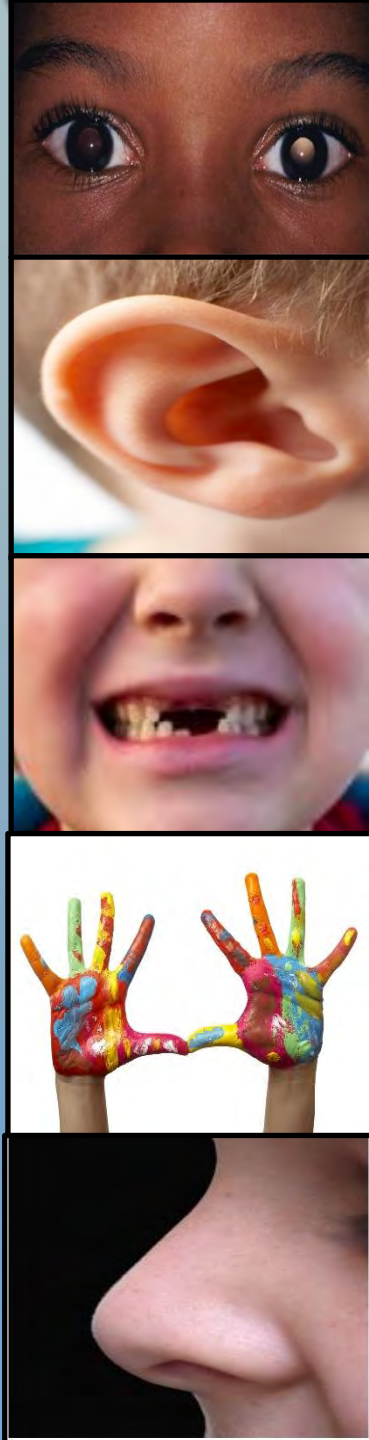


The Effects of a Sensory Friendly Learning Environment on Students with Intellectual and Developmental Disabilities

**By: Zipporah Levi-Shackleford, M.Ed., Ed. D. Candidate
VA-LEND Family/Education Trainee**



Objectives

- Define Sensory Processing Disorder (SPD)
- Discuss how SPD affects learning
- Define sensory friendly learning environments
- Analyze the effects of being in a sensory friendly learning environment
- Discover simple interventions and classroom modifications to promote learning



What is Sensory Processing Disorder (SPD)?

- We gather information from our environment through our 5 senses continuously to help us perform daily activities ¹
- We also utilize two lesser known senses, vestibular (sense of knowing where you are) and proprioceptive (sense of balance) ¹
- When our senses do not translate information from our environment in a typical way, the result is abnormal behaviors collectively known as Sensory Processing Disorder (SPD) ³

What is Sensory Processing Disorder (SPD)?

- First defined as Sensory Integration Disorder by Dr. Jean Ayers in 1973
- *“The neurological process that organizes sensations from one's own body and from the environment and makes it possible to use the body effectively within the environment”¹*



What is Sensory Processing Disorder (SPD)?

- There are 3 types of SPD:
 - Sensory over-responsivity (hyperactivity often mislabeled as ADHD)
 - Sensory under-responsivity (hypo activity often mislabeled as laziness)
 - Sensory seeking (often mislabeled as impulsivity and clumsiness) ⁵
- A comorbid condition seen often with individuals diagnosed with intellectual and developmental disabilities (**most often associated with Autism Spectrum Disorder* ³)

How Does SPD Affect Learning?

- Children with SPD:
 - Experience internal and external sensations much differently than their typically developing peers ³
 - Interact with their environments differently ⁵
 - Some interactions with the environment can cause physical pain increasing the amount of distractive and problem behaviors ⁶

How is SPD Seen in the Classroom?

- SPD causes challenges that interfere with learning ⁵
- Common disturbances reported by teachers include:
 - **Problems with balance**
 - **Lack of energy and poor arousal**
 - **Messy handwriting**
 - **Lack of organization**
 - **Lack of or poor future planning skills**
 - **Difficulty with social interactions**
 - **Impulsivity**
 - **Poor attention span**



How do Sensory Friendly Learning Environments Help?

