Creating a Sensory Responsive Classroom

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Abstract

Differentiated instruction requires that educators review content, process, product, and learning environment from the perspective of each student for effective and inclusive teaching (Tomlinson, 1999). The movement of the general education classroom to an inclusive environment serves to support the intelligences of all students rather than limiting to the intelligences of a few. This paper examines the need of sensory responsive classrooms in the general education environment to fully support differentiated instruction. Sensory processing refers to how the brain interprets information through sensory input such as: vision (sight), audition (hearing), tactile stimulation (touch), olfaction (smell), gustation (taste), vestibular (balance and the sense of movement) and proprioception (the sense of knowing one's position in space (Cosbey, Johnston &Dunn, 2010). Many students have difficulty learning, regulating and adapting behavior based on sensory sensitivities and seeking experiences within their environment. Using research based multi-sensory and intelligences teaching practices, this paper suggests the creation and design of the general education classroom environment to support the sensory intelligences of all learners. These strategies are suggested through coordination of the student's sensory profile. This may also include regulation of classroom lighting, use of music during transitional periods, and kinesthetic movement. By creating a sensory responsive classroom environment, the intelligences of all learners are addressed.

Creating a Sensory Responsive Classroom

Intelligence, referring to the ability to learn and adapt behaviorally, takes on several forms in the classroom today. In the past few decades, the general education classroom has moved from supporting the abilities and intelligences of a few through the focus of the linguistic and logical processes to addressing the intelligences of all students with inclusive teaching and differentiated instruction (Tomlinson, 2001). In order to support all learners, the general education classroom focuses on the multi-intelligences of the learnerthrough the facilitation of differentiated instruction. Differentiated instruction serves to support the learning process of an individual using Gardner's Theory of Multiple Intelligences (linguistic, logical, naturalistic, kinesthic, musical, visual, interpersonal and intrapersonal) (2011, 63).

Differentiated instruction requires that educators review content, process, product, and learning environment from the perspective of each student for effective and inclusive teaching (Tomlinson, 1999). Much research and training is spent on the content, process, and product (result) of teaching all students. In the past few years< New York State has been promoting and implementing a common core or a content specific set of skills that each learner should possess prior to advancing to the next step or grade level in each subject area. These standards were developed to address the growing number of school failures, high school drop outs and first and second year college students in remedial classes, in order to create a generation of college or career ready individuals (New York State Common Core Learning Standards, 2013). Federal and State required assessments and research based practices have changed the way that teachers address the process of learning by breaking down the developmental process of each learner,

mastery of the task, and provision of strategies to reach a successful product or means. The classroom environment has often been upgraded through technology which has supported the multi-intelligences and changing interests/motivations in order to engage the learner.

Little attention and monies have been provided to address the blank space known as the learning environment or general education classroom through the lens of the individual student participant (Carbone, 2001). Environmental stimuli that may be enhancing or distracting to each individual learner throughout the learning process known as sensory processing or integration has taken little notice or concern.Sensory processing refers to how the brain interprets information through sensory input such as: vision (sight), audition (hearing), tactile stimulation (touch), olfaction (smell), gustation (taste), vestibular (balance and the sense of movement) and proprioception (the sense of knowing one's position in space (Cosbey, Johnston &,Dunn, 2010). Many students have difficulty registering, regulating and adapting behavior based on sensory sensitivities and sensation seeking experiences within their environment. These students are often described as the students that can't remain in their seat, controlling, whiny, or even unmotivated to learn (Carbone, 2001, Dunn, Saiter & Rinner, 2002). Parents and teachers have difficulty supporting the child through daily routines and reaching learning standards which leads to a sense of lack of success on the part of the parent, teacher, and the child (Cohn, May-Benson, Teasdale, 2010).

Using research based multi-sensory and intelligences teaching practices, this paper suggests the creation and design of the general education classroom environment to support the sensory intelligences of all learners. These strategies are suggested through coordination of the student's sensory profile. This may include regulation of classroom lighting, use of music during

transitional periods, and kinesthetic movement (Carbone, 2001). By creating a sensory responsive classroom environment, the intelligences of all learners are addressed.

What Classroom Participation Means for a Child with Sensory Needs

Children with sensory processing/integration, communication, motor and/or cognitive needs may have difficulty participating in classroom activities due to the level of social participation required. As children develop, the expectation and value of exchanges with caregivers, adults, and peers grows. These exchanges, often through play, become meaningful opportunities that require children to practice coping, flexibility, and turn taking and greatly impact the ability for children to take on new learning (Cosbey, Johnston &Dunn, 2010). For a child with sensory needs, the classroom environment must be examined through the perspective of the child using social participation and sensory guidelines. With this information the classroom environment can be designed using strategies to support the child's regulation of sensory information, promote social participation, and learning environment.

