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Development of the Classroom Sensory Environment Assessment (C-SEA)

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DEVELOPMENT OF THE CLASSROOM SENSORY ENVIRONMENT ASSESSMENT C-SEA

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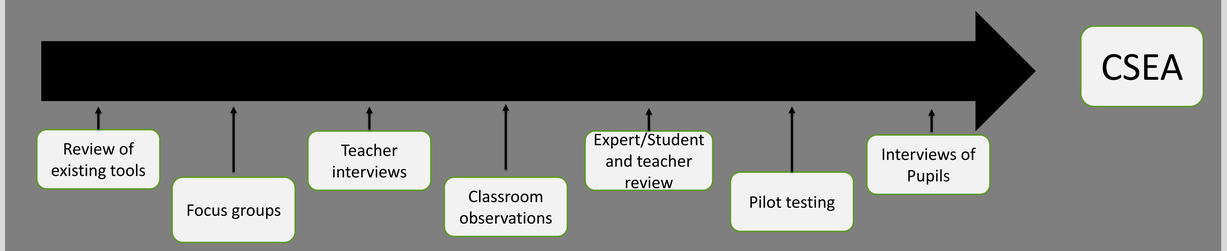
Introduction and Background

- Explosive growth in the number of children with autism spectrum disorder (ASD) in the public schools.
- Children with ASD demonstrate sensory processing deficits that may impair their educational performance.
- States struggle with the preparation of teachers to teach students with ASD (Barnhill, Polloway, & Sumutka, 2011; Morrier, Hess & Helfin, 2011; Scheuermann et Al., 2003).
- Teachers not typically taught how to assess sensory deficits or sensory aspects of the environment and typically do not develop an understanding of a child's response to sensory stimuli (Oliver & Reschly, 2010).
- There are sensory assessments for children but focus groups and interviews with teachers suggested there is a need for a tool to assess the sensory environment of the classroom.
- The Classroom Sensory Environment Assessment (C-SEA) allows teachers *to examine the sensory aspects of classroom tasks and environments*. Purpose is to assist in determining ways to modify tasks and environments to improve engagement and reduce problem behaviors in elementary school students with ASD.

Methods



The process has taken 2 years and has included over 100 teachers and education students, 10 occupational therapists, 5 occupational therapy students, more than 100 classrooms, and 10 students with ASD. This project was reviewed and approved by the IRB at each step of the process.

- The C-SEA was designed collaboratively after viewing 18 classrooms across urban, suburban, and rural locations in one New England state.
- Currently C-SEA contains 160 items categorized into sensory systems.
- Each item is scored for frequency on a 5 point scale and intensity on a 3 point scale.
- The C-SEA is available for free online at https://sites.google.com/site/cseafree/ .

Qualitative Results

- There are no similar tools currently available to assess classroom sensory environment.
- Focus group
  - Importance of prior experience for the teachers and their lack of prior preparation for teaching children with ASD and dealing with the sensory issues.
  - Acknowledgement of the individuality of issues in children with ASD.
  - Suggested a need for teacher training in this area.
- Classroom observations noted wide variation in classroom sensory experiences.
- The observations provided us with the initial items included in the C-SEA.
- Teachers' feedback from using the C-SEA suggests teachers found it useful

  I found doing this activity very helpful because it allowed me to take a deeper look at all of the classroom surroundings. I never realized how many things could affect student and their attention span.
- Interviews of high school students with ASD are providing additional items to include based on student's perceptions of helpful and difficult sensory experiences
- These students with ASD report their most difficult experiences to be loud noises in the cafeteria and hallways., such as other students yelling.

Quantitative Results

- Frequently checked items (counts of 20 or greater out of 33) fell in the visual and tactile areas.
- Very frequent classroom sensory experiences included fluorescent lighting, use of primary colors, use of patterns, multiple storage bins, and sitting in close proximity to peers.
- Cafeteria and hallway noise levels can be compared in dBA level to noises like a hand saw, an electric shaver, heavy traffic, or an electric drill.
  - Cafeteria levels measured between 81 and 98-99 dBAs.
  - Hallway noise ranged from the high 70's to the high 80's in dBA.

Discussion

- The tool demonstrates face validity.
- Teachers and therapists report it to be useful and it served as an instructional tool for teachers and student teachers.

Future Directions

- Test Retest reliability with teachers
- Inter-rater reliability from videotape
- Factor analysis on instrument data
- Manual development
- Consideration of teacher's sensory preferences compared to classroom sensory ratings

References

References are available on the handout

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