

TRR1: Measuring the Impact of Embedded Sensory Interventions on the Behaviour of a Student with Autistic Spectrum Disorder, Complex Learning Difficulties and Challenging Behaviour.

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Context

The following briefing paper details the sensory intervention work completed within Tor View Learning Community to support and engage young people with sensory needs and complex learning presentations. The paper uses a case study approach to highlight the impact that sensory intervention has had on one student placed in a complex learning group. It reflects particularly on his engagement, learning and relationships.

'Autism Spectrum Disorders' (ASD) or 'Autism Spectrum Conditions' (ASC) are the common terms used to describe the range of neurodevelopmental conditions that are characterised by qualitative difficulties in social interaction and communication, and rigid and repetitive ways of thinking and behaving, World Health Organization (1992). These core differences are thought to be due to underlying differences in neurological functioning creating fundamental differences in flexible generation of ideas and thinking about other people and other situations, Carpenter (2012).



Figure 1 Wing's Updated Triad of Impairment (2011)

Young people with ASD will also exhibit sensory atypicalities and although there is much variation in the way that children and young people with autism manifest these. Schaaf et al. (2012) estimates that 80-90% of young people with a diagnosis of ASD will experience difficulty processing sensory information and exhibit sensory challenges. For example, these include hypo-sensitivity, an under-responsive reaction to stimulation or hyper-sensitivity, an over-responsive reaction to sensory stimulation such as noise, touch or taste (www.autism.org.uk, n.d.) and unusual interests in some sensations (e.g., the feel of clothes or the smell of hair) Baird et al. (2006).

These sensory processing challenges are now reflected in an updated diagnostic criteria for ASD within the Diagnostic and Statistical Manual of Mental Health Disorders (DSM V) (APA 2012) which now includes sensory hyper- and hypo-reactivity (see Figure 1), Wing et al (2011).

It has been found that by supporting sensory needs in complex young people they can develop a heightened sense of self and improve their emotional well-being (autismeducationtrust.org.uk). Schools are now under increasing pressure to address the mental health needs of young people. As early as 2001, the Government demonstrated it recognised the importance of positive mental

health in underpinning success and achievement, encouraging schools to promote mental health and ensuring mental health issues are quickly recognised and treated (DfES, 2001).

Setting

Tor View Specialist Learning Community is a generic special needs education facility for students aged 3-19 years old. Within the school there are a large number of students with Autistic Spectrum Disorder and other co-morbid disabilities that present with sensory processing difficulties.

Working in this setting raises several questions: if we as practitioners are aware that young people and children with ASD are in our classrooms and schools, and have sensory difficulties, what are we doing to support these needs and develop our young people; and if we are aware that research supports sensory intervention as a key pedagogical tool in strengthening our young people as they transition into adult life how do we, as a learning community, support young people's sensory needs within a school context?

With these questions in mind, we trialled sensory interventions with one young man, Max, who was identified as having these difficulties within our school setting.

Max

Max is a 12 year old male with a diagnosis of Autistic Spectrum Disorder, Language Disorder, Severe Learning Difficulties and Complex Learning Difficulties and Disabilities. He is currently working at a pre-curriculum level and is assessed as operating at P7 across the curriculum. Max can present with a range of challenging behaviours when in school. These include running and climbing around the environment, hitting and kicking out at staff and peers and 'opting out' of activities by dropping to the floor.

Max has been at Tor View Specialist Learning Community for 5 years and has recently made the transition from the Key Stage 2 to Key stage 3. Ordinarily, the running of the secondary department means students access a consistent form room and then move from class to class to access lessons. It was decided that due to his level of challenge and learning needs Max would benefit from an individualised timetable.

Max was placed in a small group within a consistent class with six similar peers and provided with an alternative curriculum, designed to increase his engagement and provide intensive support for his behaviour.

His curriculum was developed around the pedagogies that are known to support young people with ASD. The adaptation of structured teaching including the use of photo timetables, photo schedules, clear routines, choice boards, PECS and TEACCH structure are widely seen as 'key tools' in Autism Education (Howley, 2015) and were all seen as conducive to Max. He was also disqualified from the National Curriculum, so that more personalised lessons could be developed, with an emphasis on engagement.

However Max found the change from primary to secondary difficult, his behaviour, which had been a challenge within the Primary department, deteriorated during his transition into the Secondary department. He struggled to engage with the majority of his timetable and became increasingly dependent on one to one staffing to support him.

