Inclusive Pedagogy: Rethinking Autistic Students' Behavior Using Motor Planning and Sensory Regulation

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Please note that the authors have intentionally used identity-first (i.e., autistic student) language as many self-advocates prefer terminology such as "autistic," "autistic individual," or "autistic student" because the person is not separated from the autism. With the aim of honoring the individual autistic experience and desire to use the terminology preferred by autistic self-advocates, this manuscript uses identity-first language. We advocate use of identity-first language when that is how the individual or group being mentioned prefers; in other words, always respect the preference of the person being discussed.

Abstract

Research suggests that sensory regulation and motor planning are differences for autistic students (Hilton et al., 2012; Moran et al., 2013; Paton et al., 2012), but so often the first approach to supporting in schools comes from an understanding routed in behavior. Grounded in a critical disability studies in education theoretical framework (Ferguson & Nusbaum, 2012; Goodley et al., 2019), this article centers the voices of autistic self-advocates to understand their perspectives related to how their sensory and motor needs have been misunderstood as behavior. Counter-narratives provide the foundation to illustrate critical reframing of behavior, and then the authors provide implications for educational practice for both pre- and in- service educators, with pedagogical strategies that account for sensory-motor perspective of understanding autism.

Keywords: autism, behavior, motor planning, self-regulation, self-advocates, pedagogical strategies

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As autism becomes more prevalent, and more and more autistic students are included in general education classrooms and settings, it is crucial that we continue to seek to understand and better support our autistic students. To illustrate the importance of this, we offer a couple of examples from our own experiences as educators; in these, re-thinking what we knew about a student and the student's experience changed the approach to supporting the student within inclusive educational settings.

For the first example, an autistic student attending his local public school was struggling with the afternoon bus routine, specifically in getting on the bus to go home. As we observed the scene, a bottleneck occurred at a bus as a line of students was growing behind one student and three adults. The student had one hand on the railing but was standing firmly on the pavement. He raised his left leg up to the stair multiple times, each time setting it back down. The student's support team offered candy to motivate and reward good behavior (getting on the bus), prompted the student to "do it quick," and recorded his behavior to gather data of what they viewed as "non-compliant" behavior. It took re-thinking what was happening for the student through a sensory-motor perspective to then change the approach. After making this shift, the team offered visuals and support in planning what steps were involved in physically stepping up onto the bus to resolve the issue for this student.

The second example features a third-grade student with labels of autism and fragile x syndrome who was new to the school and soon after arriving was given a three-day suspension for repeatedly stripping in school. This student was known for his outfits which generally included coordinating bright color shirts, shoes and jeans. The team implemented

several behavior interventions to no avail. Finally, during the suspension, a paraprofessional asked if something about the clothes themselves might be bothering him; the student bought a shirt that they now cannot wear it because the seams were so scratchy. Everyone else was skeptical, but after several behavioral interventions were unsuccessful, the team determined it was worth considering the clothing. They then changed approach, working with the student's parents to offer options for clothes in the morning: the student chose sweatpants, Velcro shoes, and t-shirts which were more sensory friendly and caused much less stress throughout the day, minimizing the need to strip. In each of these examples, it was crucial to understand autism and what was going on for the student through the sensory-motor perspective of autism to support the student in navigating their educational environment successfully.

The purpose of this article is to support pre- and in-service educators to understand the sensory-motor perspective of autism through centering the voices of autistic self-advocates. In the following sections, first guiding research on autism, motor planning, and sensory regulation will be explored. Next, the theoretical framework that guides this article, critical disability studies, will be discussed. Third, the voices of autistic self-advocates who have written about their sensory regulation or motor planning differences are examined. Finally, the implications for educational practice and pedagogical strategies for pre- and in-service educators are discussed.

Guiding Research

Within federal special education law, autism is:

> a developmental disability significantly affecting verbal and nonverbal communication and social interaction…that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change

> or change in daily routines, and unusual responses to sensory experiences.
>
> (IDEA, 2004 [§ 300.8 (c)(1)(i)])

Researchers have long argued that sensory and motor differences are critical to recognize (Bluestone, 2005; Dhossche, 2004; Donnellan et al., 2013; Endow, 2006) and the phrase "sensory and movement differences" used in this article intentionally accounts for the complex interaction between these two, as well as the associated motor planning, catatonia, sensory processing, and echolalia (Donnellan et al., 2013; Thelen & Smith, 1994). It is important to note the word "differences" is used to suggest that "unusual challenges and exceptional skills can exist side by side, in the same brain domains" (Amos, 2013, p. 140).