Social Participation

For all children, daily routines and activities offer a set of challenges that require flexibility, coping, and turn taking. Social participation through flexibility, coping, and turn taking require a set of social competencies involving evaluation and response to cues from peers or adults (Cosbey, Johnston &Dunn, 2010). A child with sensory needs may respond with failure to evaluate and respond to social cues from peers, lack of ability to respond in a like manner, and exhibit challenging behaviors due to loss of control of the environment. Social situations may reflect daily routines and activities such as: play with siblings and peers in the home, small group or center based instruction at school, and community involvement through a visit to the

playground to formed groups such as Little League (Cosbey, Johnston &Dunn, 2011). These forms of participation take place in formal and informal activities across home, school, and community environments in small groups (World Health Organization, 2001).

As children approach middle childhood (6-10 years of age), social participation changes as children "must learn to"participate in large group activities across activities and environments(Cosbey, Johnston & Dunn, 2010). The movement small group and center based instruction to whole group direct instruction and team based learning reflects the changes in construction and expectation of the general education classroom from preschool and kindergarten arrangements to the elementary grade levels. Direct instruction, the meat of the lesson, is completed most often in whole group instruction rather than a small group or circle time activity as seen in the preschool and kindergarten years. Team based learning or small work groups of peers are used heavily to complete classroom activities and projects thus requiring flexibility and value of communication exchanges on a peer to peer level. Playground activities become more involved following games or imaginary play with complex rules directed by the adult or children (Cosbey, Johnston, Dunn &Bauman, 2012). Following best practice, the child's education needs and management in the general education classroom are supported in the child's natural environment and least restrictive environment. The child's environment or classroom space must then be designed to best fit the needs of the child to promote the level of complexity of social participation that is required for the child to learn and progress (Dunn, Saiter& Rinner, 2002).

The Description and Identification of a Child with Sensory Needs,

Description through Classroom Example

Many students have difficulty learning, regulating and adapting behavior based on sensory sensitivities and seeking experiences within their environment.Sensory processing refers to how the brain interprets information through sensory input such as: vision (sight), audition (hearing), tactile stimulation (touch), olfaction (smell), gustation (taste), vestibular (balance and the sense of movement) and proprioception (the sense of knowing one's position in space (Cosbey, Johnston &Dunn, 2010). Dunn, Saiter& Rinner (2002) further expand on the sensory system and integration of information.

> Visual and auditory systems provide information about the world, the touch and body position systems provide information about one's body, and the movement systems provides information and the interaction of the body in the world. The taste and smell systems provide a mechanism for sustaining the organism by accessing the information for obtaining food and for protection. (Dunn, Saiter& Rinner, 2002, 63).

Sensory processing is described through a neurological threshold(person's experiences) continuum and behavioral response (person's behavior) continuum. The neurological threshold continuum is described from high to low. A person with very high thresholds requires a lot of input to generate a response. A person with very low thresholds requires very little to input to generate a response. The behavioral response continuum moves from passive to active self-regulation. A person who uses passive self-regulation refers to a "lassaize faire" attitude. A person of active registration uses strategies to control input. This person could be characterized as very demanding and/or rigid in daily routines and activities (Dunn & Bennett, 2002).

The neurological threshold (person's experiences) continuum and behavioral response (person's behavior) continuum often intersect. These intersections are characterized as the four basic patterns of sensory processing: low registration, sensation seeking, sensory sensitivity, and sensation avoiding. Persons characterized with low registration identify with high neurological thresholds with passive self-regulation strategies. This may describe the child in the classroom that requires a lot of activity to get them going and tends to let time slide by. This child is often referred to as low affect, uninterested, and self-absorbed. Persons characterized with sensation seeking patterns combine high neurological thresholds with active self-regulation. Children with this description require lots of activity and need to direct the activity. They are very excited and easily engaged in activities, but have a difficult remaining in their seat. Sensory sensitivity refers to low neurological thresholds and passive regulation strategies. This can be described as person needing very little input but tends to just go with the flow. This child is highly distractible by small items such as background noise, report a sound before everyone else hears it, or the movement of a person's teeth when speaking. They will locate the distraction but not remove themselves from it. This child can be described as hyperactive or a "complainer." Sensation avoiding combines low neurological thresholds with active regulation strategies. The person requires very little input to respond and tends to activelyremove themselves from that feeling. The child that is sensation avoiding tends to withdraw from nonperferred stimuli. In order to remove such threats, they are can be: uncooperative, specific to rules and regulations (often self-imposed) to limit undesired sensory input.Reactions to such unwanted input are often very emotional that are perceived as too large or not fitting the nature of the situation (Dunn, Saiter& Rinner, 2002). It is important to note that these patterns can be combined. No person has one

single pattern of sensory processing, but several descriptors. A child can be a sensation avoider to visual stimuli but have another response to auditory stimuli (Dunn, Saiter& Rinner, 2002).

