

Applying of Sensory Integration Framework

Dr.paed. Aivars Kaupužs



RTA sensory room

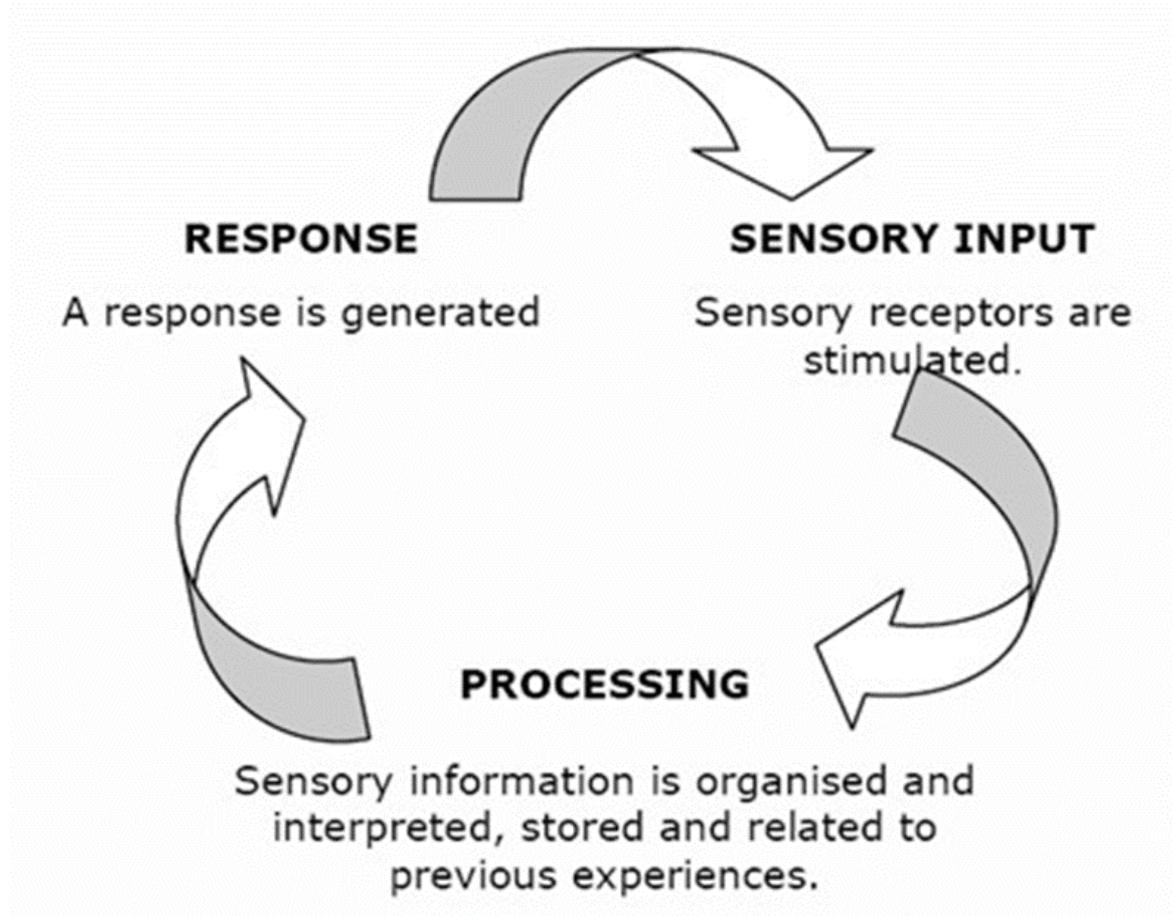


Sensory systems

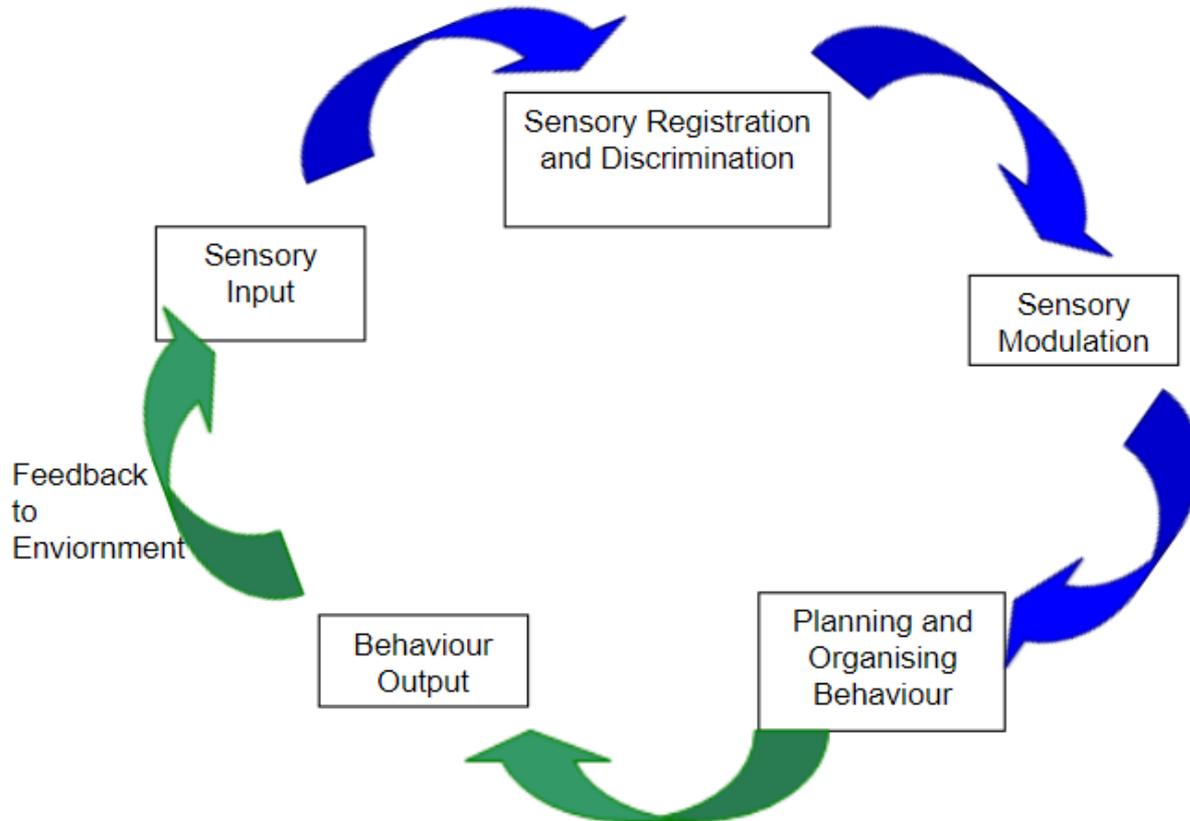
- Far Senses
 - Hearing, sight, smell, taste
