Meeting Sensory Needs in the Classroom

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Abstract

Understanding and meeting students' sensory needs is crucial for optimizing their academic performance and overall well-being in school settings. However, the current approach often lacks specific sensory interventions for distinct needs. This Doctoral Capstone Experience (DCE) aims to address this gap by developing tailored sensory plans for each student and educating teachers on identifying and addressing these needs. By emphasizing implementation of specific sensory approaches over blanket application, it seeks to create inclusive classrooms. Through staff education and creation of sensory corner, the intervention aims to enhance teachers' knowledge and competency in meeting students' sensory needs. Outcome measures include pre- and post-intervention surveys to assess changes in staff knowledge, comfort level with the intervention plan, and trends in student behavior. Qualitative data analysis will evaluate the feasibility and effectiveness of specific sensory interventions. Ultimately, this project aims to deepen understanding of creating tailored sensory plans and inform educational practices to better accommodate diverse student needs, fostering an inclusive learning environment where all students can thrive.

Introduction

Many students and children have unique yet unmet sensory needs, which becomes apparent through their behaviors and performance in school. Meeting sensory needs is not as simple as applying a blanket application; however, this seems to be done more often than it should be, due to lack of knowledge in the area of sensory differences and meeting sensory needs. The goal of my Doctoral Capstone Experience (DCE) is to create sensory plans on an individual level to maximize student potential and prove effectiveness of specific sensory plans.

In addition, through development of a sensory guide, I will be educating teachers on how to determine possible sensory needs and how to apply sensory strategies to meet student needs.

Literature Review

In schools, the use of sensory strategies is gaining popularity, yet the effectiveness depends on recognizing and accommodating for specific sensory needs. Sensory strategies are objects that can be used to meet sensory needs of a child, such as fidget toys to be used while seated or it could look like full body movement opportunities. While sensory strategies are intended to address challenges related to attention, anxiety, and sensory processing, their potential outcomes depend on understanding the unique preferences of students. Biel (2017) speaks on the importance of correctly aligning sensory strategies with individual needs, emphasizing that tailored interventions allow teachers to effectively meet students' sensory differences. However, there is an increasing issue with sensory strategies being applied, without consideration of the diverse sensory needs of each student. As highlighted by Harrison et al. (2022) and Croley et al. (2023), using one sensory approach for all students may unintentionally result in distractions for students without sensory differences, therefore, emphasizing the need for a shift toward a universal set of options that can then be selected as a more specific sensory intervention for optimal benefits in the classroom. The misuse of sensory strategies shows that a more in-depth exploration is needed to prove effectiveness of meeting sensory needs on an individual level and promoting an inclusive classroom.

School staff assisting in accommodating for specific sensory needs play a pivotal role in promoting well-being and increasing academic performance of students. Addressing the unique sensory preferences and needs of each student by having a constellation of options available will recognize the natural diversity of sensory processing and allow for all student needs to be met.

Unwin et al. (2023) found that individual sensory preferences influence the way children engage with sensory tools or strategies, highlighting the importance of tailored interventions. Biel (2017) emphasizes that correct use of sensory strategies allows students to manage sensory issues, anxiety, and attention challenges more effectively. In addition, if a child's sensory needs are left unmet, it may result in behavioral issues (Thompson & Raisor, 2013). Moreover, Harrison et al. (2022) and Croley et al. (2023) highlight potential downfalls of applying a specific sensory intervention, showing that students without sensory differences might experience distractions when exposed to these strategies rather than the intended purpose of benefiting from use. Tailoring sensory interventions to the specific needs of each student promotes a more inclusive classroom.

In a study incorporating sensory room use, 94% of participants reported a significant reduction in distress following sensory room free play use (West et al., 2017). A sensory room is a room specific for use for regulation of visual, auditory, olfactory, tactile, gustatory, vestibular, and proprioceptive senses. This study allowed adolescents to explore multiple sensory interventions to choose from, which they found to regulate their distress most. Romar et al. (2023) and Mazzoli et al. (2021) provide further support for tailored sensory plans contributing to improvements in concentration, alertness, and overall academic well-being. Therefore, recognizing and accommodating individual sensory needs plays a pivotal role in creating an educational environment that fulfills students' unique sensory needs. Further research in this area is essential to deepen our understanding of creating a sensory plan and to inform educational staff on accommodating individual sensory needs.