1. Promote calming and/or stimulation as appropriate for the individual ⁸



- Increases arousal and attention leading to more opportunities for learning⁷

2. Also credited with improving moods and levels of relaxation⁷



- Assists with depression and anxiety co-morbid conditions affiliated with many disabilities which also negatively affect learning ⁸

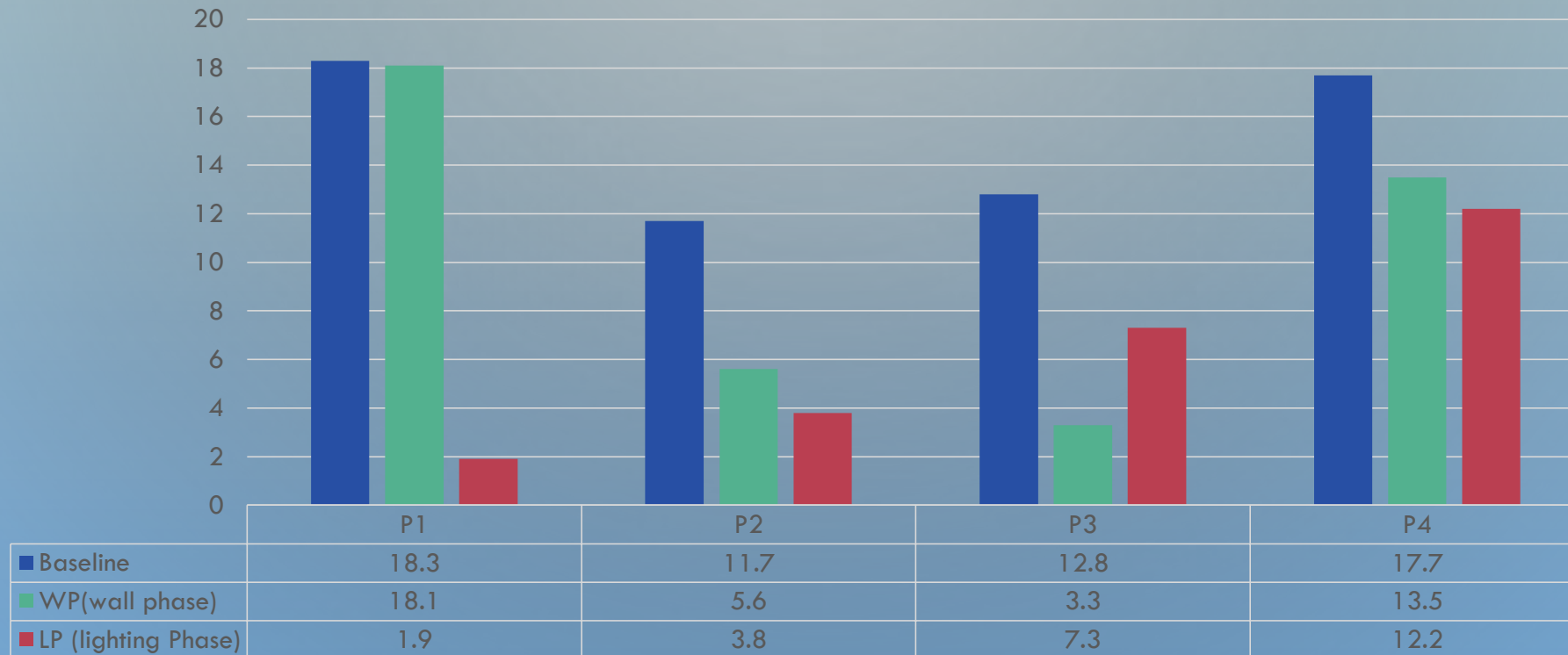
Do Sensory Friendly Learning Environments Really Work?

Effect of classroom modification on attention and engagement of students with autism or dyspraxia M, Kinnealey (2012)

- 4 males (13-20) with language impairments. 3= Autism Spectrum Disorder 1 = Dyspraxia
- 6 week project= 2 weeks of baseline, 2 weeks of sound-absorbing walls, 2 weeks of halogen lights

Do Sensory Friendly Learning Environments Really Work?