Motor impairments have been routinely documented in the literature as impacting autistic students (Boucher, 2003; Hilton et al., 2012; Liu, 2012; Ming et al., 2007), and even for desired "movements involving simple grasp and reach-to-grasp sequences," motor difficulties interfere with hand coordination (David et al., 2012, p. 324). In the first example mentioned, motor-planning was at the core of the student struggling to get on the bus. Once this was considered, the student could be supported successfully. Research suggests that sensory processing has long been an associated difficulty for students with disabilities (Jasmin et al., 2008; Moran et al., 2013; Paton et al., 2012; Tomchek & Dunn, 2007). As Robledo et al. (2012) suggest, we might we see this "behavior as less a social inadequacy that fits our definition of autism than an individual's best attempt to overcome a sensory problem that otherwise would interfere with [his] attempt to interact" (p. 68). In the second example mentioned, the student's behavior of stripping was ultimately understood to be the student's attempt at sensory relief from uncomfortable and unbearable clothes. Robledo et al. (2012) state, "Sensory and movement differences is [sic] a disruption in the organization and regulation of perception, action, posture, language, speech, thought, emotion, and/or

memory" (p. 68).

Grounded in a critical disability studies theoretical framework, we center the perspectives of autistic individuals to give them power and agency; this all points to the importance of recognizing the motor planning and sensory complexities inherent in the experiences that autistic individuals share. According to advocate and scholar Linton (2005), disability studies "aims to expose the ways that disability has been made exceptional and to work to naturalize disabled people" (p. 518). Ferguson and Nusbaum (2012) describe disability studies as an interdisciplinary field that can be messy and complicated. They state the following about its core concepts: the study of disability must be (a) social, (b) foundational, (c) interdisciplinary, (d) participatory, and (e) values-based (pp. 72-75).Ware (2009) explains the importance of critical analysis in disability studies in education, stating "In the absence of such critical analysis educators will continue to deny the intrusive paternalism of the existing system, disbelieve that the system reinforces stereotypes of dependence and inferiority, dismiss the logic of the social construction of disability, and dispute their own complicity in pathologizing disability" (p. 108). Critical disability studies recognizes "alliance to praxis" (Goodley et al., 2019, p. 976) and as such, in educational practice, it serves to provide a framework to understand disability, actively end institutionalized discrimination, and advance equity and justice for individuals with disabilities.

As a category, autism has been pathologized in schools and society. Our critical disability studies theoretical framework provides a lens through which to consider accommodations and equity for autistic students in schools. In alignment with such a lens, this article purposefully centers first-person perspectives, voices, and experiences of autistic individuals. As self-advocate Sabrina Guerra (2022) explains, "To be an ally means radically

respecting a person and trusting their perspective on their lived experience." By listening to self-advocates who describe motor, movement, and sensory differences, educators can begin to strengthen their reflexivity, critique the general framework of behavioral support in schools, and enact explicit analysis of their own pedagogical practices for supporting behavior. Inherent within this theoretical framework, critically conscious educators evaluate the existing structures of behavior management, the school-based behavior data collection methods and the over-reliance on behavior compliance. They also recognize sites of injustice and inequity as a result of classroom behavioral practices and reimagine more humanistic behavior supports for students with a range of needs that take into account the nuanced motor, movement, and sensory differences present. From this level of critical consciousness, a shift towards structural changes in how the actions of autistic students are understood, framed, and responded to within our public schools can occur by inclusive-oriented critical educators.

Voices of Self-Advocates

Voices of autistic individuals have been left out of conversations of research-based practices, and how we understand autism and ultimately support autistic students. We are fortunate to live in a time that we can understand autism from first-person accounts of lived experiences (Biklen & Burke, 2006; Mukhopadhyay, 2000; Pena, 2019; Rajapatirana, 2015). In this section, the voices of self-advocates are centered. Criteria for selecting include: 1) publicly available written or record work; 2) self-identified as autistic; and, 3) expressing sensory and/or motor experiences navigating the world. In the larger body of literature, there is not a great deal of discussion on sensory and motor differences, the experiences of autistic students, and how this impacts their experience in schools; thus, these autistic individuals offer a unique perspective. As Sabrina Guerra (2022), who describes herself as a nonspeaking

advocate for change, urges, "Listen with an open mind and generous heart to feedback from disabled voices." Biklen (2005) argues the importance of literature that centers the perspective and experiences of autistic individuals:

> In one central way, their accounts diverge dramatically from the prevailing clinical literature … Their richness suggests the danger of privileging other forms of research about autism as more deserving of authority or as being in some way uncontestable. Their forcefulness and consistency should signal clinical researchers to question every assumption brought to the topic of autism. (p. 281)

Behaviorism, and how it is used in school-based interventions, fails to give authority to autistic individuals. The centering of autistic voices has provided new understandings for actions and experiences traditionally seen only through the lens of behavior.

