

The Honors Program at the University of Missouri-Kansas City

Inclusivity in Action: Proposals for Shifting Views on Neurodiversities in Schools for Better
Outcomes in Elementary Education and Beyond

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Abstract

The United States education system is struggling to keep pace with the current learning needs of students as learning needs are fluid and this system is static. An increasing number of students are being recognized as having neurodiversities. Schools need to be able to adapt to all learners' unique strengths and challenges to better support all students. This paper examines how an evidence-based understanding of neurodiversity can shift the way disabilities are thought about in schools and lead to positive changes for students and potentially society. This paper also gives recommendations on how both schools and individual teachers can help create more inclusive environments. Current literature is reviewed and discussed covering important ideas in the fields of disability studies and elementary education. This includes defining neurodiversity, the social model of disability, strengths-based education, and models of inclusive education. Finally, recommendations are made for teachers to implement inclusive practices in individual elementary-level classrooms.

A five-year-old boy started kindergarten very excited to learn and make friends. However, he quickly became frustrated that he was asked to sit still in his seat and focus for most of an eight-hour day. He would start to run around the room after about twenty minutes of instruction and work time and then would be sent to the focus/recovery room for the rest of the day. When he had to leave each day he would run away from his teachers and the crowded gym of students waiting to leave. He would frequently demonstrate disruptive behaviors such as being out of his seat, wandering to places he shouldn't be, talking out of turn, and once even pulling the fire alarm.

After two weeks his mother was asked to pick him up thirty minutes earlier to avoid having to wait in the gym with the other students at normal pick-up time. However, he continued to have disruptive behaviors during the day, and after another month, his mother was told he would only be allowed to come for the first two hours of the day. During this time his mother was still occasionally asked to pick him up early, and he spent almost all of the two hours he was at school in the focus room. His parents eventually decided to pull him from school to homeschool him.

During this entire time, he was on a waiting list to be diagnosed with Autism Spectrum Disorder and Attention Deficit Hyperactivity Disorder (ADHD), which he eventually was about a year later. His diagnoses explain all the behaviors he showed at school. He struggled to sit still and focus for a long time because of ADHD. He would run away from his teachers at dismissal time because he was stressed from the noise and overstimulation of that environment. He pulled the fire alarm and talked whenever he wanted because impulsivity is a very common trait in ADHD.

He could go back to school now and possibly get more support than he was given before. However, would his behavior still be seen as “bad behavior” instead of communicating needs? When he is asked if he goes to school, he states, “No, I was fired from school. I go to school at home now.” When asked if he wants to go back to school, his eyes well up and he starts to sound a bit panicky. His view of school is now negative and it will probably be a struggle to get him back into a classroom full-time, especially without accommodations or modifications to his schedule put in place.

ADHD and autism are neurodiversities, which are considered disabilities. Unfortunately, disabilities are still stigmatized in most societies. They are made to seem “othering”. This “othering” makes it hard for those with disabilities to feel completely accepted by society. For this child, his behavior was seen as just “bad behavior” and not a way to communicate his needs the only way he knew how. We have a culture of seeing people who do things differently as being difficult when really, we are being difficult by not being accommodating. After all, if a large part of the student population is not being understood regarding how they think and learn, how can they be expected to understand the material? This culture is what can change through utilizing new models of disability and different learning models.

Through analyzing texts, I intend to explain neurodiversity and why shifting the way disabilities are thought about in school is better for students as well as society. This will combine several sources to help define neurodiversity, different models of disability, and give ideas as to how schools can shift to a learning model that better supports all students. All stakeholders in the United States Education system need to embrace and implement knowledge from the fields of educational psychology and disability studies to make schools truly accessible and equal in opportunity for all students.