While the implementation of sensory strategies has grown in schools, a concern remains with the misuse, risking the benefits of the desired outcomes using sensory strategies. As with all

educational strategies, sensory strategies can lead to unintended outcomes when used without regard to students' needs. A crucial aspect in preventing misuse involves partnering with teachers about how to use a proactive approach to identifying sensory needs before implementing sensory strategies. A barrier to correct use of sensory strategies included misinterpretation of the purpose of sensory breaks and sensory strategies (Biel, 2017; Harrison et al., 2022; Croley et al., 2023). Educating teachers and school staff on the purpose and correct use of sensory strategies will become crucial to maximizing their potential benefits and preventing unintended consequences of misuse. An effort to resolve these misconceptions is foundational in ensuring sensory strategies serve as valuable assets rather than contributing to unintentional disruptions in the classroom.

Despite the growing body of research on sensory interventions in the classroom, a noticeable gap persists in the literature on selecting the best strategy for each student during instruction. While Biel (2017), Croley et al. (2023), and Harrison et al. (2022) make the effectiveness of sensory strategies more clearly understood, a shortage remains of exploring tailored interventions to meet unique preferences. The research primarily focuses on group interventions, overlooking how they can select the best strategy for each student to enhance the outcomes for students with varying sensory needs. Additionally, studies by Mazzoli et al. (2021) and Mead et al. (2016) highlight the impact of sensory interventions on cognition and academics, yet they do not examine the effectiveness of tailored these strategies to meet the unique needs of each student. As the literature mostly leans toward using standard one size fits all interventions, a need for further research exists to examine the effectiveness of tailored sensory interventions, which could significantly contribute to improvements in learning.

Needs Assessment

There are multiple internal and external factors influencing Mary Lee Johnson Community Learning Center preschool. Community and staff are passionate about their goals and helping children effectively engage in school, while pushing them to their highest potential. They have access to the outdoors and play equipment, although unpredictable weather limits access during some seasons. As with many community programs, the MLJCLC is always looking for funds to support their mission.

For my DCE, I developed and implemented specific sensory plans for students by determining sensory preferences through observations. I also educated teachers on the importance of meeting all students' sensory needs on an individual basis and created a guide for them to follow. The guide helped quickly determine a child's sensory preferences through observations and guide the teachers on how to decide on which sensory strategies they may utilize with that student. With the guide, teachers will be able to use it for many years to help meet the requirements of each student's sensory needs. By creating and implementing plans and educating teachers, students were pushed to reach their highest potential and teachers were able to implement the guide and continue doing so for years to come.

Methods

Study Design

A thorough literature review was completed, reviewing effects of sensory interventions on behaviors in the classroom. I implemented evidence based sensory strategies for preschool aged students over a 10-week period at Mary Lee Johnston Community Learning Center (MLJCLC). This was a quasi-experimental pilot study, used to determine feasibility of the continuation of classroom based sensory interventions through teacher and staff education training. The trainings included signs to look for to determine sensory differences, how to

appropriately respond to sensory differences, and how to best support children and their families with sensory differences.

Participants

The capstone student recruited MLJCLC, a preschool learning center with summer programming. Classrooms ranged from infant to pre-kindergarten; however, this study focused primarily on the preschool classroom, including 13 students. Students in this classroom ranged from 2.5 years to 4 years of age, with diverse race, ethnicity, and backgrounds. Students within the classroom did not have specific diagnosis requiring sensory support. The 3 teachers of this classroom had taken multiple college courses in Child Development.

Intervention

Intervention consisted of educating MLJCLC preschool teachers on the importance of meeting sensory needs and signs to look for when determining sensory preferences. Educating the teachers occurred through lunch-and-learn style of meetings. Topics included the following: 1.) sensory categories that a child might fall into; 2.) the less commonly talked about 6^{th} and 7^{th} senses, the proprioceptive and vestibular systems; 3.) sensory friendly classrooms; and 4.) the importance of meeting sensory needs and the impact on education. The pamphlets were left in the classroom for future reference as needed by teachers.

A resource chart was created to keep in the classroom for meeting sensory needs and decrease concerns that may look like behavioral concerns. The resource chart consisted of options that the teachers can implement with a child if they find it is needed. The first column had each of the senses, followed by a second column with multiple sensory seeking behaviors for each of the senses, followed by a third column with activities to implement to limit those

behaviors. The same was done for sensory avoidant and sensory sensitive behaviors. Using these techniques was modeled for teachers to continue implementing within the classroom.

The capstone student modeled the incorporation of sensory strategies into the classroom to help teachers understand appropriate times to implement increased sensory support if needed. The modeling was done so that activities did not disrupt their existing schedule, but rather the activities were worked seamlessly into their schedule. The heavy work activities were offered to provide students with increased proprioceptive sensory support, as this area was the most common concern among students. The heavy work activities included animal walks to the bookshelf, erasing the white board, holding the door open for the class, wiping down tables, and passing out plates for mealtimes. Additionally, some students became overwhelmed from a busy environment, so the option to step away for some deep breathes and space was offered to students as needed.