As Sue Rubin (2013), a college graduate and autistic advocate, states, "what was seen as non-compliance, was actually the inability of my body to follow the directions in my brain." Here we see Sue naming her lived experiences as being misunderstood when her body presents challenges with motor planning. Sue further explained:

> The awful … movement disorder was canceling out my intelligence. I experience awful basic paralysis when I want to walk. If someone asks me to do something and I don't respond, they assume I didn't understand the request. Actually, I hear the request and can't move. I also lack the ability to modulate movement. I walk very slowly or run.

One common theme in discussions around autism is non-compliance, and Sue explains the connection with motor movements. To further illustrate this, Chandima, an advocate and co-president of the EASE Foundation says:

> Helplessly I sit while Mom calls me to come. I know what I must do, but often I can't

> get up until she says, 'Stand up.' [The] knack of knowing where my body is does not come easy for me. Interestingly I do not know if I am sitting or standing. I am not aware of my body unless it is touching something … Your hand on mine lets me know where my hand is. Jarring my legs by walking tells me I am alive (in Wallis, 2006).

Knowing where his body is in space is difficult for Chandima without touch, and complying to verbal questions requires direct phrasing. Educators often talk about autistic who do not quickly respond to directions, do not stop doing something when asked, and/or bump into objects, all of which they typically see through the lens of behavior. Here, Sue and Chandima push back on this prevalent narrative by explaining ways actions are not intentional non-compliance but instead represent the ways in which motor movement planning and body awareness do not occur as intended.

In the words of Jamie Burke, an autistic individual:

> … more important, is the piece that motor planning ability does not exist and that I cannot plan movement. It does not mean that I do not want to initiate that movement. This of course, affects being able to speak, even though I can "see" all the language in my brain. Can you possibly attempt to comprehend the anger and frustration that I feel, or that students feel, because of this? I hear statements of others regarding "bad behavior," and I try to elevate my soul to stay calm when others assumed I was unable to understand what they were saying, thinking I was not intelligent. …The issue of Sensory Integration is a vast system of deregulation, where many of my difficulties reside. Can you imagine how crazily hard this is for us who have autism, when our systems are so incredibly mis-matched with what is expected and then with what actually happens? Each experience must be sorted out and interpreted almost every

> single time. Immense frustration, trouble staying calm, and negative emotions emerge. (Burke, 2019

Jamie's perspective has vast implications for educational practice. First, he explicitly names ways in which planning motor movements is challenging for him, including in connection to reliably and on demand producing verbal speech. Furthermore, Jamie calls out how frustrating it is for this motor-planning breakdown to be misread as behavior. Jamie also clearly highlights the ways in which sensory dysregulation is a component to the motor-planning challenges he experiences. In other words, sensory regulation supports his motor-planning processes. Opportunities for sensory regulation are not often prioritized in schools, which impacts students' abilities to plan motor movements and engage in required academic tasks.

Brianna Dickens, an advocate and scholar who identifies as autistic, discussed a motor support that created a sensory nightmare for her:

> As a kid I received lots of OT services, because of motor planning and things I needed some support in learning how to make my body do what I wanted. But one of the OT tasks that I had every day was the Operation game. So that's that game with the guy on the table and it has the little bitty tongs, and you have to take the little bitty bones and put it in the correct hole. If you do not get it quite right in the hole, if the tongs hit at all or the piece doesn't fit right in, the game buzzes and some even make noise, so they scream at you or buzz at you, and it flashes… And so I was never good at the game, so all it did was buzz at me because I could never get the piece in the hole correctly. So I hated the game. At that point I had no reliable communication, so I threw a ton of temper tantrums and that didn't work, I still had to do the Operation game, so I came up with a brilliant plan to get out of the Operation game. So one day

> I run to the classroom before the TA and I eat all of the Operation pieces. *And it worked.* I did not have to play the Operation game again, but people were not happy with me, and they saw it as a negative behavior, whereas I thought I was brilliant because I came up with a good plan to tell them I was not playing this anymore. (Dickens & Causton, 2019)

While the game of Operation was used by the adults supporting Brianna as an attempt to make fine motor practice fun, this motor planning exercise created sensory conditions that were so uncomfortable that she decided her best option was to make the pieces disappear, something that would typically be viewed as dangerous and as behavior by school team members.

