






Self-Regulation in the Classroom using Sensory Strategies

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Ph.D. in Health and Rehabilitation Sciences 1

Objectives

1. Describe the relationship between self-regulation, learning, and behavior.
2. Discuss how collaborative approaches using sensory strategies can contribute to self regulation.
3. Describe occupational therapist-teacher collaborative strategies for implementing and documenting sensory-based self regulation strategies.



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Self Regulation

Controlling one's emotions
Organizing one's work
Self management of emotional and behavioral responses particular to the school environment.

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Self Regulation

Concerns all students including those with and without identified mental health concerns.

Self Regulation difficulty can be a result of multiple issues such as immaturity, trauma, limited experience, having adequate rest or nutrition, an identified disability or sensory processing difficulty.



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Difficulty with Self Regulation impacts ability to:

1. Engage in learning activities
2. Maintain social relationships
3. Maintain feelings of well-being


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Engaging in On-Task versus Off-Task learning behavior

1. Distracted by internal or environmental stimuli
2. Distracted by level of arousal, attention, daydreaming
3. Distracted by level of understanding of materials or directions
4. Distracted by personal agenda (e.g. social)

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Impacts on Social Relationships

1. **Awareness of peers to initiate or respond to peer interaction.**
2. **Inappropriate activity level to engage with peers.**
3. **Appropriate mutual engagement in activities.**
4. **Aggression with or withdrawal from peers.**

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Sensory Strategies

developed by occupational therapists have been shown to be effective in supporting self regulation. (*Blackwell et al, 2014; Lin et al 2014; Polatajko & Cantin, 2010; Ponitz et al, 2009; Worthen , 2010*)

Occupational therapist routines are driven by the theory of sensory integration.

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Sensory Integration = Sensory Processing

A theory that describes how the brain organizes sensory information coming from the body and environment, makes sense of it, and then makes it available for effective use for self regulation and interaction with others and the environment.

Part of Normal Development

A. J. Ayres: Sensory Integration


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Sensory Processing: What does this mean?

Sensory signals from the body (e.g. what we feel) and the environment (e.g. what we hear/see) go to the brain. The brain organizes the sensory information and then makes sense of it in order to tell the body what to do.

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- Difficulty may be Influenced by:
 - Environmental Factors
 - Structural Factors
 - Atypical Neurological Processing

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- **Types of Sensory Processing**
- **Sensory Modulation:**
 - **Regulation of arousal and affect**
- **Sensory Discrimination:**
 - Discrimination of sensory experiences
- **Sensory-Based Motor Disorders:**
 - Directing motor behaviors

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- Behavior can be influenced by sensory experiences.
- Some experiences are calming and others are alerting.
- The goal is to have the student at the optimal level of arousal/affect for the school task.

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- **What does it look like in the classroom?**
- Kids with low arousal.
- Kids with high arousal.
- Kids who are sensory seeking.

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Low Arousal

- Decreased awareness of what is going on in the classroom and expectations.
- May be low arousal and/or low affect
- Inadequate attention for the task
- 'Spacing out'
- May have unusually high or low activity level
- Difficulty getting organized to begin or sustain work on tasks

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High Arousal



- Responses may vary by level of comfort.
- Easily disturbed by 'typical' experiences.
- Easily deteriorates into breakdown. (May last unusually long time for the situation).
- Inadequate attention for the task.
- Low frustration tolerance.
- May have unusually high activity level.
- Difficulty getting organized to begin or sustain work on tasks.

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Sensory Seeking

- Over-focus on any or all sensory experiences.
- May see mouthing or touching materials rather than engagement in productive activity.
- May see increased activity level.
- Touching everything.
- Always moving.
- May enjoy crashing (safety may be a concern).
- May actively seek out sensory experiences (rather than screen them out).

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- Students can use Sensory and Movement Activities to Aid in Self Regulation.
- Programs such as the ALERT program help the student to become self reflective about their readiness to interact and empower them to use strategies to bring them to an optimal level to focus and/or interact with others or materials.
- Williams, M.S., & Shellenberger, S. (1996). *How Does Your Engine Run*

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- Change the schedule to meet the child level of arousal.
- Provide enhanced or diminished sensory experiences in the selection of activities or materials.
- Provide sensory areas that allow the child to have the needed experiences in an adaptive way and help the child learn to use them.
- Help the child regulate arousal by using calming or alerting sensory experiences.

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Movement Qualities

- **Calming**
 - Linear
 - Slow
 - Rhythmic
 - Close to ground so can control movement
 - Self imposed
 - Stable position
- **Alerting**
 - Rotary
 - Fast
 - Irregular
 - Moving through space
 - Imposed by others
 - Off center position

Proprioceptive Qualities

- **Calming**
 - Joint compression/weight bearing
 - Slow stretch
 - Slow alternating push/pull
 - Heavy resistance (carrying/pushing heavy material)
- **Alerting**
 - Jarring or jerking
 - Jumping, crashing
 - Fast
 - Quick changes
 - Abrupt starts or stops
 - Imposed by others

Joints
Muscles

Touch Qualities

- **Calming**
 - Firm pressure (large body areas)
 - Tight wrapping (small enclosed spaces)
 - Static versus moving
 - Warm and/or smooth)
 - Anticipated
 - Familiar or self imposed
- **Alerting**
 - Light touch
 - Moving touch
 - Poking
 - Close to hair, face, belly, hands or feet
 - Cold and/or wet
 - Irregular shapes or textures
 - Imposed by others

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Teacher/Occupational Therapist Collaboration

Effective approaches are those that are incorporated into the classroom routine and environment.