- Near Senses
 - Tactile
 - Vestibular
 - Proprioceptive



SENSORY PROCESSING



SENSORY PROCESSING

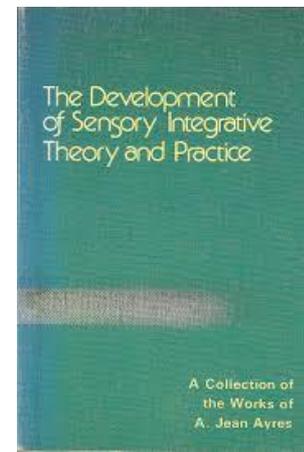
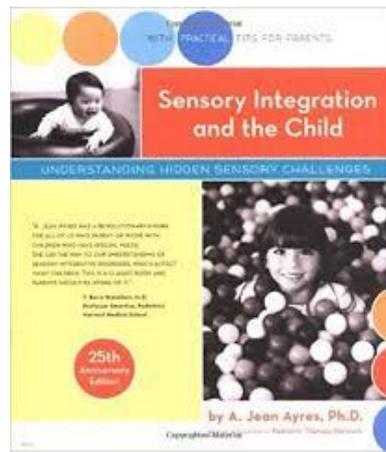
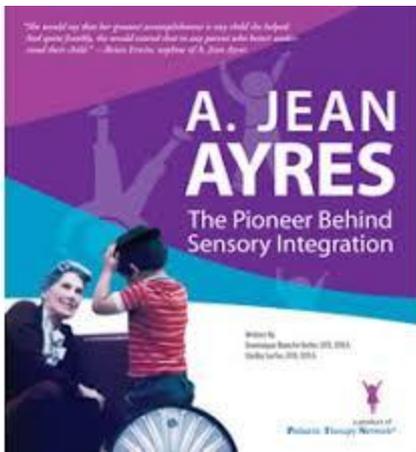