About Neurodiversity

Defining Neurodiversity

Neurodiversity is an idea that has been around since the 1990s but has more recently entered the public sphere. Neurodiversity is a new way to look at and understand others with what we currently call disabilities. As it sounds, it is the idea that everyone's brains work differently and differences such as Autism, ADHD, learning disabilities, and mood disorders, are just part of this natural diversity. It is already accepted and understood that there is biodiversity on the earth so different plants have strengths that suit their environment and not others. Biodiversity is necessary for plants to thrive in their own environment. However, this doesn't mean a certain plant's features are "better" than another's. All plants have features that suit a certain environment. Furthermore, all plants have specific environmental needs, such as different amounts of sun and water. It is accepted that without meeting the right conditions for each plant, the plant will not thrive. Therefore, it should be accepted that each human needs their own special conditions met to thrive in their environment. The concept of neurodiversity challenges the idea that there is something wrong with the brains of people who have something like ADHD and instead argues that the differences in every human's brain give each person their own strengths and challenges that need to be recognized (Armstrong, 2012).

Neurodiversity, or the idea that different brains have different strengths, is actually not a brand-new idea. Ancient Greek philosophers discussed the idea that there are multiple types of intelligence. For example, Plato distinguished reasoning ability from scientific intelligence. While this model for understanding intelligence has been disproved, it shows that the basic idea that people think differently has been around for a very long time. Furthermore, this model seen all the way back in ancient Greece does not create a hierarchy of abilities but rather differentiates

them. This is the important takeaway from this model (Speranza, 2020). The goal of the neurodiversity movement is not to say that being neurotypical is better and neurodivergent is “less than.” The point of neurodiversity is shown in the name, that there is diversity in brains, not a ranking or scale to show a difference in value.

There is an ongoing debate occurring within the autistic community and its allies about the terms “person with autism” vs “autistic person.” Also known as, person-first vs identity-first language. The Autistic Self-Advocacy Network (ASAN), published an article by an autistic ASAN Intern, Lydia Brown, discussing identity-first language. Brown discusses that while she understands the good intention of the use of person-first language, she feels that it is often used by families and not autistic people. Her opinion which is also held by many other autistic individuals, is that person-first language tries to separate a person from autism. She argues that this is another way of asserting that autism is a negative thing that people should be separated from when possible. Brown feels that she cannot be separated from autism and that it is part of her identity, just as people identify by their race or gender orientation as an integral part of their identity that cannot be separated from them when they say, “Black person” or “Gay.” Brown acknowledges that some autistic people may prefer person-first language for themselves and that individuals should be respected by having the language that they prefer used by others (Brown, 2011). ASAN also links more articles with articles that are from both perspectives below this one. However, since identity-first language seems to be preferred by ASAN as it is displayed prominently on their website, that is what will be used throughout this essay.

Social Model of Disability

It is important that neurodiversity still recognizes autism, ADHD, and all categories that fall under neurodiversities, as disabilities as well. This may seem like a contradiction, but this is

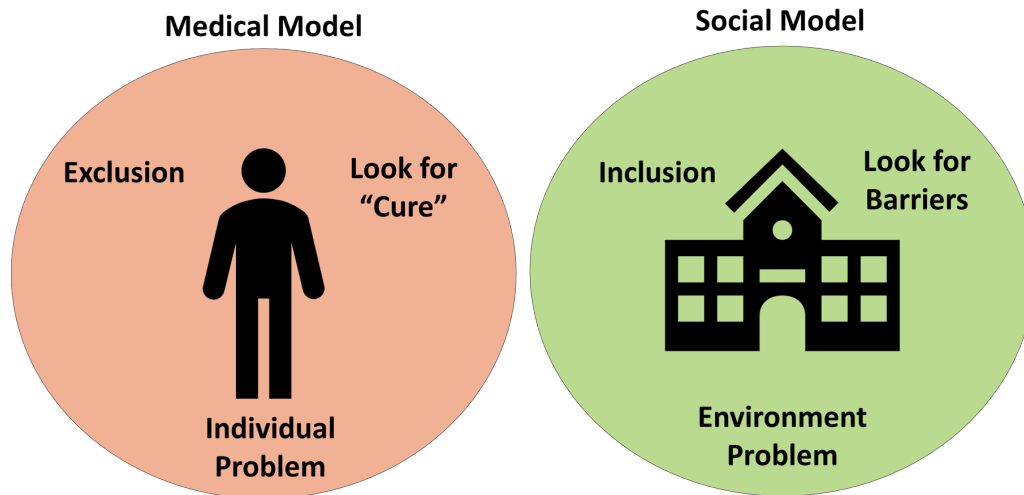
because the word “disability” has been seen as a negative trait of a person. This is because the way most people have seen disabilities for a long time has been through what is called the medical model of disability. This widely used and accepted model frames disability as a problem occurring within an individual (Buder & Perry, 2021). For example, this says that the reason a wheelchair user cannot access the second floor of a building is because of their mobility impairment. The social model of disability shifts the view of what the problem is to society instead of the individual. Looking at the same example using the social model of disability, the problem identified is that there is no accessible way to get to the second floor. Society is not prepared to accommodate all individuals with accessible ways to get to the second floor, such as a ramp or elevator.