Max had difficulty in engaging within the curriculum and began to exhibit heightened levels of challenging behaviour throughout his day. This was particularly concerning for staff supporting him

and his needs, and at times he was visibly distressed and becoming increasingly difficult to manage. This meant that proactive strategies were not effective for Max and staff were becoming increasingly reliant on the use of reactive strategies.

In order to keep Max, his peers and staff safe the use of Restrictive Physical Intervention (RPI) and also the use of seclusion was increased. Staff became increasingly reliant on the use of reactive strategies to support Max and he was held using techniques from Team Teach (www.team-teach.co.uk, n.d.), which is a behavioural support package to support children and young adults whom exhibit challenging behaviours. The use of Team Teach was not particularly helpful to Max and did not appear to calm him. It was therefore decided that Max should be escorted to the 'Time Out Area' to give him time and space to calm down. However when in 'Time Out Area' he remained anxious, took prolonged periods of time to calm down and to return to a state where he could access lessons. An example of these reactive behavioural strategies are detailed in an extract of the Behaviour Support Plan below

<p>When Max:</p> <ul style="list-style-type: none"> - Hits, kicks, bites staff or peers 	<p>We Will:</p> <ul style="list-style-type: none"> - Hold Max in a standing or seated wrap - Call for staff and use a 2 person single elbow to redirect him to the Time Out Area.
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Figure 2 Extract from Max's Behaviour Support Plan

Research Question

Looking holistically at Max's progress in school it was felt the adaptations to his curriculum were appropriate, the communication methods were sound and working well. All medical needs were constantly reviewed and discussed at length with the medical practitioners and his family. However we were still faced with a very anxious young man unable to fully access the pedagogical interventions in school due to his behaviour and anxieties. We felt that by addressing Max's sensory needs we could support him, allowing him to access the pedagogies in place in a calm manner

The question we asked was:

'Can sensory interventions, embedded into his daily timetable reduce the amount of challenging behaviour within school?'

It was proposed that by supporting Max's sensory needs as part of a holistic approach it will effectively reduce his anxiety and challenging behaviours.

Intervention

Initially the class Teacher and Specialist Physiotherapist completed a short assessment of Max to understand his sensory needs and to provide us with a sensory profile. This gave us a deeper understanding of Max's needs and where to begin to intervene. The results of the sensory profile showed us that Max may be under responsive to movement and would therefore seek movement in inappropriate ways within a range of environments to calm himself. He would climb window ledges and class tables to achieve more movement within the settings. This was believed to be due to his Vestibular Processing and his ability to calm himself using this sensory system. The Vestibular

System allows us to integrate information around us to understand where we are in space and how to move in and around that space, Lewis (2015).

Max was also very sensitive to touch and would seek deep pressure from staff and peers by pushing his head and chin into their bodies or hitting out so that he was held in RPI. He would also respond negatively to light touch, becoming distressed and challenging. It was understood that Max needed opportunities within his day to gain access to appropriate deep pressure and appropriate vestibular activities.

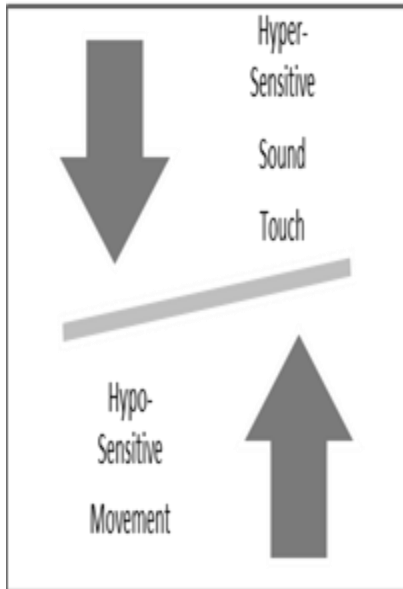


Figure 3 Hypersensitivity

Assessment
 Max was observed in the classroom setting and in the sensory interaction therapy room. Sensory questionnaires were completed by the school staff

School Companion Sensory Profile (Winnie Dunn Sensory Assessment)

Auditory	Definite Difference	Movement	Definite Difference
Touch	Definite Difference	Behaviour	Probable Difference

Findings
 Max is responsive to noise, seeks movement activities, likes deep pressure activities and has good balance skills. He likes feeling 'unbalanced'.