Anna Jean Ayres 1920-1988

occupational therapist, educational psychologist



- first identified sensory integrative dysfunction
- made discovery that such children had neural disorder resulting in inefficient organization of sensory input received by nervous system
- developed diagnostic tools for identifying the disorder and proposed therapeutic approach



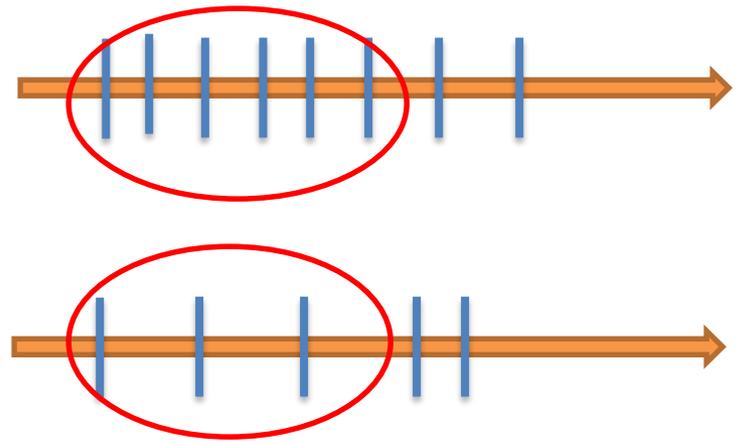
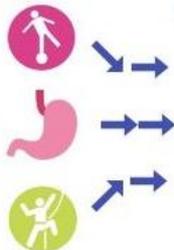
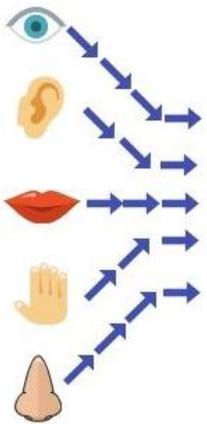
Sensory integration

- "**Sensory integration** is the neurological process of organizing the information we get from our bodies and from the world around us for use in daily life"
- According to Dr. Ayres, "Over 80% of the nervous system is involved in processing or organizing sensory input, and thus the brain is primarily a *sensory processing machine*"
- The brain modulates this input which in turn guides our activity level. Activity may be mental, physical or emotional

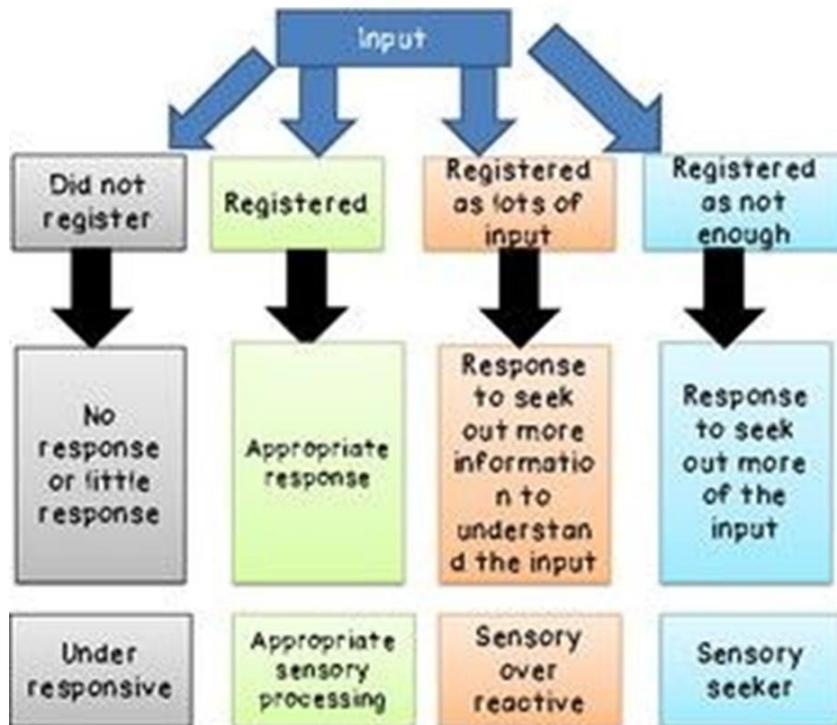
Sensory Processing Disorder

- An irregularity or disorder in brain function that makes it difficult to integrate sensory input effectively
- Sensory integrative dysfunction may be present in motor, learning, social/emotional, speech/language or attention disorders
- Approximately 16% of the childhood population could experienced SPD
- In children with autism spectrum disorders even higher-at least 80%