Neurodiversities still need to be seen as disabilities, just under this social model of disability instead. This acknowledges that there is still a struggle that neurodivergent people are facing, it’s just not because of something wrong with them. Therefore, the target of intervention needs to be within society and not just the person. However, it is important to address a common point of confusion people have with this model. Some disabilities cannot be “solved” by fixing an individual’s environment. For example, chronic pain cannot be eliminated with societal accommodation and instead could benefit from medical intervention. Therefore, it is important to clarify that this model acknowledges a difference between “impairments” and “disabilities.” Impairments are the personal limitations someone may possess, while disabilities are disadvantages that come from society not making accommodations and otherwise being exclusionary (Budder & Perry, 2021).

This is not to say that society cannot still help people with their impairments. People with chronic migraine could have environmental triggers and becoming a more inclusive society

could lead to people being more accepting of accommodations. For example, it could be helpful for someone with chronic migraine to work in a dimmer area than their coworkers, or at the very least, a more inclusive society would not pass judgment when a person wears sunglasses indoors to help mitigate their triggers. Autistic disability researcher, Jacqueline den Houting, explains that most disabled people, even those with high support needs, would still see advantages from environmental change and wider-spread assistive tools. She also explains that it takes both physical and social change to fully reduce or end disabilities from inequality. As she puts it, “Providing a non-speaking autistic person with an alternative method of communication may give them a voice, but they will only truly stop being disabled when others listen” (den Houting 2019, p.272). This explains very well how the social model of disability advocates for the removal of the true barriers disabled people face.

Figure 1 summarizes the important differences between the medical and social models of disability. The medical model is described as being exclusive, and the social model is inclusive because when the root of the problem is put on an individual to solve for themselves, people are going to be excluded if they do not have the means to solve it themselves. However, the social model sees the root of accessibility problems as an environmental problem that requires collaboration from society. This pulls resources and ideas from many different people and is likely going to be easier to solve as a group, and it is likely going to benefit everyone in the process because many different people are involved.

Figure 1*Medical Versus Social Model of Disability***Strengths-Based Education**

An important area that needs to adjust to better accommodate disabled people is education. Part of this is because of the medical model's focus on disabled individuals' deficits. In their annual research review, Pellicano and den Houting (2022) found that many studies show autistic people outperforming neurotypicals in a variety of tasks, particularly in scientific tasks. However, this trend of scientific achievement is not listed as a strength of autism. In fact, they found research that presented their data in a way that made strengths seem like deficits. This was also seen in research about autistic intelligence. Pellicano and den Houting also found that when intelligence tests switched from the standard Wechsler Scales of Intelligence (WSI) to strength-informed tests (Raven's Progressive Matrices), intellectual deficits between autistic people and neurotypicals were no longer found (Pellicano & den Houting, 2022). Deficits or struggles are only one aspect of people. Dr. Thomas Armstrong explains that this limited view of others, only looking at negatives, significantly restricts the ability to differentiate learning. Furthermore, teacher expectations are found to have a significant impact on student outcomes

(Armstrong, 2012). The alternative to this deficit focus that currently informs school structure, would be a strengths-based focus.

Strengths-based education shares ideas with the neurodiversity movement and social model of disability. Proponents of neurodiversity argue that there isn't anything wrong with being non-neurotypical, and disabled people are not succeeding "despite" their disability. Rather, neurodiversity gives students different strengths and weaknesses than most neurotypical people. Therefore, it makes more sense for people working with neurodiverse people to work on identifying and utilizing their strengths, rather than work against their weaknesses (Armstrong, 2012). This can also be thought of using the idea of biodiversity. Just as plants have different needs to thrive, so do students.