Poignantly, Sabrina (2022) describes the ways her motoric and muscular movement were labeled as "maladaptive behavior" because of inconsistent responses to classroom demands:

> I was constantly assigned negative motivations for my actions. Motorically, my body doesn't respond to my will. People have so many misconceptions about autistic people and non-speakers. I am able motorically to respond to a request sometimes … Teachers think I'm not listening or not trying. … My body and my mind do not act in unison. I'm compelled to empty containers of liquid. I don't mean to affect anyone. I wanted the windows closed and blinds up so I could look out for shooters. Teacher always told my paras I had to be kept quiet during drills or they'd all be in danger. I was terrified of being a reason my friends would be killed. Teachers called it maladaptive behavior.

Sabrina reveals a disconnect between body movement and mind interaction, and this being a "motorically" issue that gets framed or is "assigned negative motivations." Revealing

reflexivity, Sabrina is aware of the impact of her actions on others, reflected in her saying "I don't mean to affect anyone" as well as her being afraid for her friends in an possible active shooter situation. Her powerful words have importance for educational practice: listening to her voice allows attribution of actions to motor or safety concerns and dismisses any inkling of non-compliance and "behavior."

We offer perspectives from autistic individuals as counter-narratives to the behaviorism-driven lens that is often used to make sense of the actions of autistic students in our schools. More specifically, these narratives give agency to autistic individuals through an alternative viewpoint that offers a deeper understanding and explanation of the motor-planning and sensory differences that is often interpreted as behavior.

Discussion and Implications for Educators

As illustrated in the offered scenarios and supported by research, the self-advocate's perspectives sensory and motor differences are central to how autistic individuals interact with and experience the world. Oftentimes, educational teams determine specific behaviors that they seek to collect data on and replace with other behaviors. When autistic students consistently demonstrate these so-called peculiar behaviors, these become justification for their removal. Instead, we advocate for teachers to understand, ask questions, and critically analyze these common behaviors. In the first example offered, we considered a student who was standing at the bus lifting his foot multiple times but not starting up the stairs. For this student, candy rewards and repeated reminders to "do it quick" were offered as supports, but upon further consideration and observation, the team determined that the student was actually having a difficult time with the motor-movement of making the first large step up onto the bus. With the support of the occupational therapist and visual supports, he was quickly able to successfully make the first step and board the bus with ease. Without considering the

motor-planning components of this moment, the team would have continued to offer supports not aligned with his actual needs. For the second student introduced, his team was making dangerous assumptions about his intent when he was removing his clothing in schools. Quickly known around the building as a "stripper," which comes with specific sexual connotations, the misunderstanding of this student's actions had damaging impacts on how he was perceived as a member of his school community. His need was sensory comfort, and the response that he received was punishment and exclusion. This example highlights why it is essential for educators to consider the sensory experiences of students in their classrooms. In Table 1, based on the conversation within this paper that highlights voices of autistic students, examples of practice, and our own professional practice, pedagogical strategies that take into account the needs of sensory regulation and motor planning for autistic students are provided. First, these common behaviors are named with specific movement differences, as they often are labeled in schools. Then, a description of this rethinking process of what autistic students actually need, from a motor planning and sensory lens is shared. Robledo et al. (2012) state, "Sensory and movement differences is a disruption in the organization and regulation of perception, action, posture, language, speech, thought, emotion, and/or memory" (p. 68). Once these behaviors are analyzed from a sensory-motor perspective, then specific school-based strategies to implement based on the specific motor planning or sensory need are provided.

