

Background & Significance

Provident Charter School (PCS) is a specialized school for children in 2nd-8th grade with dyslexia and language-based learning disabilities. Difficulty with sensory processing frequently impacts educational performance and outcomes, and PCS has identified a need for a sensory room/walkway for this purpose.

According to the American Academy of Pediatrics (2012), "difficulty tolerating or processing sensory information is a characteristic that may be seen in many developmental behavioral disorders, including autism spectrum disorders [autism or ASD], attention deficit/hyperactivity disorder [ADHD], developmental coordination disorders, and childhood anxiety disorders." Sensory interventions have been shown to significantly improve classroom participation, discrete indicators of educational performance and readiness to learn (Spyhalski, 2019; Zentall, et al., 2013). Prior to this project, students at PCS did not have adequate outlets to meet their sensory needs.

Project Aims

Aim 1 - Sensory Room: Design, create, and implement an evidence-based "sensory room" to support individual students with complex sensory needs that, if unmet, can impede classroom participation and intervention in order to more effectively implement their Individualized Education Programs (IEPs) and improve educational outcomes.

Aim 2 - Sensory Walkway: Design, create, and implement a "sensory walkway" in the hallway to provide all students with an appropriate outlet to self-regulate their sensory needs that if unmet, could impede classroom participation and performance.

Methods

Sensory Room:

- Planning** - Dissemination of faculty pre-survey, informal classroom observations, and selection of sensory items and intervention techniques based on student needs.
- Funding** - Purchase of materials through DonorsChoose (a non-profit fundraising organization or public schools), along with contributions from the PCS Board.
- Construction** - Assembly and cataloging of sensory equipment according to the type of sensory input provided (proprioceptive, vestibular, visual, tactile, and/or auditory).
- Training** - Creation of handouts and a comprehensive training PowerPoint with video and interactive components that were disseminated during an in-service for faculty/staff.

Sensory Walkway:

- Design** - Walkway design created using Procreate®. Vinyl funded through DonorsChoose.
- Construction** - Vinyl decals were cut using a Cricut Explore machine, then placed along the hallway. 162 vinyl decals were used in this project.

Faculty Survey:

- Pre/post Qualtrics survey for teachers
 - Behaviors resulting from unmet sensory needs
 - Level of disruption in the classroom
 - Perceived effectiveness of available sensory interventions
 - Satisfaction with completed product (*post-test only*)

Student Survey (2nd-8th grade):

- Before & after using the sensory room...
 - "How are you feeling?"
- Recorded by teacher



Sensory Room



Items in the sensory room include:

- HugglePod "tree house"
- Crash pad
- Sensory discs
- Sound machine
- Tunnel
- Trampoline
- Bubble wall
- Tap & Play light drum
- Spin board
- Weighted stuffed animals
- Sensory socks
- Bubble machine
- Small fan
- Adjustable lighting
- Sensory bins:
 - Water beads
 - Dried beans
 - Fidgets

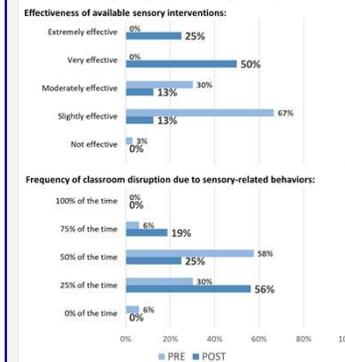
Sensory Walkway



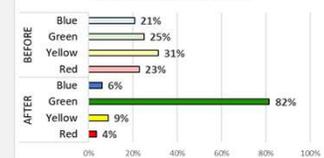
- The sensory walkway is named after the school's therapy dog, Stormy. The dog park theme aligns with Stormy, who is very motivating for the students.
- The sensory walkway is located at the entrance of the cafeteria, a central location in the school that all students can easily and regularly access.
- Elements include balancing on dog rope toys, jumping between dog treats, weaving through paw prints, jumping over puddles, and hopscotch through sticks.

Results

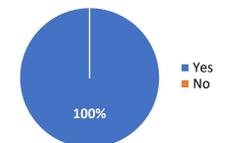
Faculty Survey Pre/Post Sensory Room Implementation



Student Reported "Zone of Regulation" Pre/Post Sensory Room Use



"Do you feel that the sensory room & sensory walkway are an improvement to your school?"



"This has been a life saver for many of our students! It has served as a safe place for our students to take a break. It keeps the students in a safe area when there are extreme behaviors."

"The sensory room has provided a very much needed space for students to get away from the buzz of the classroom and to let out the energy/emotions inside."

Conclusions

- The sensory room was primarily utilized as a proactive tool at strategic points throughout the day before sensory-related behaviors became disruptive to students' learning (i.e. following a particularly difficult class or prior to an anxiety-inducing task).
- Implementation of sensory interventions such as a sensory room in educational environments can significantly improve students' ability to self-regulate.
- Research shows that sensory interventions and improved emotional regulation can increase in-class participation and readiness to learn (Koenig & Rudney, 2010; Shabha, 2006).

References

American Academy of Pediatrics, Zimmer, M., & Desch, L. (2012). Sensory integration therapies for children with developmental and behavioral disorders. *Pediatrics*, 129(6), 1186-1189. <https://doi.org/10.1542/peds.2012-0876>

Koenig, K. P., & Rudney, S. G. (2010). Performance challenges for children and adolescents with difficulty processing and integrating sensory information: A systematic review. *American Journal of Occupational Therapy*, 64, 430-442.

Kuypers, L. The Zones of Regulation®. Social Thinking, Inc. <https://zonesofregulation.com/free-downloadable-handouts.html>

Shabha, G. (2006). An assessment of the impact of the sensory environment on individuals' behaviour in special needs schools. *Facilities (Bradford, West Yorkshire, England)*, 24(1/2), 31-42. <https://doi.org/10.1108/02632770610639189>

Spyhalski, Mary C. "Program Evaluation of the Impact of Sensory Room Activities on Student Readiness in Muskegon County" (2019). *Education*. https://scholarworks.gvsu.edu/ot_education/3

Zentall, S. S., Tom-Wright, K., & Lee, J. (2013). Psychostimulant and sensory stimulation interventions that target the reading and math deficits of students with ADHD. *Journal of attention disorders*, 17(4), 308-329. <https://doi.org/10.1177/1087054711430332>

Acknowledgements

We would like to thank Provident Charter School for their partnership on this project and for being so welcoming, with special recognition of our site mentor, Jessica Frosztzega, M.S. Ed., for her overwhelming support, along with Julie Matz, M.S. Ed., Jennifer Lasch, Jesse Steward and Melissa Nosenchuck for helping to make this project a success.