Effect of Classroom Modification on Attention and Engagement of Students with Autism or Dyspraxia



■ Baseline ■ WP(wall phase) ■ LP (lighting Phase)

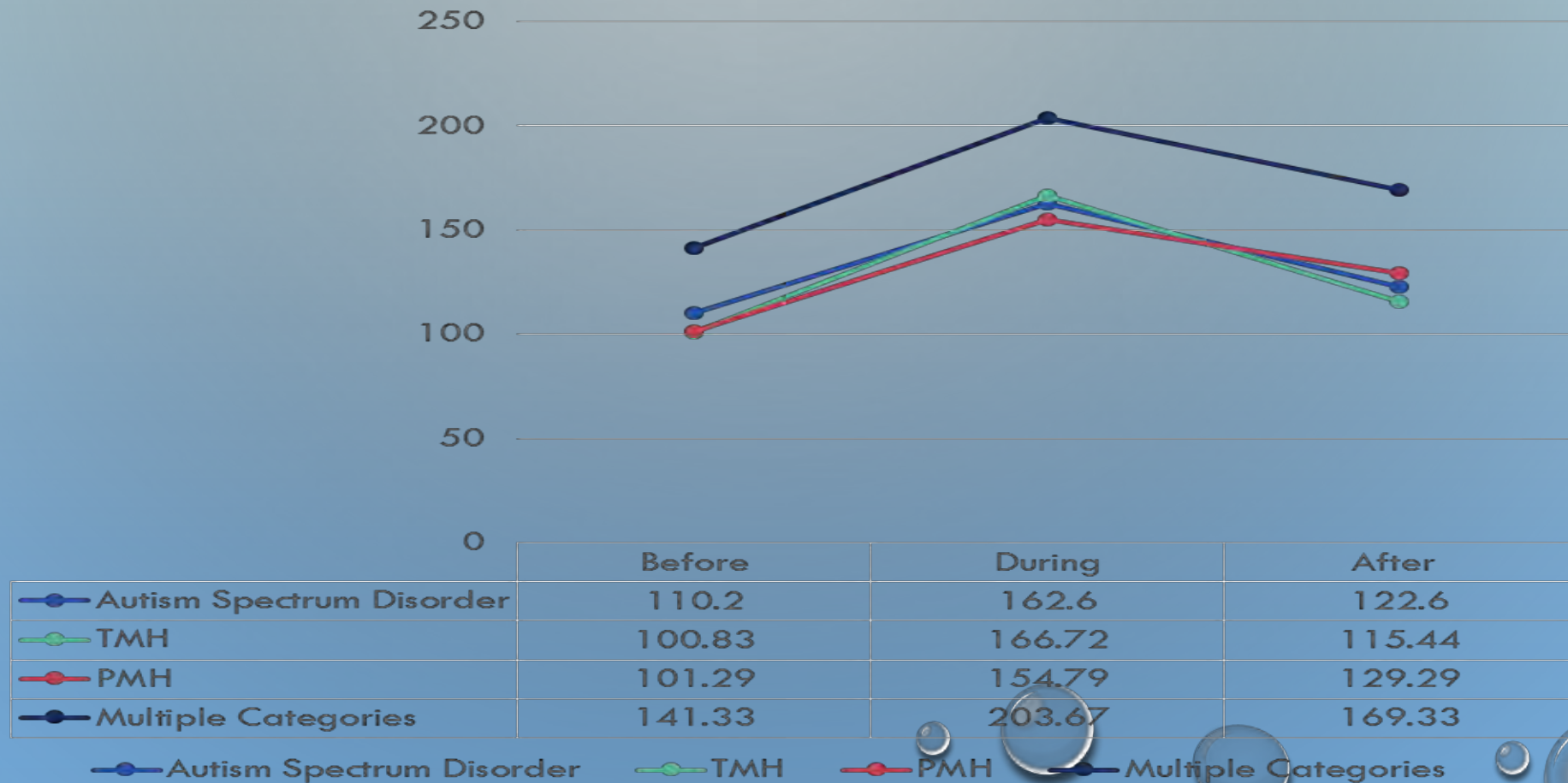
Do Sensory Friendly Learning Environments Really Work?