Never one size fits all.

Requires collaborative partnerships between teaching staff and occupational therapist.

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What Is collaboration?

1. Equal partnership
2. Mutual Respect
3. Mutual Problem Solving
4. Equal Responsibility/ Accountability
5. Different Roles

Laura Idol: Collaborative Teams

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- **We must:**
- Reframe our understanding of sensory based behavior.
- Provide children with appropriate sensory experiences to promote self regulation, development, and learning.
- Alter the sensory based triggers to behavior.
- Modify the environment or materials to change the sensory demands.

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Occupational Therapist in Collaboration with Teachers

Assess:

1. Student's self regulation needs
2. Classroom environment
3. Schedule
4. Available materials

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Occupational Therapist in Collaboration with Teachers

1. Create student Curriculum
2. Set up Classroom environment and materials
3. Create an Accountability System
4. Train Students

Program is student self directed and adult monitored.

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Calming Space



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Calming Activities

1. Slow rocking chair
2. Under blanket/bean bag
3. Low lights
4. Soft movement
5. Squeeze ball/ binder clips
6. Sipping from water bottle
7. Books/ bag on lap

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Alerting Space



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Alerting Classroom Activities

1. Recess
2. Take a walk
3. Animal Walks
4. Get a drink
5. Change position
6. Move and sit cushion
7. Fast rocking chair

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Creating a Sensory Tool Box

• Weighted water bottle	• Fidgets
• Binder clips	• Spike balls
• Clay	• Textured toys
• Squeeze ball	• Crunchy foods
	• Clay
	• Bungie cord

Calming

Alerting

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Teacher /Occupational Therapy Collaboration

Can create environments where the students are empowered to engage in their own self regulation.

As students find approaches that work, they will use them. It puts them in control.

They also learn to prompt each other.

This can work across grades.

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Using efficient data collection strategies to measure effectiveness

1. Can be recorded by the student.
2. Can be a class activity.
3. Tier 3 interventions can be recorded by the adult.

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How is your engine running?

Too Low Just Right Too High

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Date	Too Low	Just Right	Too High
AC			
JE			
JG			
AM			
DR			
DW			

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Student	Too Low	Just Right	Too High

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Comments?
Questions?

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References

Bialer, D. S. & Miller, L. J. (2011). *No longer a secret: Unique common sense strategies for children with sensory or motor challenges.* Arlington TX: Sensory World.

Blackwell, A. L., Yeager, D. C., Mische-Lawson, L., Bird, R. J., & Cook, D. M. (2014). Teaching children self-regulation skills within the early childhood environment: A feasibility study. *Journal of Occupational Therapy School and Early Intervention*, 7, 204-224. doi:10.1080/19411243.2014.96601.3

Fedwa, A. L., & Erwin, H. E. (2011). Stability balls and students with attention and hyperactivity concerns: Implications for on-task and in-seat behavior. *American Journal of Occupational Therapy*, 65, 393-399. doi: 10.5014/ajot.2011.000554

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References


Hofer, M. (2007). Goal conflicts and self regulation: A new look at pupil's off-task behavior in the classroom. *Educational Research Review*, 2, 28-38. doi 10.1016/j.edurev.2007.02.002

Idol, L. Nevin, A., & Paolucci-Whitcomb, P. (2000). *Collaborative Consultation, 3rd edition.* Austin, TX: Pro-ed.

Kercood, S., Grskovic, J. A., Lee, D. L., & Emmert, S. (2007). The effects of fine motor movement and tactile stimulation on the math problem solving of students with attention problems. *Journal of Behavioral Education*, 16, 303-310. doi:10.1007/s10864-007-9042-1

Lin, H.Y., Lee, P., Chang, W.D., & Hong, F.Y. (2014). Effects of weighted vests on attention, impulse control, and on-task behavior in children with ADHD. *American Journal of Occupational Therapy*, 68, 149-158. doi: 10.5014/ajot.2014.009365

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References

Miller, L. J. (2014). *Sensational Kids: Hope and help for the child with sensory processing disorder, revised edition*. New York: Putnam Press.

Polatajko, H. J. & Cantin, N. (2010). Exploring the effectiveness on occupational therapy interventions, other than sensory integration approach, with children and adolescents experiencing difficulty processing and integrating sensory information. *American Journal of Occupational Therapy*, 64, 415-429. doi: 10.5014/ajot.2010.09072

Ponitz, C.C. McClelland, M.M., Matthews, J. S., & Morrison, F. J. (2009). A structured observation of behavioral self-regulation and its contribution to kindergarten outcomes, *Developmental Psychology*, 45,605-619.

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References

Reinson, Carol. (2012) A collaborative decision tree system for designing a sensory diet curriculum for children with autism in the classroom setting. *Journal of Occupational Therapy, Schools, & Early Intervention*, 5: 61-72.

Williams, M.S., & Shellenberger, S. (1996). *How Does Your Engine Run: A leader's guide to the Alert Program for self-regulation*. Albuquerque, NM: Therapy Works, Inc.

Worthen, E. (2010). Sensory-based interventions in the general education classroom: A critical appraisal of the topic. *Journal of Occupational Therapy, schools, & Early Intervention*, 3, 76-94. doi: 10.1080/19411241003684217

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