Table 1

Sensory-Motor Pedagogical Strategies

Common "Behaviors"	Rethinking from a Motor Planning and Sensory Lens	Strategies to Implement Sensory-Motor Pedagogical Strategies
Movement · *Running* · *Repetitive or rhythmical movements* · *Walking, pacing around the classroom* · *Jumping* · *Bumping into objects* · *Hyperactive behaviors*	For many autistic students, movement provides proprioceptive input for their sensory system. It allows them to feel where their body is physically in space. The sensory input provides students information about their movements and body position. Students will engage in these movements in order to regulate their sensory system, which then often allows them to better process and plan motor movements being asked of them. By engaging in the movement students are regulating their sensory system and are better able to participate in classroom instruction and activities.	● Designated walking space ● Sensory options that provide proprioceptive input (trampoline, pushing/pulling objects, carrying heavy objects) ● Fidget bin with a variety of options ● Seat cushion and standing desk for sensory input and movement ● Break time for movement prior to academic tasks ● Physical Activity Choice Menu (jumping jacks, sit ups, bouncing on an exercise ball, workout strength bands, etc.) ● Method to signal to the teacher a need for sensory input ● Provide more opportunities to move in the classroom

Non-Compliance · *Not following classroom expectations or directions* · *Ignoring verbal questions or requests* · *Overreaction or Underreaction to demands and requests* · *Impaired social awareness*	After a teacher gives classroom direction, the student does not immediately follow it. Oftentimes, the autistic students are perceived as ignoring classroom expectations. From this perspective, what we are actually seeing is a student who (1) is able to understand what the teacher is asking but has not processed and planned the motor movement required, or (2) who is so sensory dysregulated, they are unable to complete the request.	● Provide directions in a different format (e.g., visual directions and pre-recorded audio directions) ● Provide a peer model to show an example of the motor movement ● Provide gestural cue to show action ● Provide a visual prompt that depicts the classroom expectation ● Use a combination of the cues above to allow the student to receive the direction information, make a motor plan, and follow the direction ● Provide wait time for the student to execute the motor plan ● Provide a "schedule within a schedule," meaning both the daily schedule as well as the subset of tasks within each academic subject ● Minimize verbal input, provide visual sequential directions ● Monitor checklist for tasks ● Provide choice (e.g., materials, task order, seating options). When order is irrelevant, elicit student feedback.

Stimming · *Rocking* · *Flapping* · *Repetitive Movements* · *"OCD" or "Anxiety" type movements* · *Repeatedly touch an object* · *Fixation on specific item(s)* · *Using a preferred toy*	Many autistic students are positioned as engaging in stimming-type behaviors, such as rocking or flapping objects in their line of vision. From a sensory perspective, it is important to recognize that actions that fall into a traditional category of "stimming" are sometimes ways that students will seek to regulate their sensory systems. From a motor-planning perspective, these same actions might be a way for them to prepare their motor system for a task or action they are about to undertake. While often framed as a way for a student to "escape," these very actions may in fact be helping them prepare to engage in what is being asked of them within the classroom.	● Timed opportunities across the day to engage in preferred stim activities ● Sensory regulation opportunities at regular intervals offered proactively and in the classroom (e.g., deep pressure, weighted objects) ● Planned time to engage in movements or routines ● Written and visual directions minimize overload ● Items that provide comfort should be available for their use, as these allow for self-regulation ● Provide a way to advocate for a break as needed, that is respected when used (non-contingent) ● Use anchor charts with strategies students can use when feeling anxious or need to calm their minds and/or bodies (e.g., deep breathing, listening to music, fidget objects, moving to a quiet area, walk break, meditation, and yoga movements)

Varying Abilities (Speech and/or Motor) · *They could do it yesterday* · *Do it Quick* · *Echolalia* · *Articulation*	Autistic individuals have different levels of being able to perform motor activities and oral motor movements, oftentimes impacted by how well regulated their sensory system is at any given moment. From a motor planning perspective, they hear and understand the information being asked, are in the processing information stage, and preparing for executing that motor movement or speech pattern. Recognize that articulation abilities vary, meaning that autistic students may need to intentionally plan the oral motor movement or the arm and finger actions required for typing.	● Provide wait time to allow autistic students to listen, process, plan the motor movement, then execute ● Listen for content shared, by speech or in writing, by an autistic student instead of focusing on the quickness of response (accuracy over speed) ● Recognize that all humans have good and not so good days, including your autistic students ● Have differentiated materials with varying levels of scaffolding and support ● Use multiple means of communication (e.g., communication board, typing, choices between preferences, PECs)

The "behavior" that autistic students have in the classroom is far more complex than movement, non-compliance, stimming, and varying abilities. Research suggests "that in autism this disruption of organization and regulation is amplified in terms of quantity, quality, intensity, and may affect everyday life" (Robledo et al., 2012, p. 68). For autistic individuals, it is differences in sensory, body feedback and awareness, and where the body is in space that can contribute to sensory-motor differences that often constrain their ability to act with socially constructed school norms.