Outcome Measures

Pre and post intervention open-ended, short answer survey questions were administered to teachers and staff members through an online survey during week 1 and week 12. The surveys covered knowledge about sensory needs of children and sensory strategies used. The survey also covered whether there were positive or negative trends in behaviors in response to intervention. In addition, the post intervention survey ensured the established plan is feasible for the site to continue using and that the staff felt competent in doing so. Responses were aggregated and reviewed to look for improvement and feasibility.

Figure 1

Pre- intervention survey

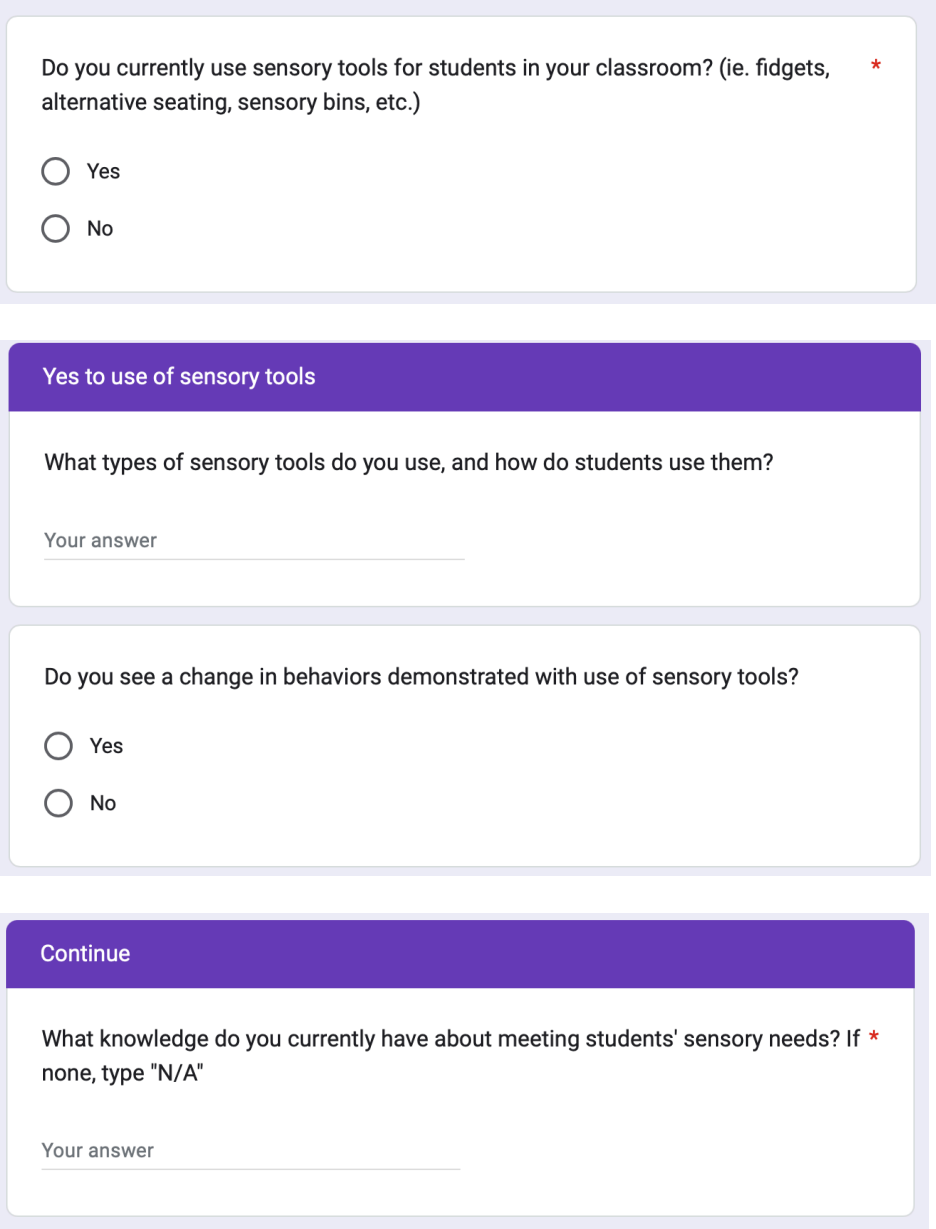

Figure 2

Post-intervention survey

Have you seen a change in classroom behaviors since implementation of new sensory strategies? *

- ◯ Yes
- ◯ No

What 2 pieces of new information have you learned about meeting sensory needs? *

Your answer

Are the new strategies feasible for long term use? *

- ◯ Yes
- ◯ No

Why is or why isn't the plan feasible? *

Your answer

How have you seen a change in behaviors since implementation of sensory tools? *

Short answer text

Data Analysis

Data was gathered from classroom teachers through pre and post intervention surveys. There were no identifying names associated with the teacher who completed the survey. Qualitative data from these surveys was aggregated and reviewed by the Capstone student. The student looked for changes in teacher knowledge of meeting students' sensory needs in the classroom and comfortability of the plan to continue forward within MLJCLC's program.