Strategies
 To help maintain an appropriate arousal and decrease sensory seeking behaviour, sensory interaction room sessions should be structured into Max's day. The usefulness of this strategy should be monitored by recording behaviour/incidents. Sessions should focus on vestibular/proprioceptive activities using the platform swing and sessions should end with a deep pressure activity. Opportunities for movement/proprioceptive inputs should also be built into Max's day.

Figure 4 Intervention Summary

Max's timetable was changed to allocate time for him to access the Sensory Intervention Room (SIT Room) between all major lessons. Max accessed the room for a maximum of 15 minutes and accessed this room with a Teaching Assistant (TA), Level 2 or 3, who had been trained to use the equipment and trained on his sensory needs. These are detailed in Figure 5.

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9.15-9.30	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure
9.30-10.15	Key skill lesson	Swimming	Key skill lesson	Key skill lesson	Key skill lesson
Morning Break 10.15-10.30	Access to vestibular and deep pressure	Providing proprioception, deep pressure and physical movement for Max.	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure
10.30-11.15	Lesson	Lesson	Lesson	Lesson	Lesson
11.15-11.30	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure
12.00-1.00	Lunch	Lunch	Lunch	Lunch	Lunch
1.00-1.20	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure
1.20-2.15	Lesson	Lesson	Lesson	Lesson	Lesson
2.30-2.45	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure	Access to vestibular and deep pressure

Figure 5 Max's Revised Timetable

Findings

IMPACT MEASUREMENT

Staff were required to record all incidents of challenging behaviour in the format below.

Staff recorded the amount of RPI and the amount of seclusion.

Name: M Behaviour Intervention Log Week Beginning: 8/9/14

Date	OVERALL TIME		STAFF	PLACE	LESSON	BEHAVIOUR					INTERVENTION				DURATION OF RESTRAINT / SECLUSION		INTENSITY OF RESTRAINT		
	Start	End				hitting out	Throwing objects	Refusal to comply	Banging	Shouting	Verbal / gestures prompt	Physical prompt	Change of face	Time out (Blue room)	Time out (Cafe out area)	T wrap	MIN	SECS	LOW
8/11/14	9:50	9:52	AD	YARD	Assembly	/					/				1	00			
2/11/14	2:44	2:47	AS	345	science	/						/			3	00			
2/11/14	2:49	2:54	AS	345	science	/					/				5	00			
9/11/14	9:10	9:12	AS	345	R&G				/			/			2	00			

Figure 6 Behaviour Intervention Log Sample

The numbers of incidents were collated over the academic year 2014-15 (see figure 6 – *impact measurement*). Autumn Term 1 provided a baseline for the number of challenging behaviour incidents that Max exhibited when receiving no sensory intervention. This resulted in 257 incidents of challenging behaviour.

RESULTS

Total Number of Incidents of Challenging Behaviour exhibited by Max during the Academic Year 2014-15

