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

• We also utilize two lesser known senses, vestibular (sense of knowing where you are) and proprioceptive (sense of balance)

• 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)
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 (hypoa activity often mislabeled as laziness)
  • Sensory seeking (often mislabeled as impulsivity and clumsiness)

• A comorbid condition seen often with individuals diagnosed with intellectual and developmental disabilities (*most often associated with Autism Spectrum Disorder*)

---

3. most often associated with Autism Spectrum Disorder
How Does SPD Affect Learning?

- Children with SPD:
  - Experience internal and external sensations much differently than their typically developing peers
  - Interact with their environments differently
  - Some interactions with the environment can cause physical pain increasing the amount of distracting and problem behaviors
How is SPD Seen in the Classroom?

• SPD causes challenges that interfere with learning

• 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 learning \(^7\)

2. Also credited with improving moods and levels of relaxation \(^7\)
   - 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

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>18.3</td>
<td>11.7</td>
<td>12.8</td>
<td>17.7</td>
</tr>
<tr>
<td>WP (wall phase)</td>
<td>18.1</td>
<td>5.6</td>
<td>3.3</td>
<td>13.5</td>
</tr>
<tr>
<td>LP (lighting Phase)</td>
<td>1.9</td>
<td>3.8</td>
<td>7.3</td>
<td>12.2</td>
</tr>
</tbody>
</table>
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 Disability)
  - Profoundly Mentally Handicapped (PMH) (presently Pervasive Intellectual Disability)
  - 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

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>During</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism Spectrum Disorder</td>
<td>110.2</td>
<td>162.6</td>
<td>122.6</td>
</tr>
<tr>
<td>TMH</td>
<td>100.83</td>
<td>166.72</td>
<td>115.44</td>
</tr>
<tr>
<td>PMH</td>
<td>101.29</td>
<td>154.79</td>
<td>129.29</td>
</tr>
<tr>
<td>Multiple Categories</td>
<td>141.33</td>
<td>203.67</td>
<td>169.33</td>
</tr>
</tbody>
</table>
What are the Benefits of Creating Sensory Friendly Learning Environments?

• They have an universal effect

• All students in the classroom will perform better because the modifications support the natural learning process for all involved

• Modifications are affordable and easy to maintain
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)*
- Greater chances of gaining meaningful employment *(only 23.2% of this population is employed (11.4% have full-time employment))*
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


References