It is important that education recognizes the impact that deficit-focused education has on students. It doesn't just impact how students perform, but how people see them. A study was performed by Jan Blacher and Abbey Eisenhower (2022) to examine the rates that autistic children in early childhood education were expelled, and the effects expulsion had on them. They found that 16% of those surveyed (203) had been expelled at least once and 81% were because of behavior problems. The only difference found between students that had or had not been expelled was greater teacher-reported externalizing autism symptoms. This is a high statistic that points to possible biases these children might face in school. Teachers may be seeing these externalizing behaviors as defiant or oppositional behavior, instead of seeing these behaviors as a reaction to sensory overstimulation, trouble managing social interaction or expectation, and other common autism-related challenges.

Figure 2

Reasons for Expulsion from Blacher and Eisenhower

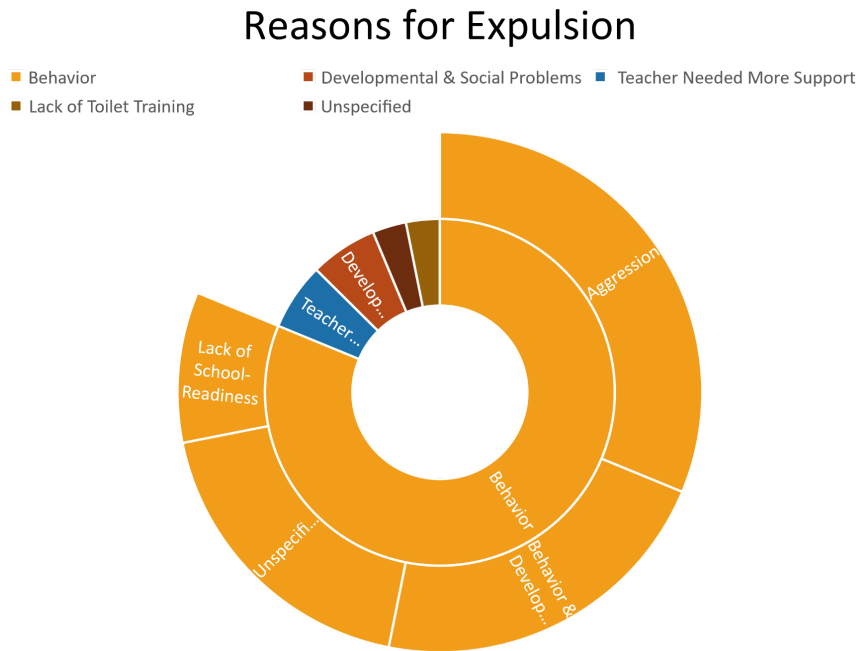


Figure 2 shows that most of the reasons for expulsion were behavior related. However, the other reasons including lack of toilet training, developmental and social problems, and teachers needing more support are all also common issues that autistic students struggle with. Since it is known that autistic students are likely to need more support in these areas, there should be plans in place to better support these students in these ways.

Children this young (4-7) are especially at risk of having their behavior misunderstood as autism may not be diagnosed yet. This statistic could also be an underestimate as schools may not always outright expel students, but rather practice “soft” dismissal by asking parents to take their child home early or find a different program. These results point to a need for more training for educators in developmentally appropriate behavior to help distinguish when a child’s behavior is actually developmentally appropriate, along with other training in implicit bias (Blacher & Eisenhower, 2022).

Moving to this kind of education model is incredibly important for neurodiverse students to not only improve their learning outcomes but also their lives. The study by Blacher and Eisenhower (2022) is an example of how currently, externalizing symptoms of autism are misunderstood and seen negatively. This could lead to neurodiverse students feeling like they need to hide parts of themselves. The consequences of this lead to bad mental health outcomes and sometimes physical health outcomes as well. A study analyzed the #TakeTheMaskOff movement on Twitter to discuss how masking and camouflaging negatively impact the neurodiverse community and why they feel the need to do this. For example, many autistic individuals feel they need to hide their autistic traits and do so through a term called masking. An autistic participant in this study on masking explained that “Autistic masking is where an autistic person, often through intense effort, masks their natural autistic tendencies in order to blend in with the nonautistic majority around them” (Radulski, 2021, p.120). The study found that autistic people feel the need to mask to avoid neurotypical discrimination and even violence because of their neuro minority traits (Radulski, 2021). This act of masking that is supposed to protect them can also be dangerous because of the negative mental health outcomes that occur from constantly working to hide their natural selves. Research has even shown a direct connection between masking and a younger average age of death for autistic people (Rose, 2018, cited in Radulski, 2021). Neurodiverse individuals should not feel that they need to hide who they are. There needs to be a culture shift so neurodiverse people feel more safe and accepted in society. This change can start in schools.

