

Sensory processing – A gifted perspective

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The senses

As we go about our daily lives we encounter a range of sensory information. These include noise (Auditory stimulation), sights (Visual stimulation), movements (Vestibular stimulation), touch (Tactile stimulation), body position (Proprioception and Kinaesthesia stimulation), smells and taste (Olfactory and Gustatory stimulation) (Department of Health and Community Services, 2006, p. 12). These internal and external senses are largely interpreted automatically and instantaneously.

What is sensory processing?

Sensory processing is the *ability to organise and interpret information we receive through our senses* (Department of Health and Community Services, 2006, p. 13). The efficiency of these sensory systems varies across individuals. For some, the ability to regulate and modulate incoming information is disrupted. Specifically, some children have obvious sensory impairments or difficulties (e.g. a hearing or vision impairment). Interestingly, some children may experience less obvious sensory challenges, such as difficulties regulating sensory input, heightened sensitivity to sensory information and/or inconsistent (or confused) responses to sensory stimulation. Children experiencing sensory processing difficulties may display disorganised behaviour, have delayed motor development or poor co-ordination, experience variable attention levels, have difficulty using sensory information to plan and execute actions, or lack self control (Department of Health and Community Services, 2006; and Yack, Aquilla & Sutton, 2000). In short, some children are not able to process sensory information as efficiently or automatically as others.

Sensory processing difficulties

Efficient sensory processing is reliant upon the development of sensory pathways and connections in the central nervous system (CNS). Therefore, difficulties can occur when the CNS does not typically process sensory information. This may cause individuals to be *over-* or *under-sensitive* to sensory input. Specifically, a child who is *over-sensitive* may experience sensations too intensely. This may result in the child becoming overwhelmed or over-stimulated. This can be experienced as a negative reaction if the child becomes irritated, annoyed or threatened. Children who are over-sensitive may appear distractible, have a short attention span, be unable to focus on relevant information or be constantly disrupted by new stimulation (Department of Health and Community Services, 2006; Kimball, 2000; and Yack, Aquilla & Sutton, 2000). For example a child experiencing sensitivity to auditory information may find a birds twittering outside the classroom window highly distracting.

Other children find it painful to be hugged or tickled. This can also result in them becoming visibly upset or striking out at others who barely touch them (for example while lining up to go into the classroom). Consequently, adults may reprimand them for hitting out at *nothing* when in reality for the child the light touch was actually physically painful.

In contrast, a child who is *under-sensitive* receives too little information and may have sensory experiences that do not create an impression. These children do not receive enough sensory information from everyday events in the classroom. As a result, they may require an increased amount of stimulation to achieve the typical alertness levels experienced by other children. For example, a child who is under-sensitive to the social cues of others may have difficulty correctly interpreting the gestures of their peers. Therefore, they may misread social cues that are easily interpreted by their same-aged peers. Consequently, they may appear to be unresponsive to the social efforts of others, and may miss important non-verbal cues or messages such as a frown from the teacher (Department of Health and Community Services, 2006; Kimball, 2000; Yack, Aquilla and Sutton, 2000). Over- or under-sensitivities may cause barriers to the learning and everyday functioning of gifted children within our sensory rich classrooms

Sensory processing and the gifted child

Gifted students with heightened sensitivities may be *extremely sensitive*. Often referred to as twice exceptional (Robinson, Shore and Enerson, 2007), gifted children with sensory processing difficulties *may be stopped cold by the sight of Canadian geese flying south at dusk, overwhelmed by the pounding beat from a passing car radio, or energised by blowing leaves* (Smutney, 2001, p.12). In other words, while most children respond to sensory information (e.g., sights, sounds, smells, and sensations) to some extent, gifted children may experience this input in greater intensity and detail (Smutney, 2001).

Theoretically, with regards to gifted individuals Dabrowski identified *psychic overexcitability* in five forms: 1) *psychomotor overexcitability* (an organic excess of energy or heightened excitability of the neuromuscular system); 2) *sensual overexcitability* (the capacity to seek heightened sensual pleasure through simply touching, tasting smelling for sensual enjoyment); 3) *intellectual overexcitability* (a persistence in probing, questioning, problem solving and seeking); 4) *imaginational overexcitability* (the use of image and imagination to create, dramatise, express or fantasise); 5) and *emotional overexcitability* (an emotional intensity of feeling and awareness at both extremes) (cited in O'Connor, 2002, p. 54). Later, Piechowski characterised overexcitabilities as *enhanced modes of being in the world* (cited in O'Connor, 2002, p. 55). The heightened sensitivities of gifted children may lead to anxieties and difficulty perceiving people and situations appropriately. As gifted children may already face academic and/or social challenges, understanding and catering for possible sensory issues through adaptations, strategies and interventions in partnership with parents and professionals is paramount. Clearly, it is important to raise awareness of the issues concerning sensory processing in order for us to better understand the reasons gifted children with sensory processing difficulties react in the way they do. It is also important to have an understanding of the avenues available to help gifted children with sensory processing challenges to realise their true potential.

Sensory assessment and intervention

Sensory assessments are available to identify a child's level of responsivity to the range of sensory situations they encounter on a daily basis in the classroom (Dunn, 2006). These assessments often highlight the impact of children's responses to classroom sensory input upon their academic performance, behavioural adjustment and social functioning at school. Intervention plans can then be developed to support a child experiencing sensory processing difficulties. For example, it is important to acknowledge that the feelings of the child are not unreasonable or immature. Also, talking about what is happening and supporting the child to develop and implement plans for responding to situations that seem overwhelming is valuable. A journal may be kept to record a child's fears, anxieties and how they were overcome. This could act as an important record of a child's successes in dealing with previous fears. Strategies may also be put in place to provide the child with extra internal (i.e., thoughts) and external (i.e., position of desk in the classroom) scaffolding to facilitate the child's processing of sensory information. Likewise, efforts could be made to reduce the level of sensory input that a child has to process (i.e., reducing unnecessary exposure to light, or background noise, etc). Importantly, it is essential to acknowledge the sensitivities of the child, and to encourage him or her to talk about their feelings and concerns.

If you are concerned about your child's ability to process or interpret sensory information seek guidance from an occupational therapist (or a related professional) working in this area.

References

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