Implications for Educators

Alternatively, these intentional actions provide essential information about motor and sensory needs and offer a signal indicating help is required. Instead of reading behavior as

being intentionally defiant, determine a better approach for supporting. As Donnellan et al. (2013) argue, "...observed behaviors may be artifacts of the difficulties a person may be having in organizing and regulating sensation and movement. Still others may be subtle signals of the desire for relationship or expressions of meaning" (p. 73). When coming from a sensory-motor difference perspective, the following are key implications for educators when supporting autistic students:

Humanistic Behavior Supports

Ensure that autistic students feel a sense of belonging, community, and connection with peers and teachers. Autistic students need to feel they are authentically valued, respected, and wanted in ways that are not reliant on being able to engage in normed ways. A humanistic perspective allows us to see the multitude of ways that students bring unique gifts to learning environments, and that their worth in the space is not dependent on doing and being in the ways that are traditionally valued such as sitting still and answering questions verbally. Develop relationships with autistic students (Amos, 2013; Causton et al., 2015). As Lovett (1996) states, "A positive approach invites people to enter into the same sort of relationship that most of us treasure: ongoing, with mutual affection and regard" (p. 137). Get to know their strengths, interests, communication styles, and learning preferences. Aim to use language, procedures, behavioral expectations, learning experiences, and materials that are least harmful for autistic students. This is most salient in listening to Sabrina (2022):

> I ask everyone to appreciate I have a heart that aches, as yours would, when people make fun of me. You are needed as allies and soul defenders. [P]lease choose to respect me. Kindness is important, but respect is critical to acceptance and equality. I encourage everyone to live authentically. I expect my movements and vocalizations will be accepted as simply a part of all that makes me who I am. (Guerra, 2022)

Most importantly, work *with* (not *on*) autistic students (Lovett, 1996), with the intention of positioning each as an expert, the authority of what it means to experience autism with sensory and motor differences.

Focus on Academics, Not Behavior

It is essential to forefront academics and access, not the behavior, of autistic students. Often educators think that behavior is a barrier to learning, but rich curricular access and inclusion increase engagement in learning and decreases challenging behavior. Ensure students are within the same physical environment and are involved in learning experiences with neurotypical peers. Modify academic tasks that invite autistic students to use their communication device to respond to prompts and interact with peers. Focus on adjusting these items, before focusing on "behavior." Exclusion in the learning environment often is the root cause of an autistic student's "behavior."

Presuming Competence

Beginning with the assumption that autistic students are experts and the authority on their experience in the classroom, start with the mindset that autistic students are intelligent, that each has the ability and desire to learn, and can share information about their sensory and motor planning differences. As Sabrina reveals:

> Respect is not something I have become familiar with so far in my lifetime. People have mistreated, abused, and harmed me. To them I was a substandard human; something to pit or fix. They treated me as if I had a disease, and I internalized that fear and hatred. My mom fought for people to presume competence and treat me as an equal, but few did. … Being non-speaking, many people assumed I was non-thinking and non-feeling… I've come to an austere revelation. So long as society equates worth with intellect, disabled lives are in peril. (Guerra, 2022, para 2-4)

As Biklen and Burke (2006) explain, “this is a situation that demands a kind of compact between teacher and student to choose the most optimistic stance possible, what we have called ‘presuming competence’, within which to effect inclusive education” (p. 172). Challenging behavior is often misread. Ask autistic students what their behavior is signaling. Dialogue about behavior with students is critical, and hearing from students themselves will give insight about environmental, sensory, motor planning, or relational items that can be adjusted.

Conclusion

The critical challenge to educators is to relook at “behavior” exhibited by autistic students to consider the motor planning and/or sensory regulation reasons. Research has shown the presence of complex sensory-motor needs for autistic individuals (Fournier et al., 2010; Jansiewicz et al., 2006; Whyatt & Craig, 2013), and this needs to be understood and examined as a possible framework for the rationale of behaviors. What is often framed as a challenging behavior to fix, replace, and remediate, in reality, is an issue of the motor planning components required to execute that action. Understanding the sequential motor movement process needed for certain requests, academic tasks, and school routines will help educators identify which portion causes an issue. Then support with the processing of that motor plan and executing the action can happen. We also need to move to a place in our schools where we recognize sensory regulation as an essential component of teaching. While days are full of learning experiences that students are required to complete, the voices of self-advocates and the vignettes within this article demonstrate that sensory regulation must be valued. When students are dysregulated, this can impact their motor planning processes and their ability to engage.