Martha’s Vineyard actually has an amazing example of inclusion being integrated into society and culture. Starting in the mid-1700s, 1 in 25 people in Chilmark, a city in Martha’s Vineyard, were deaf. Not everyone was deaf, but almost everyone knew sign language and used

it with hearing and deaf people alike. The sign language they knew was named Martha Vineyard Sign Language, and this shows how “the language didn’t belong to the deaf community; it belonged to the town” (Romm, p.2, 2015). Being deaf wasn’t seen as a disability to the people of Chilmark. Deaf people weren’t seen as disabled people but rather that being deaf was just a part of them. This is what the neurodiversity movement wants to happen with neurodiversities. The people of Chilmark unknowingly demonstrated the ideas of the social model of disability in this way. They didn’t see deafness as a medical problem to be fixed or that deaf people needed to adapt to understand hearing people in other ways such as lip reading. The community saw a societal responsibility to learn and pass on language that could be used by everyone, deaf or not.

The culture of Chilmark changed when its relative isolation ended in the early 1900s when infrastructure changes made it easier for people to go to and from the island. Chilmark parents then learned about the school for the deaf on the mainland. Parents of deaf children felt that this is where they were supposed to send their children, so they left the island and Martha’s Vineyard sign language behind, and eventually, American Sign Language was formed instead. The idea of teaching deaf children primarily in spoken language also came about. This idea is called oralism, and this along with the creation of a school created to separate deaf children from hearing children caused Martha’s Vineyard Sign Language to disappear, and with it, the inclusive culture that had developed on Chilmark (Romm, 2015). These ideas follow the medical model of disability, as it frames deafness as a deficit that deaf children needed to “overcome”, and that they should do so away from the hearing children.

The current main American education model follows the deficit mentality. However, there are other models of education that would be more accommodating to neurodiverse as well

as all other types of students. These models could serve as guides for districts to start becoming more inclusive for everybody.

Inclusive Education Models

Reggio Emilia

Reggio Emilia is an approach to education that started in Reggio Emilia, Italy. It is believed that Reggio Emilia cannot be replicated as the concept is rooted in Italian culture and norms. Attempts to replicate and incorporate Reggio Emilia practices are called “Reggio Inspired”. This educational approach is not considered a formal model either. This is because it does not believe in measuring educational outcomes to reach a certain result. Instead, the goal is to always continue to give children room to grow and discover (Emerson & Linder, 2019).

One important aspect of Reggio Emilia is the importance of students’ classroom environment and how it promotes learning. A study done by Kelsey Robson and Sonia Mastrangelo examines how a Reggio Inspired school uses the learning environment as a “third teacher”. This study analyzed the kindergarten students’ view of their school environment and what they believed contributed to their learning the most. This is important because children are most affected by the school structure so their perspective should be seen as valuable. Reggio Emilia has 12 guiding principles that are used to set up collaborative partnerships between everyone involved in schooling: children, educators, and parents. The environment is set up to be a “third teacher”, so learning happens naturally for children as they explore their environment, and there is less need for direct teacher intervention. The results of the study showed that many of the children believed they were playing, not learning. This shows the children are likely more engaged because it is something they feel they want to do instead of feeling they are forced to do

anything. This also shows how Reggio Emilia puts the emphasis on children and learning to learn and grow holistically. Robson and Mastrangelo (2018) explain the importance of this:

To create learning environments responsive to the 21st century, researchers and educators need to collaborate with students to ensure their needs are being met. Students feel empowered and motivated to engage in their education when their voices are heard and when they are seen as knowledgeable co-participants and decision-makers capable of contributing to discussions related to their learning (p.2)

This is the concept of giving children agency. Agency is something that is often taken from neurodiverse individuals as well because of the medical view of disability that leads people to see disabled people as less capable in many aspects of life. This approach of agency for all students is an example of how incorporating Reggio Emilia principles into schools can help support neurodiverse students.