(SPD Foundation)



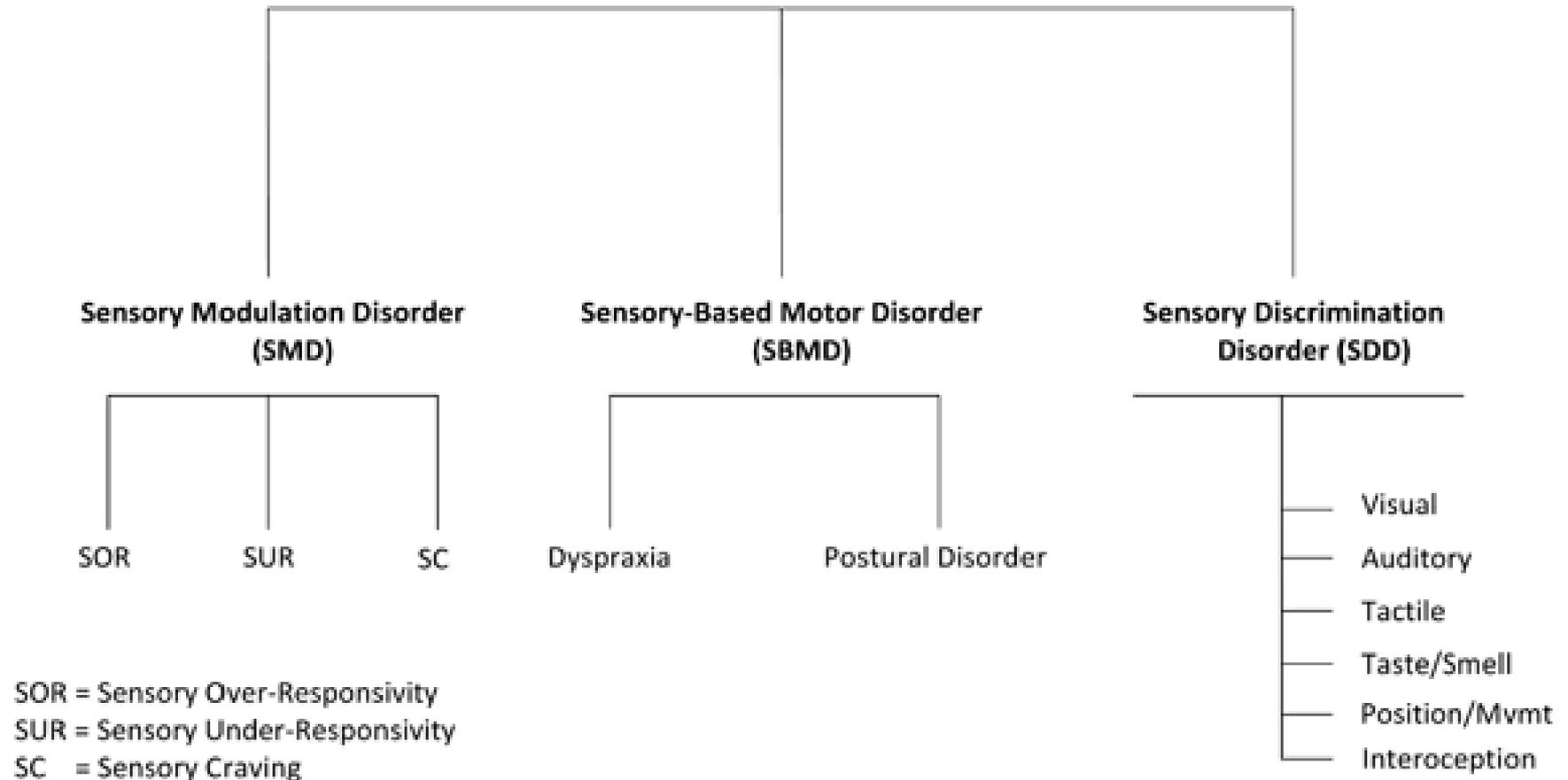
INPUT MODULATION



Sensory Processing Disorder

- Sensory modulation-
 - Unable to regulate the nervous system to meet the demands of the environment
 - Most commonly seen of the disorders
 - Bombarded by sensory input all the time
 - Need to know what to do about it and how to respond to it
 - Cannot match the response (behavior) to the input