Pre-intervention surveys revealed that 3 of 3 preschool teachers who completed the survey confirmed the use of sensory strategies in the classroom, mostly being fidgets, heavy work, sensory bins, and noise cancelling headphones. All teachers reported seeing a change in behaviors following student use of these strategies. In addition, teachers reported having knowledge of overstimulation and needing movement breaks throughout the day.

Post-intervention surveys revealed 3 of 3 preschool teachers who completed the survey did see an increase in behavioral changes following the new sensory plan, stating children were "more calm" after implementation. In addition, they stated that they learned about "personal plans", "heavy activities like animal walks", "different seating options", and "variety of needs". All teachers reported that the new plan is feasible for continued use due to the convenience of activities being implemented into their routine. New teacher knowledge includes the different needs of children, the different approaches for each need, heavy work, seating options, and all about the proprioceptive and vestibular systems.

Discussion

The results of the DCE revealed valuable insights into the implementation of tailored sensory interventions in a preschool classroom. The findings support the concept that

understanding and addressing sensory needs at the individual basis can significantly impact student behavior and classroom engagement.

Impact

Pre-intervention surveys indicated that teachers were already utilizing sensory strategies with children, such as fidgets, heavy work, and sensory bins, demonstrating a baseline awareness of sensory needs. However, the post-intervention survey revealed a notable shift in teacher perspectives, demonstrating an increased understanding of the diverse range of sensory needs and the importance of a tailored approach. The development of a sensory resource chart empowered the classroom teachers to experiment with different strategies and tailor them to each student's specific needs, as needed. The teachers had quick access to the chart to determine what would best work for a student at that time. This not only enhanced the teachers' ability to address sensory challenges, but also fostered a more inclusive classroom environment where all students were supported.

Implications for Social Change

The implications of the DCE extends beyond the immediate classroom setting. By advocating for tailored sensory interventions, this project contributes to a broader shift toward inclusive education. When a student's sensory needs are recognized and accommodated, they are more likely to participate fully in learning and structured activities, build positive relationships with peers, and develop a sense of belonging in the school community. Students became more aware of their own needs and would seek out opportunities to fulfill those needs on their own. This, in turn, can lead to improved academic outcomes, increased self-esteem, and reduced behavioral challenges.

Future Research

This DCE serves as a starting point for further research in meeting sensory needs. Future studies could explore the long-term direct impact of tailored sensory plans on academic achievement, social-emotional development, and overall well-being of students and other children. Additionally, further research could examine the effectiveness of the different sensory tools and strategies for specific sensory profiles, providing a more targeted guide for teachers to follow with students.

Limitations

This DCE had some limitations. The small sample size and short intervention period may have limited the generalizability of the findings. Additionally, the study relied on self-reported data from teachers and limited DCE student observations, which may have introduced some biases. Future research could address these limitations by including a larger and more diverse sample, extending the intervention period, and incorporating multiple data collection methods other than self-reported data.

Conclusion

In conclusion, this DCE highlights the importance of recognizing and addressing tailored sensory needs in the classroom. By implementing tailored sensory plans, educating teachers, and creating a sensory resource chart, this project has demonstrated the potential to create more inclusive and supportive learning environments for all students. The findings of this study emphasize the need for continued research and advocacy in this area, ultimately promoting the well-being and academic success of students with diverse sensory needs.

Personal Reflection

Throughout this DCE, my passion for inclusive education and my belief in the power of sensory interventions have grown tremendously. It has been incredibly rewarding to witness the

positive changes in students' behavior and positive classroom engagement because of tailored sensory strategies. I acknowledge that my personal biases and thoughts may have influenced certain aspects of this project. However, I strived to maintain objectivity and base my interpretations on evidence previously found. By engaging in open and honest communication with teachers and observing students' responses to different sensory approaches, it has challenged my assumptions and expanded my understanding of sensory processing and its effect on student learning experiences. This experience has reinforced my passion for advocating for students with diverse needs. I believe that by empowering teachers with the knowledge and tools to implement tailored sensory interventions, we can create classrooms where all students feel valued, supported, and capable of reaching their highest learning potential.

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