The Reggio Emilia approach also encourages collaboration with parents and the community as well as the students. This is something that many parents of neurodiverse students wish they had more of. A study by Saggars et al. surveyed parents of autistic students, educators, and specialists who all work with children on the spectrum to find what these three groups believed were supports that these students need in schools. The results found three themes: All of the school's staff's understanding of autism, recognizing their unique educational needs, and building school capacity. They noted particularly that many of the needs that need to be accommodated are social-emotional, sensory, and behavioral needs instead of academic support. They also mentioned the importance of all stakeholders communicating and collaborating on how to best support students (Saggars et al., 2019). These themes are very important issues that need to be addressed for schools to better serve their neurodiverse population. However, it took

surveying three groups of stakeholders to identify these common issues. Collaboration is one of the guiding principles of the Reggio Emilia approach, and it is one that should be incorporated into schools trying to better accommodate all of their students.

Universal Design for Learning and Social-Emotional Learning

Universal Design for Learning (UDL) is another educational model that should be considered when trying to make schools more inclusive. UDL is a model that is meant to be inclusive from the beginning instead of making adaptations for those with special needs. The three principles of the UDL framework are: to provide multiple means of engagement, representation, and action and expression. Engagement is important because it can impact motivation and success. However, all students are going to be engaged by different things in different ways, which is why the principle is to provide students with multiple ways for students to find interest and engagement in the learning material. This shows how the creation of this framework is created with the acknowledgment that all students think differently. Having multiple means of representation also acknowledges that all brains work differently and will therefore process information in different ways. Differentiating representation means presenting the material in multiple ways such as auditory, visual, and physical ways, different forms of media, and explaining concepts with varying wording. Finally, after learning the information, students need to be able to demonstrate their learning in the ways that work best for them. Different methods of expression should not be valued over others, but rather students should be encouraged to try all methods and learn what their strengths are (Sewell, Kennet, & Pugh, 2022).

UDL is an inclusive practice as it actually follows the ideas of the social model of disability and neurodiversity. This model encourages changes within the classroom or school to better accommodate all. This is instead of the current common practice of changing curriculum

or practices for students on an individual basis which UDL refers to as “retrofitting” the curriculum. Retrofitting for individual students makes it seem that the individual students are the problem, which is an idea seen in the medical model of disability, and not the curriculum that is not accessible to all students. Furthermore, UDL recognizes the diverse needs of all students due to the diversity of cognition, which is of course the belief of the neurodiversity movement.

Utilizing the three components of UDL helps schools make learning accessible to all students (Sewell, Kennet, & Pugh, 2022).

Social Emotional Learning

Social Emotional Learning (SEL) is another form of instruction that could better support neurodiverse students as it was created in part to encourage inclusion. Just as Reggio Emilia does, SEL also encourages partnerships and collaboration with schools, families, and communities to make sure that students are being supported in the best possible ways. SEL also teaches both students and educators how to appreciate students’ unique needs and strengths as well as how to practice empathy, understanding, and active listening. Finally, SEL promotes pushing all students to reach their fullest potential, but also stresses continuous assessment to make sure that students’ environments are set up well with plenty of support to encourage success for all (CASEL) Furthermore, as discussed earlier, Blacher & Eisenhower (2022) found that 81% of the autistic students surveyed that had been expelled were because of behavior problems. SEL can help other students and teachers recognize behavior as emotional needs as well as give students the tools to manage their emotions.

Strengths-Based School

In 2012, Dr. Thomas Armstrong visited The William W. Henderson Inclusion Elementary School, a K-5 public school. This school had about 230 students, and about one-third had special

needs and were included in the regular classroom. The chapter discussing this school in his book is titled, “The Strengths-Based School”. Armstrong breaks down seven inclusive practices that Henderson utilizes: Strength Awareness, Assistive Technologies, Enhanced Human Resources, Strength-Based Learning Strategies, Environmental Modifications, Positive Role Models, and Affirmative Career Aspirations.