Sensory Processing Disorder (SPD)



Sensory threshold	Self-regulation	
	PASSIVE ←	→ ACTIVE
<p><i>HIGH</i></p>  <p><i>LOW</i></p>	<p>poor registration</p> <ul style="list-style-type: none"> • <i>missing stimuli</i> • <i>responding slowly</i> 	<p>sensory seeking</p> <ul style="list-style-type: none"> • <i>persuit of stimuli</i> • <i>associated with intelligence and creativity</i>
	<ul style="list-style-type: none"> • <i>distractability</i> • <i>discomfort with sensory stimuli</i> <p>sensory sensitivity</p>	<ul style="list-style-type: none"> • <i>acting to reduce/prevent exposure to stimuli</i> • <i>efforts to make exposure more predictable</i> <p>sensory avoiding</p>

EARLY SIGNS OF SENSORY DISORDERS

Sign of Sensory Processing Disorder

Sensory Modulation Disorder

Definition:

A problem in regulating responses to sensory inputs resulting in withdrawal or strong negative responses to sensations that do not usually bother others.

Common Signs

- Easily distracted by noises
- Overly sensitive to sounds
- Dislikes nail/ hair cutting
- Dislikes clothing of certain textures/ fits/ or styles
- Upset about seams in socks
- Difficult time falling or staying asleep
- Reacts defensively to tastes/ textures of food
- Easily distracted by visual stimuli

Sensory Discrimination Disorder

Definition:

A problem in recognizing/ interpreting differences or similarities in qualities of stimuli.

Common Signs

- Jumps a lot on beds
- Bumps or pushes others
- Grasps objects too tightly or uses too much force
- Frequently drops things or knocks things over
- Mouths, licks, chews, or sucks on non-food items
- Craves movement, e.g. likes to spin self around
- Afraid of heights/ swings or slides
- Has poor balance

Postural-Ocular Disorder

Definition:

A problem with control of posture or quality of movements seen in low muscle tone or joint instability and/ or poor functional use of vision. It is often seen with vestibular and proprioceptive problems

Common Signs

- Seems weaker than other children
- Fatigues easily
- Frequently moves in and out of seat
- Slumps while sitting
- Difficulty making eye contact/ tracking with the eyes, e.g. reading
- Falls and tumbles frequently
- Feels heavier than anticipated when lifted
- Has flat feet

Dyspraxia

Definition:

A problem with planning, sequencing & executing unfamiliar actions resulting in awkward & poorly coordinated motor skills typically seen with a sensory processing deficit. It is usually seen with difficulty doing new activities or those that are done infrequently. (May-Benson, Teasdale, & Koomar, 2006)

Common Signs

- Problems with daily life tasks like dressing or using utensils
- Eats in a sloppy manner
- Difficulty following multistep directions
- Strong desire for sameness or routines
- Has an awkward pencil grasp
- Has poor handwriting
- Dislikes or reluctant to participate in sports

Sensory modulation disorder

Sensory Over-Responsivity



- becomes fearful, anxious or aggressive with light or unexpected touch
- appears fearful of, or avoids standing in close proximity to other people or peers (especially in lines)
- complains about having hair brushed; may be very picky about using a particular brush
- avoids touching certain textures of material (blankets, rugs, stuffed animals)
- refuses to wear new or stiff clothes, clothes with rough textures, turtlenecks, jeans, hats, or belts, etc.
- will be distressed by dirty hands and want to wipe or wash them frequently

Sensory modulation disorder

Under-Responsivity



- may not be aware that hands or face are dirty or feel his/her nose running
- may be self-abusive; pinching, biting, or banging his own head
- frequently hurts other children or pets while playing
- mouths objects excessively
- could spin for hours and never appear to be dizzy
- has a preference and craving for excessively spicy, sweet, sour, or salty foods

Sensory modulation disorder

Sensory-Craving



The "sensory seekers" tend to be constantly moving, crashing, bumping, jumping
They may "need" to touch everything

Do not understand what is "their space" vs. "other's space"
They become disorganized with additional stimulation

Sensory-Based Motor Disorder

- **Postural Disorder**

- often sits in a "W sit" position on the floor to stabilize body
- may have never crawled as a baby
- has poor body awareness; bumps into things, knocks things over, trips, and/or appears clumsy



- **Dyspraxia/Motor Planning Problems**

- difficulty simultaneously lifting head, arms, and legs off the floor while lying on stomach
- difficulty turning doorknobs, handles, opening and closing items
- seems to be unsure about how to move body during movement, for example, stepping over something



Sensory Discrimination Disorder

- Do I hear “cat” or “cap”?
- Do I see a “P” or a “B”?
- Do I feel a 20 or 50 cents in my pocket?
- Am I falling to the side or backwards?