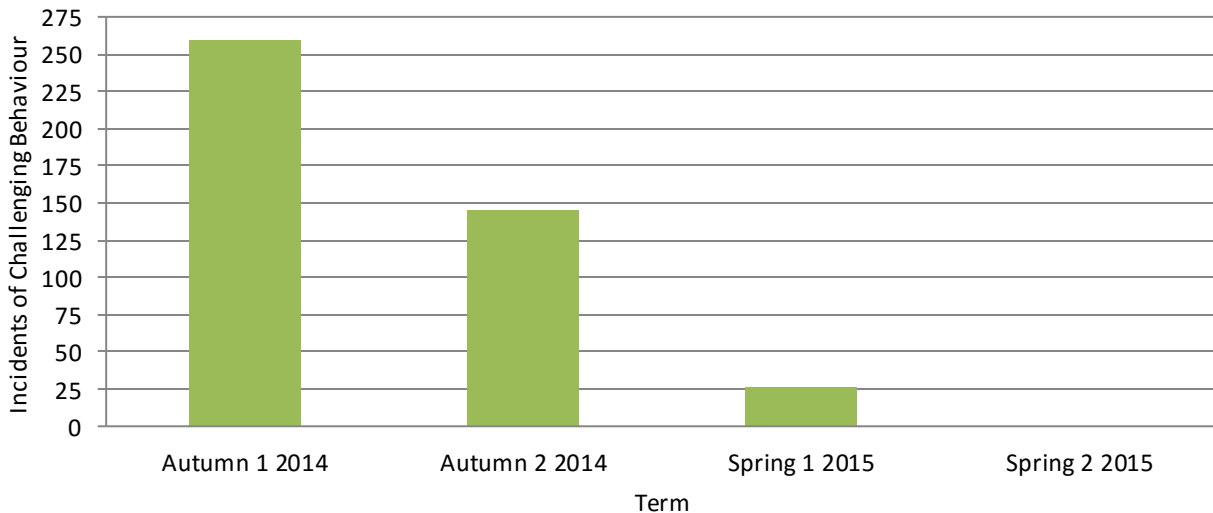


Figure 7 Total numbers of incidents of challenging behaviour

The sensory interventions were put into place at the beginning of Autumn Term 2, which began on the 3.11.2014. Although there was a steady decrease in the number of incidents per week for November, there was a spike in December, which was felt to be due to the changes in timetable and activities in the Christmas period.

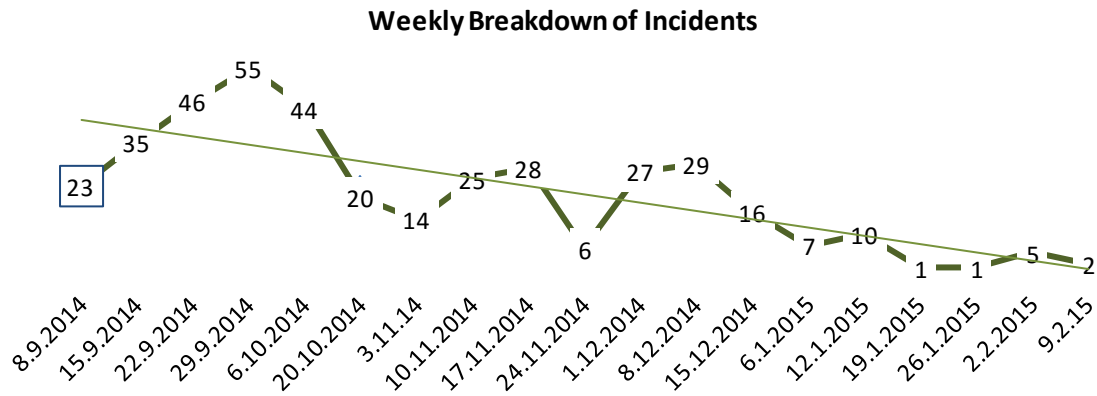


Figure 8 Weekly Breakdown of Incidents

The total number of incidents of challenging behaviour decreased rapidly when the interventions were put into place during Autumn Term 2. This was believed to be in direct response to Max using the SIT room at the allocated times throughout his day. The impact of these sensory interventions were also visible in the amount of RPI and seclusion that was used in a direct response to manage Max's challenging behaviour.

Total Number of Restrictive Physical Intervention

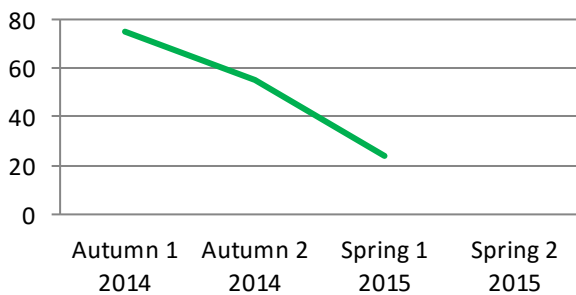


Figure 9 restrictive physical intervention

Total Number of Seclusion

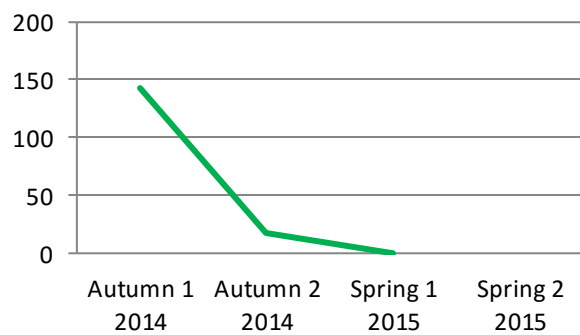


Figure 10 seclusion

STAFF FEEDBACK

One of Max's teachers was interviewed to discover whether the staff felt the intervention was having an impact. They described Max's behaviour at the start of the year, prior to the intervention, as 'difficult to manage'. Issues mentioned were Max's tendency to abscond from class, climb on desks and hitting out, a lack of engagement with learning or with others around him. This was felt to be reflected in the high number of incidents requiring physical intervention in the first term. Max was described as being in a state of constant agitation. There were issues of incontinence and it was felt that on occasion Max used this as a behavioural tool.