References

Amos, P. (2013). Rhythm and timing in autism: Learning to dance. *Frontiers in Integrative Neuroscience*, *7*(27), 138-152. https://doi.org/10.3389/fnint.2013.00027

Biklen, D. (2005). Autism and the myth of the person alone. In Autism and the Myth of the Person Alone. New York University Press.

Biklen, D. P., & Burke, J. (2006). Presuming competence. *Equity and Excellence in Education*, *39*, 166-175. https://doi.org/10.1080/10665680500540376

Bluestone, J. (2005). *The fabric of autism: Weaving the threads into a cogent theory*. Sapphire Enterprises.

Boucher, J. (2003). Language development in autism. *International Journal of Pediatric Otorhinolaryngology*, *67*(1), 159-163. https://doi.org/10.1016/j.ijporl.2003.08.016

Burke, J. (2019). *Motor-planning and typing to communicate* [conference presentation]. The Institute on Communication and Inclusion Introductory Workshop in Supporting Communication, Syracuse, NY.

Causton, J., Tracy-Bronson, C. P., & MacLeod, K. (2015). Beyond treats and timeouts: Humanistic behavioral supports in inclusive classrooms. *International Journal of Whole Schooling*, *11*(1), 69-84.

Danforth, S., & Boyle, J. (2007). *Cases in behavior management* (2nd ed. ed.). Pearson Education.

David, F. J., Baranek, G. T., Wiesen, C., Miao, A. F., & Thorpe, D. E. (2012). Coordination of precision grip in 2-6 years-old children with autism spectrum disorders compared to children developing typically and children with developmental disabilities. *Frontiers in Integrative Neuroscience*, *6*(122), 314-326.

https://doi.org/10.3389/fnint.2012.00122

Dhossche, D. M. (2004). Autism as early expression of catatonia. *Medical Science Monitor*, *10*(3), 31-39.

Dickens, B., & Causton, J. (2019, September 9). The Inclusion Podcast. In *My (Un)Special Education: Behavior*.

Donnellan, A. M., Hill, D. A., & Leary, M. R. (2013). Rethinking autism: Implications of sensory and movement differences for understanding and support. *Frontiers in Integrative Neuroscience*, *6*, 72-82. https://doi.org/10.3389/fnint.2012.00124

Endow, J. (2006). *Making lemonade: Hints for autism's helpers*. Cambridge Book Review Press.

Ferguson, P. M., & Nusbaum, E. (2012). Disability studies: What is it and what difference does it make? *Research and Practice for Persons with Severe Disabilities*, *37*(2), 70-80. https://doi.org/https://doi.org/10.1177/154079691203700202

Fournier, K. A., Hass, C. J., Naik, S. K., Lodha, N., & Cauraugh, J. H. (2010). Motor coordination in autism spectrum disorders: A synthesis and meta-analysis. *Journal of Autism and Developmental Disorders*, *40*(10), 1227-1240. https://doi.org/10.1007/s10803-010-0981-3

Gill, M. (2015). *Already doing it: Intellectual disability and sexual agency*. University of Minnesota Press.

Goodley, D., Lawthom, R., KLiddiard, K., & Runswick-Cole, K. (2019). Provocations for critical disability studies. *Disability & Society*, *34*(6), 972-997. https://doi.org/10.1080/09687599.2019.1566889

Guerra, S. (2002, September 18). I was constantly assigned negative motivations for my actions. https://www.facebook.com/SabrinaGuerraNonspeakingAdvocate

Guerra, S. (2022, August 23). I labored over this presentation for my new classmates. https://www.facebook.com/SabrinaGuerraNonspeakingAdvocate

Guerra, S. (2022, May 16). Rewarding disabled students. https://www.facebook.com/SabrinaGuerraNonspeakingAdvocate

Guerra, S. (2022, September 9). Students like me face unacknowledged ableism and resentment daily. https://www.facebook.com/SabrinaGuerraNonspeakingAdvocate

Hilton, C. L., Zhang, Y., Whilte, M. R., Klohr, C. L., & Constantino, J. (2012). Motor impairment in sibling pairs concordant and discordant for autism spectrum disorders. *Autism*, *16*(4), 430-441. https://doi.org/10.1177/1362361311423018

Ignagni, E., Schormans, A. F., Liddiard, K., & Rundswick-Cole, K. (2016). 'Some people are not allowed to love': Intimate citizenship in the lives of people labelled with intellectual disabilities. *Disability & Society*, *31*(1), 131-135. https://doi.org/10.1080/09687599.2015.1136148

Individuals with Disabilities Education Act 20 USC § 1416, (2004).