The Description and Identification of a Child with Sensory Needs,

Identification through Assessment

The Sensory Profile, an assessment usually conducted by an occupational therapist, leads to further understanding of the unique patterning of the sensory processing system of an individual (Dunn, Saiter& Rinner, 2002). Sensory processing looks very different across many environments. The sensory needs of a person can look very different in a home or school setting based on the familiarity of the sensory information. As awareness of sensory processing grows, occupational therapists are being asked to assess children's sensory processing needs and the impact on the child's educational success (Miller-Kuhaneck, Henry, Glennon & Mu, 2007).The Sensory Processing Measure- School (SPM-School) was developed to measure this need. It evaluates "items related to sensory processing, praxis, and social participation in seven school environments (classroom, recess, cafeteria, music, art, physical education, and bus)" rated using the Likert scale (Miller-Kuhaneck, Henry, Glennon & Mu, 2007). The rating of the environment is provided by the person known to that environment such as the bus driver for the bus. The person rating the environment must know the child for at least one month. The measurement of the tool is to provide or drive team discussions to "identify or rule out the sensory basis of social behavior…identify specific contextual components facilitating or inhibiting functional performance" (Miller-Kuhaneck, Henry, Glennon & Mu, 2007, 148).

With legislative changes following the reauthorization of the IDEA (P.L. 108-448) in 2004 and 2001 No Child Left Behind Act, best practice looks to review functional problems and

child management in the general education classroom rather than by diagnostic assessments. This places much responsibility of identification, assessment, and intervention of a child with sensory needs on the collaborating team (the general education teacher, occupational therapist, and representatives further defined by the school policy) (Miller-Kuhaneck, Henry, Glennon & Mu, 2007). Thus leaving the weight of research, best practice, and ongoing instruction on the classroom teacher, future instructors and parents for the child without documentation for the individual learner.

Designing a Sensory Responsive Classroom

NICHY, National Dissemination Center for Children with Developmental Disabilities, has gathered literature on the environmental accommodations needed for children with sensory processing needs. These focus on: curricular adaptions, updated instructional styles, and cognitive behavior training (Carbone, 2001). There is very limited information presented on the physical classroom design changes.

Physical Arrangement

Three general strategies can be incorporated to address sensory integration involving: movement in curricular responses, positive peer attention, and frequent teacher monitoring (Carbone, 2001). For children that are active in terms of “in the seat” fidgeting and “out of the seat” pacing when asked to remain seated behaviors, an open classroom or loosely structured center design can lead to negative learning and socially damaging behaviors (Carbone, 2001). Physical activity defined by: movement (navigation of one’s environment), activity (skeletal muscle that expends energy) and exercise (planned and repetitive with goal in mind) (Fede,, 2012). A “traditional row seating pattern” arrangement ensures structure and participation

(Miller-Kuhaneck, Henry, Glennon & Mu, 2007, Carbone, 2001). The child's desk placement should be positioned in the front row, surrounded by peer role models that would encourage positive peer interactions, close proximity for positive feedback from the instructor, with reduction of potential external distractions (hairstyle, perfume) areas (pencil sharpeners, windows). A closed 'safe area' should be designed (usually in a square shape using bookcases) so that children that are overstimulated can be free from distractions and under stimulated child can jump and move about as needed. Tables to promote small group work and computer/art areas should be designed so that the instructor can closely monitor and provide exit/entrance for the child with sensory needs from the activity. Furniture should be designed to move for a variety of instructional approaches (Miller-Kuhaneck, Henry, Glennon & Mu, 2007, Carbone, 2001).

Inattention and distractibility are often caused by external stimuli. For children with sensory needs, silence or high noise can serve as distractors. For the general education teacher, the quality of the external stimuli must be reviewed. The rule of thumb is the draw of the task must pull from any potential distractor. After the task is reviewed, other structural features can be reviewed such as bulletin boards, posters that would compete for attention. The use of sound or noise such as: listening centers to provide homework instructions and literacy materials, use of background music during transition, and white noise to filter classroom buzz of voices can increase attention to task. The use of color, fonts, and other visual qualities can serve to increase arousal, draw attention to key areas, and scaffold complex processes. The use of space in terms of information can greatly reduce frustration and clarity of task (Carbone, 2001).

Behaviors that result from lack of motivation, impulsivity, and rigidity to classroom routines can be responded to through cognitive-behavior therapy or self-monitoring (Carbone, 2001, Fede, 2012 & Lamin, Groulx, Hansen, Patton, &Slaton, 2006). Proximity to an individual

and group token-chart area reinforces positive personal behavior and collective group cooperation. In order to promote self monitoring and motivation in an inclusive environment, an individual incentive program targeting goals should be placed on the individual's desk and a group token chart should be placed near the individual in the classroom (Carbone, 2001).

Structural organization promotes predictability and control for children with sensory needs while supporting needs of spatial organization and retrieval. Labeled slots or individual storage bins located in the classroom space or desk area can assist with organization of classroom/home work, supplies, and texts. Estimation of time and classroom schedule can be closely monitored with flexibility through use of classroom time clock and picture schedule (Carbone, 2001,Dunn, Saiter& Rinner, 2002).

Conclusion

Using research based multi-sensory and intelligences teaching practices, this paper suggests the creation and design of the general education classroom environment to support the sensory intelligences of all learners. Just as interventions are addressed to support the intelligences and needs of the learner using multi-sensory intelligences, the student must be supported in a responsive environment (Kerens, Trotter, &Schoenbrodt, 2010).By creating a sensory responsive classroom environment, the intelligences of all learners are addressed.

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