It was also felt that behaviours were triggered by Max's anger and frustration, and also his anxiety about changes in environment. The teacher went on to explain that Max's behaviour had changed significantly since the intervention. This was exemplified by his ability to now sit for extended periods. It was explained that since the intervention, Max will now sit for extended periods of time when working or awaiting further instruction. There have been fewer than ten incidents needing physical intervention in this time. Engagement and communication is improved and there are fewer continence issues which are no longer perceived to be a behavioural tool.

Additional benefits have been a decrease in anxiety, increased classroom engagement, and an improvement in Max's general well-being. Environment was felt to play a key role in Max's willingness to learn and that the intervention facilitated a safe learning environment for him. Although Max still sometimes hits out, this is felt to be to do with communication rather than sensory issues. As Max is now willing to work with a range of members of staff, instead of one or two individuals, he is now able to access all areas of school and a wider range of activities.

The outcomes for Max were felt to be 'unbelievable' and 'dramatic' but might not be forthcoming for other pupils without full vestibular sensory issues. It was added that the intervention had potential for other learners, although trial and error might be needed in identifying individual pupil's sensory needs

What have we found out and how can this influence our practice?

The impact that these interventions have had for Max have been vastly important to his well-being and education. The changes and adaptations that were taken have allowed Max to re-engage within the school life and curriculum and although he is unable to explicitly inform us, from conversations with staff and observations he appears to be a much happier young man while in school. Staff have reported significant changes in him and he is now in a position where other interventions can be put into place to support him and his learning.

Research Question Revisited:

'Can sensory interventions, embedded into his daily timetable reduce the amount of challenging behaviour within school?'

Although there were a number of other strategies that were put into place to support Max there was a clear link in the reduction of challenging behaviours exhibited when he has access to structured sensory intervention. It would be advantageous to continue to monitor and review the strategies to assess the longevity and impact as Max continues through school.

Recommendations:

1. A more detailed data collection would be advisable to ascertain the impact on learning of sensory intervention and over a more extended time period monitor the education progress that Max has made in response to these strategies.
2. More students with behavioural issues believed to be a result of sensory integration difficulties to access the SIT room to allow for a larger whole school impact to be ascertained.
3. A sound and robust referral system to the sensory specialist and SIT room to be developed and disseminated to the staff team.

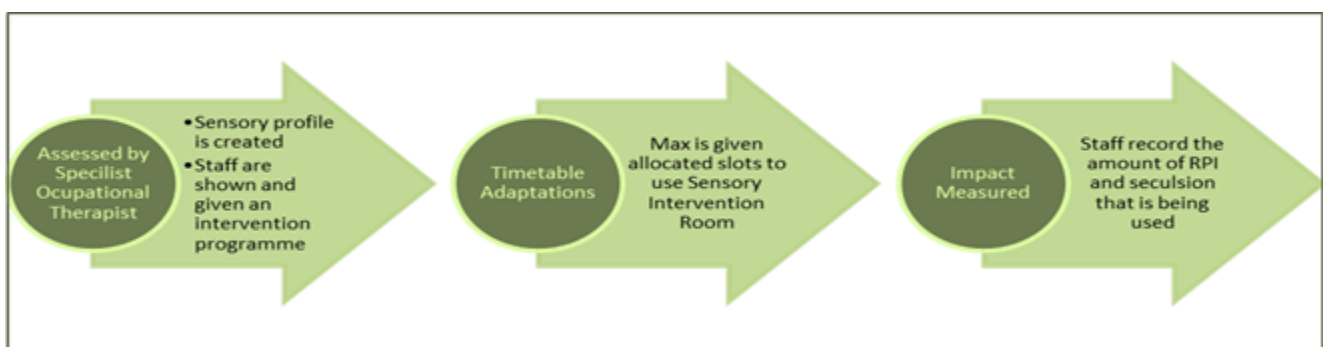


Figure 11 Intervention Model

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