Multi-Sensory Intervention Observational Research, Thompson, C (2011)

- 50 students (8-18) separated into 4 categories:
 - Autism Spectrum Disorders
 - Trainable Mentally handicapped (TMH) (presently Limited Intellectual Disability²)
 - Profoundly Mentally Handicapped (PMH) (presently Pervasive Intellectual Disability²)
 - Multiple categories
- Sustained focus measured for 20 minute periods
 - regular classroom
 - a multi-sensory room
 - when returning to the classroom after the sensory room

Do Sensory Friendly Learning Environments Really Work?

Changes in Sustained Focus over Three Time Periods Relative to Special Needs Categories




What are the Benefits of Creating Sensory Friendly Learning Environments?

- They have an universal effect ⁸
 - All students in the classroom will perform better because the modifications support the natural learning process for all involved ⁵
- Modifications are affordable and easy to maintain ⁴



What are the Benefits of Creating Sensory Friendly Learning Environments?

The creation of sensory friendly learning environments increases academic success which leads to:

- 
- Higher levels of independence
 - Higher confidence levels
 - Improved behavior and mood
 - Improved social skills
 - Strong coping and self-advocacy skills
 - Greater chances of post-secondary education enrollment (*Only 35.7% have a high school diploma, 28.2% have an associate's degree and 9.1% have a bachelor's degree or higher*²)
 - Greater chances of gaining meaningful employment (*only 23.2% of this population is employed (11.4% have full-time employment)*²)

How to Create a Sensory Friendly Learning Environment

- Use natural or halogen lighting
- Limit noise
- Allow the use of headphones
- Provide movement breaks
- Set-up a quiet corner for students to go to when feeling overwhelmed
- Provide water breaks
- Allow the use of fidget toys
- Monitor the temperature in the room
- Use exercise balls and pillows instead of chairs
- Allow weighted lap blankets

References

[1] Ayres, A. Jean (1972). "Improving Academic Scores through Sensory Integration". *Journal of Learning Disabilities* 5 (6): 338–343

[2] Bader, B. (2015). Childhood Neurodevelopmental Disorders: Intellectual Disorders Retrieved from https://blackboard.vcu.edu/webapps/portal/frameset.jsp?tab_group_id=2_1&url=%2Fwebapps%2Fblackboard%2Fexecute%2Flauncher%3Ftype%3DCourse%26id%3D_124569_1%26url%3D

[3] Ghanizadeh, A. (2011). Sensory Processing Problems in Children with ADHD, a Systematic Review. *Psychiatry Investigation*, 8(2), 89-94.

[4] Kinnealey, M., Pfeiffer, B., Miller, J., Roan, C., Shoener, R., & Ellner, M. L. (2012). Effect of classroom modification on attention and engagement of students with autism or dyspraxia. *The American Journal of Occupational Therapy*, 66(5), 511-9. Retrieved from <http://search.proquest.com/docview/1038404006?accountid=14872>

References

- [5]Trníková, J. (2013). BRAIN-BASED LEARNING STRATEGIES AND INCLUSIVE EDUCATION. *Technologia Vzdelavania*, 21(3), 1-7. Retrieved from <http://search.proquest.com/docview/1365792070?accountid=14872>
- [6]Thompson, Carla J. (2011). Multi-Sensory Intervention Observational Research. *International Journal of Special Education*, (1), 202-214.
- [7]Restaino, Rusti, RN, B.S.N., M.B.A. (2011). Gain attention, enhance memory, and improve learning with brain-based strategies. *The Journal of Continuing Education in Nursing*, 42(5), 199-200. doi:<http://dx.doi.org/10.3928/00220124-20110421-04>.
- [8] Van Rie, Ginny L., & Heflin, L. Juane. (2009). The Effect of Sensory Activities on Correct Responding for Children with Autism Spectrum Disorders. *Research in Autism Spectrum Disorders*, 3(3), 783-796.