Protective Responses

- “Sensory defensiveness is simply the over activation of our protective senses”

(Wilbarger & Wilbarger, 1991)

- Fight
- Fright
- Freeze
- “If the body does not find a way to regulate itself, a state of chronic stress results” (Affleck et al., 1984)

SPD Treatment Goals

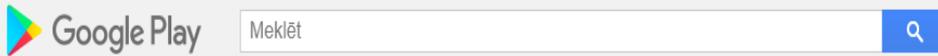
- Primary Goal: Improve the way the brain processes
- Expected Outcomes of Sensory Integration Intervention:
 - Regulation of arousal states and attention
 - Development of body awareness;
 - Postural-motor and bilateral integration of function;
 - Fine and Gross motor skills;
 - Visual-auditory aspects of learning ;
 - Receptive and expressive language;
 - Psychosocial functions (ex: self-concept, self-efficacy);
 - Independence in ADLs

Guide to Sensory Integration Intervention

- **No set protocol** or techniques are available
- The ‘just right challenge’ of balancing abilities and challenges
- “Learn how to learn”
- Integration of vestibular, proprioceptive and tactile stimulation
- Emphasize a bottom-up approach
- Be child centered and fun!

OVER RESPONSIVITY

Visual schedules



Visual Schedule

Wizard Solutions Inc Izglītība Izglītība

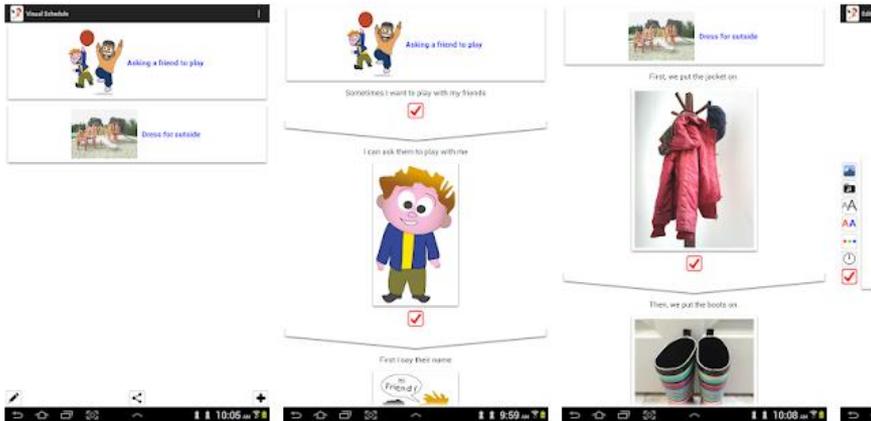
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PEGI 3 9-12 gadu vecumam

Piedāvā pirkumus lietotnē

Šī lietotne ir saderīga ar visām jūsu ierīcēm.

Instalēta



Josh's Schedule		Teacher	Assistant
B Block Room 105	Stagecraft	Mr. Collett	Mr. McBride
Wednesday Room 201	Advisory 34	Mrs. Fairley	Mrs. Jones
C Block Room 116	Reading Skills	Mrs. Mercier	Mrs. Alby
Lunch	Cafeteria		Mrs. Miller
D Block Room 223	Family Management	Mrs. Catherwoy	Mrs. Cridoe
E Block Room 126	Foods	Mrs. Catherwoy	Mrs. Jones

Doing By Algorithms

Breakfast Parfait

Eat.

Ingredients

- ½ cup yogurt
- honey
- blueberries (or fruit of choice)
- Cheerios (or cereal/granola of choice)

You will also need:

- cups
- measuring cups
- spoon

Measure ½ cup of yogurt and add to cup. Add layer of honey...