Strength-Awareness means recognizing every child’s strengths, no matter the type of strength. Even in a school, it is important to recognize that a student's strengths aren't just academic-based. Furthermore, progress looks different for every student. Every student has their own interests, talents, and abilities, and those can be used to further learning, as opposed to directly challenging their deficits. Armstrong explains that at Henderson, all students are held to high expectations and challenged to reach their own highest potential. When Armstrong wrote his book in 2012, Henderson’s state assessments showed high performance for both students taking a standard and alternative assessments in 2011.

Armstrong explains how Henderson found that most students at their school needed technology to help them access curricula. They worked with many companies to come up with modifications such as text-to-speech and speech-to-text software, adapted keyboards and calculators, tools for writing Braille, and special hand grips for writing with pencils. Furthermore, they use environmental modifications as needed. For example, there is flexible seating to help students with movement and sensory needs. There are also places to go for students to release stress or get rewarded for behavior.

The Enhanced Human Resources Henderson employs includes having two teachers in each classroom. One is certified in regular education and the other in special education, but they both work with all students. Para-professionals also are there to work one-on-one with the

students who need it. The school also has physical and occupational therapists, a speech pathologist, and teachers in the dance, music, and visual arts. All of these specialists provide instruction from one-on-one to the whole school, and every size group in between. They also work with teachers to help adapt the curriculum in ways that can be beneficial to everyone. The school also has students in grades 3-5 who volunteer to be peer tutors to younger classmates one recess a week.

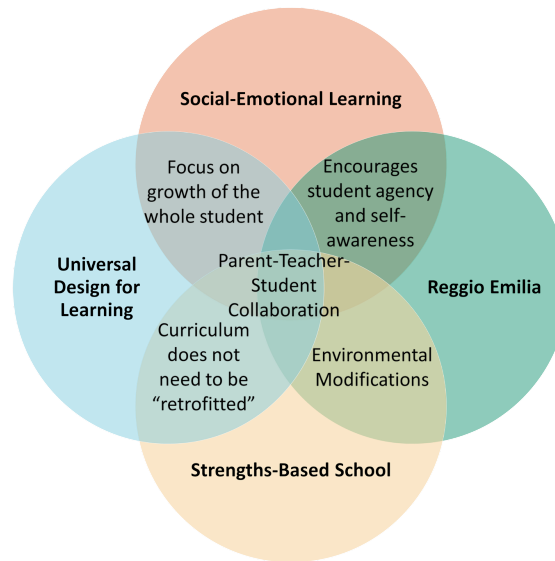
Strengths-Based Learning Strategies include making modifications as needed to help each student work to their own strengths, instead of thinking about it as combating their disabilities. Armstrong gives examples that Henderson employs such as using sensory strategies to help dyslexic students with reading and having students with intellectual disorders practice math skills through real-life learning situations such as using money or cooking at the school store and cafe. Teachers teach organization skills with visuals, graphics, and color coding. The school seeks out positive role models for their students and has speakers with a variety of disabilities come in and speak to kids about their experiences and how they succeed in their chosen careers.

For a school to be strengths-based, it is important for teachers to learn about their student's strengths before they even come to class. It is good to ask parents, previous teachers, others who have worked with the student before, and the student, what their strengths are. This helps get a better view of the student beyond things like past test scores. Then those strengths can be used to help support the learner. For example, Armstrong explains how strengths should be included in students' Individualized Education Plans (IEP) for those who have them. Strengths should be recognized along with the challenges students are facing and should be used as part of the solution. Finally, a strengths-based classroom challenges the idea of a "normal classroom"

and a “special needs classroom”. A strengths-based classroom is a “normal classroom” that is meant for everybody because everyone sees disabled students as an important part of the classroom dynamic right along with typically functioning peers (Armstrong, 2012).

Another way to adapt environments to be more inclusive is by making them more sensory-friendly, or providing opportunities to take care of sensory needs. Multi-Sensory Environments (MSE) are already being used at schools internationally. While this has the potential to be a great tool for students to regulate themselves when experiencing distress or sensory needs, it is important that they are used in the most effective way. A study by Unwin, Powell, and Jones (2022) found that letting autistic students control the variables in a sensory room significantly helped students achieve a state that is better suited for learning, as opposed to only having access to the sensory room but not being in control of the sensory variables. This is likely because this way the students are able to meet the specific sensory needs they are having, the changes in the room are predictable, and perceptions of control and agency are related to well-being in children (Unwin, Powell, & Jones, 2022). Having MSEs is one way that schools can work to make their environments more inclusive.