Jansiewicz, E. M., Goldberg, M. C., Newschaffer, C. J., Denckla, M. B., Landa, R., & Mostofsky, S. H. (2006). Motor signs distinguish children with high functioning autism and Asperger's syndrome from controls. *Journal of Autism and Developmental Disorders*, *36*(5), 613-621. https://doi.org/10.1007/s10803-006-0109-y

Jasmin, E., Couture, M., McKinley, P., Reid, G., Fombonne, E., & Gisel, E. (2008). Sensori-motor and daily living skills of preschool children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *39*(2), 231-2341. https://doi.org/10.1007/s10803-008-0617-z

Kearney, A. J. (2015). *Understanding applied behavior analysis: An introduction to ABA for parents, teachers, and other professionals* (2nd ed. ed.). Jessica Kingsley Publishers.

Kedar, I. (2020, January 24). *No dog training for humans*. Ido in Austismland. http://idoinautismland.com/?p=942

Linton, S. (2005). What is disability studies? *Pmla*, *120*(2), 518-522.

Little, S. G., & Akin-Little, A. (Eds.). (2019). *Behavior interventions in schools: Evidence-based positive strategies*. American Psychological Association.

Liu, T. (2012). Motor milestone development in your children with autism spectrum disorders: An exploratory study. *Educational Psychology in Practice*, *28*(3), 315-326. https://doi.org/10.1080/02667363.2012.684340

Lovett, H. (1996). *Learning to listen: Positive approaches and people with difficult behavior*. Paul H. Brookes Publishing.

Ming, X., Brimacombe, M., & Wagner, G. C. (2007). Prevalence of motor impairment in autism spectrum disorders. *Brain Development*, *29*, 265-270. https://doi.org/10.1016/j.braindev.2007.03.002

Moran, M. F., Foley, J. T., Parker, M. E., & Weiss, M. J. (2013). Two-legged hopping in autism spectrum disorders. *Frontiers in Integrative Neuroscience*, *7*(14), 301-308. https://doi.org/10.3389/fnint.2013.00014

Mukhopadhyay, T. R. (2000). *Beyond the silence: My life, the world, and autism*. National Autistic Society.

Paton, B., Hohwy, J., & Enticott, P. G. (2012). The rubber hand illusion reveals proprioceptive and sensorimotor differences in autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *42*(9), 1-14. https://doi.org/10.1007/s10803-011-1430-7

Pena, E. V. (2019). *Leaders around me: Autobiographies of autistics who type, point, and spell to communicate*.

Rajapatirana, C. (2015). *Traveler's tales: My journey with autism*. Perera-Hussein Publishing House.

Robledo, J., Donnellan, A. M., & Strandt-Conroy, K. (2012). An exploration of sensory and movement differences from the perspective of individuals with autism. *Frontiers in Integrative Neuroscience*, *6*, 107. https://doi.org/10.3389/fnint.2012.00107

Rubin, S. (2013, October 29). *An invitation to see autism as I do*. https://sites.google.com/site/suerubin696/platform

Thelen, E., & Smith, L. B. (1994). *A dynamic systems approach to the development of cognition and action*. MIT Press.

Tomchek, S. D., & Dunn, W. (2007). Sensory processing in children with and without autism: A comparative study using the short sensory profile. *The American Journal of Occupational Therapy*, *31*(2), 190-200. https://doi.org/10.5014/ajot.61.2.190

Wallis, C. (2006, May 7). Inside the autistic mind. *Time*. https://content.time.com/time/subscriber/article/0,33009,1191843,00.html

Whyatt, C., & Craig, C. (2013). Sensory-motor problems in autism. *Frontiers in Integrative Neuroscience*, *7*(51), 218-229. https://doi.org/10.3389/fnint.2013.00051

Young, S. (2011). *Real people, regular lives: Autism, communication, and quality of life*. Sally R Young.