- Holds ears
- Mumbles or sings to self
- Answers questions or follows directions moments to minutes after “hearing” them
- Does not answer when name is called
- Repeats phrases with words strung together
- Has trouble singing circle songs in unison with class
- Listens to the same sounds over and over – repeats the beginning notes of a song on a CD

What can we do about it?
Using your relationship, create an environment that supports the sensory profile…
What we can do...

- Co-regulate
- Infuse Sensory Activities into Curriculum
- Adapt Environment & Provide Opportunity
- Activity Ideas

Use Of Affect

- **Overcome over-excitability**
  - Calmly and slowly join the child in their excitement and gradually slow your pace using extended sounds and movements until he is in rhythm with you
  - Match them where they are and then calm down
  - "woah, woah, woah... phew" taking a deep breath

- **Overcome under-arousal**
  - Make experiences more interesting & be a BIGGER toy, introduce something new, use large gestures and movements and exaggerated sounds and facial expressions

Use of Senses

Use the child’s *individual sensory profile* to draw him into shared attention

- Use a particular sense
  - Appeal to those senses that seem to help him become calm and alert
  - Visual experiences for the child who especially enjoys looking
  - Movement activities for students who are engaged by moving

- Be sensitive to your child’s reactions
  - Comment when you’ve done too much
  - "Sorry, that was too fast."
Encourage Interconnectivity

- **Harness all available senses**
  - Pair sounds with visual cues and gestures
  - Join in with the their sounds and pair those with their movements
  - Entice them to move with the back and forth rhythm that is created
  - Incorporate touch and deep touch into interactions

Top Down Regulation

- **Challenge to think**
  - Engage in challenging topics

- **Help to organize thoughts**

- **Think about your use and amount of language**

Coregulation involves everyone!

- **Be aware of how your regulation and engagement impacts that of the students in the classroom**

- **Think SHARED ATTENTION**
  - Who should we all be sharing our attention with
  - The students will follow your eye gaze and body language
  - "Exploration, information gathering, spatial orientation, problem solving, and play are all enhanced by shared reference points and joint attention." Wieder & Wachs, 2012
Infuse Sensory Activities into Curriculum

- Sensory Diet Activities within lesson
- Use of sensory input to enhance comprehension

Sensory Activities within Lessons

#1 Shaving Cream Sentence

- "Aidan shaving cream"
#2 Jump Word

- "jump word"

#3 Making a Pizza

- "sensory pizza"

#4 Enhancing Comprehension

- "Digestive System"
#5 Water Cycle Introduction

"water cycle lake"

#6 Water cycle Experience

"water cycle course"

#7 Dancing Quantities

"Dance More Less"
Environmental Adaptations

Vestibular

Movement into transition routine
Placement of materials at various heights

Chair Cushion
Rocking Chair
Spinning Chair

Environmental Adaptations

Proprioception

Slant Board
Weighted Bathroom Pass
Weighted Blanket
Weighted Vest

Additional Environmental Adaptations

Proprioception

Weighted lap buddies
Theraband on chairs
Pencil grips and raised paper
## Environmental Adaptations
### Tactile
- Positioning of sensitive students
- Circle time mats, line placement
- Have scrub brushes available for hand washing routine
- Allow variance in dress code
- Preparation for tactile experiences

### Visual
- Visual Schedule
- Slant Board
- Quiet Space
- Picture outlining where desk items go
- Decrease visual distractions
- hats
- Lighting consideration

### Auditory
- Limit verbal directions
  - provide visuals/gestures
- Reduce auditory distractions
- Position of students
- Prepare for auditory experiences
- headphones
Activity Ideas for you

Classroom Sensory Diet

Includes:
1 movement activity
1 heavy work activity
1 deep pressure activity

Vestibular Activities

- Movement between activities, circular and upside down most poignant
- Reaching up and down
- Wheelbarrow walk each other
- Spinning
Proprioceptive Activities

- Jumping
- Running
- Squeezes
- Tug of war
- Trampoline jumping
- Kicking
- Crash Pad
- Body Tracing
- Pushing desks and chairs

Tactile Activities

- Shaving Cream pictures
- Finger Painting
- Find toys in Playdoh or items in putty
- Search for items in rice, oatmeal, macaroni, beans, etc.
- Bake
- Dress up
- Walk in the grass/sand without shoes

Visual Activities

- Scavenger Hunt
- Word/Picture find
- Miniature Golf
- Fishing (fake with pole and magnetic fish)
- Flashlight tag
Auditory

- Listen to music
- Musical Chairs
- Combine music and movement
- Match sounds

Remember...

- Join your child
- They know what they need
- Look for subtle cues
- Be playful
- Slowly introduce sensory challenges

Resources

Books
- Sensory Integration: Applying Clinical Reasoning to Practice with Diverse Populations by Rosanna C. Schaaf & Susanna Smith
- Out of Sync Child by Carol Kranowitz
- Out of Sync Child Has Fun by Carol Kranowitz
- Thinking Goes to School by Dr. Harry Wachs
- Sensory Integration: A Guide for Preschool Teachers by Christy Isbell & Rebecca Isham
- Answers to Questions Teachers Ask About Sensory Integration by Jane Koomer, Carol Kranowitz & Stacy Silicke
- The Well-Balanced Child: Movement and Early Learning by Sally Goddard Blythe
- Physical Activities for Improving Children's Learning and Behavior by Blythe Sni Cheatum & Alison Hammonds

Websites
- www.spdfoundation.com
- www.sensory-processing-disorder.com
- www.spsdtor.org
- www.sensoryprocessing.com
- www.sds.com
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