1. Get cup.	2. Get yogurt.	3. Open yogurt.	4. Get ½ cup measuring cup.	5. Measure yogurt.
6. Add yogurt to cup.	7. Get honey.	8. Add layer of honey to cup.	9. Get blueberries.	10. Add blueberries on top of honey.
11. Get cereal.	12. Open cereal.	13. Get ¼ cup measuring cup.	14. Measure cereal.	15. Add cereal to the top.



wash hands



turn on



soap



wash hands



turn off



dry hands



Taiming



Google Play

Meklēt

Lietotnes

Kategorijas

Sākums

Populārākās lietotnes

Jaunumi

Manas lietotnes

Iepirkties

Spēles

Ģimenei

Redaktora izvēle

Konts

Maksājumu veidi

Mani abonementi

Izmantot

Mans vēlmju saraksts

Manas darbības pakalpojumā Play

Ceļvedis vecākiem

Kids Timer

Skywise Riki

★★★★★ 1710

PEGI 3

Ietver reklāmas

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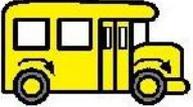
Pievienot vēlmju sarakstam

Instalēt



Rythm

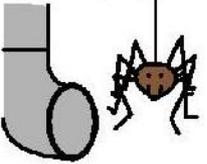
Wheels on the Bus



Old MacDonald



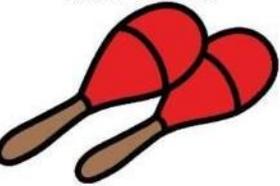
Itsy Bitsy Spider



If You're Happy



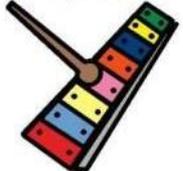
Maracas



Drum



Xylophone



Bells



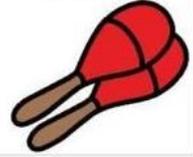
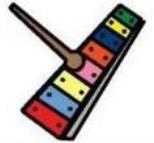








 What instrument do you want to play today?

<p>Maracas</p> 	<p>Drum</p> 	<p>Xylophone</p> 
<p>Bells</p> 	<p>Rhythm Sticks</p> 	<p>Tambourine</p> 








 How do you want to sing today?

<p>Sing Fast</p> 	<p>Sing Slow</p> 
<p>Sing Loud</p> 	<p>Sing Quietly</p> 
<p>Sing High</p> 	<p>Sing Low</p> 

“Snoezelen” or Multisensory environment concept

- “Find a balance between relaxation and activity within . . . a safe, adapted environment, supported by a facilitator,” (Lotan & Gold, 2009)
- “The essence of the Snoezelen approach is to allow the individual the time, space and opportunity to enjoy the environment at their own pace, free from the expectations of others.” (Kewin, 1994)

Relaxation Response

- Dr. Herbert Benson (1974) asserted that Relaxation Response (RR) could reduce the state of fight or flight
- The RR is a physiological response characterized as generalized decreased Sympathetic nervous system activity
- Four basic elements are usually necessary for RR:
 1. Sustained focus on a repetitive mental activity or stimuli
 2. A carefree, passive attitude
 3. Decreased muscle tone
 4. A quiet environment

(Benson, 1974)

Neuroplasticity

- Neuroplasticity is the way the neurons of the brain change in structure and function as a result of the type and amount of incoming stimulation, including cognitive, behavioral, and sensory experiences

(Kleim & Jones, 2008)

Conclusions

- Verheul and Hulsegge (1978) asserts that people interact with multisensory environment by depending on their senses in a non-directive, exploratory manner
- Multisensory interventions should be a person-centered. That is “an orientation that honors the desires and priorities of clients in designing and implementing interventions” (AOTA, 2008)
- Professionals should utilize a dynamic and holistic approach to treatment; they do not prescribe treatment
- Evidence suggests that the multisensory intervention process should be individualized, intensive, and comprehensive, and that it should facilitate active engagement of the individual (Tomchek & Case-Smith, 2009)
- It is important to note that there is still limited research to support the use and efficacy of Multisensory interventions that provide the huge opportunities for further researches

References

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<http://www.specialeducationadvisor.com/five-practical-sensory-strategies-for-the-classroom/>

My Trip to the Dentist Social story

<https://www.youtube.com/watch?v=2mNYubCfXbk>

Bill Nason, MS, LLP discusses tools that help children on the spectrum feel safe, accepted and competent <http://www.facebook.com/autismdiscussionpage>

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