Figure 3 is a diagram that sums up the five main themes found in the four learning models discussed. The idea of having clear parent-teacher-student collaboration and communication is discussed in all of these models. This suggests that this may be one of the most important factors to include in an inclusive education environment.

Figure 3*Comparison of Four Inclusive Education Models***Inclusive Education in the Classroom**

Many of the ideas discussed in Inclusive Models of Education are easier to implement in a school-wide setting with structure and support provided by principals and above. It is understood that changing learning models district or school-wide is a large task that could take a while to implement. While the goal is for education as a whole to change and become more inclusive, there are many ways teachers can make their individual classrooms more accessible. This section will discuss ways to include inclusive practices that can be implemented on a classroom level.

Sensory Intervention

Earlier, it was discussed how Multi-Sensory Environments, which are whole rooms with different sensory experiences, could be used in schools. Addressing sensory needs is very important for young students, especially neurodiverse ones. Providing ways for all students to address their sensory needs even in small ways in a classroom can provide a lot of benefits for

students. Many teachers are already trying to integrate opportunities for sensory exploration and sensory regulation in their classrooms. A study by Park et al. (2020) analyzed the use of a sensory “hub” for adolescents with developmental disabilities. The study found that in an entire sensory hub, the top three sensory interventions used the most by students when overstimulated were a beanbag with a weighted blanket, a sensory cocoon, and a fidget wall. The bean bag and weighted blanket provide passive touch, and the sensory cocoon shown below is a tent-like structure that helps lower sound and visual stimulation. The fidget wall includes a fan, aqua doodle, and grain bags, which provide opportunities for active touch as well as some desired auditory stimulation with the fan and grain bags.

The study also analyzed the sensory profile of most of the participants with ASD and found that they had higher scores in low registration, sensory sensitivity, and sensory avoiding than their neurotypical peers. Furthermore, those with lower sensory-seeking and higher sensory-avoiding scores were more likely to use the sensory cocoon to minimize sensory input. This study shows some methods of sensory interventions that could be adapted for classroom use for all students as both a preventative and therapeutic measure for sensory needs. Furthermore, it demonstrates that sensory profiles tend to seek out certain sensory interventions, so learning each student’s sensory needs could be an effective way to make sure each student’s needs are being attended to (Park et al., 2020).

Hidden Curriculum

Another aspect of education that, as the name implies, can often unwittingly cause difficulties for neurodiverse students is something called the hidden curriculum. This refers to the social and life lessons that students learn unintentionally while attending school. Sulaimani and Gut (2019) discuss how currently, many teachers assume that their students already know

many social norms that are needed in both schools and the rest of society. Therefore, many of these expectations work like unwritten rules for students to follow for success. However, many students, particularly autistic students, struggle to understand more subtle teachings of social skills. Sulaimani and Gut (2019) also discuss evidence-based strategies for “uncovering” the hidden curriculum to make it accessible to all students. First, they suggest that the curriculum should incorporate direct instruction, discussion, and practice on how to execute social expectations as the need for them occurs. Ways to incorporate social and communication skills include: modeling with peers or videos, verbal and or written scripting, and practice with peers with feedback from the teacher. It is important to not just tell students how to act but to make them aware of the how and why of social expectations they will face in the classroom and beyond (Sulaimani & Gut, 2019). Making social and behavioral expectations as clear as possible and not assuming students already know the social norms that are expected of them makes classrooms more inclusive to students from all backgrounds.

Utilizing Ideas from Reggio Emilia

Reggio Emilia was discussed earlier as a way to set up a classroom to use the environment as a “third teacher” and how this approach wants students to grow very holistically. Unfortunately, while this approach could be beneficial to many students, it would likely require more support from the administration and above to execute in most classrooms. However, Reggio Emilia is itself an approach to inclusive education and there are components that could be pulled from them to inform teachers on inclusive approaches to teaching. Sheryl Gilman is a self-proclaimed student of Reggio methodology and discusses how Reggio Emilia’s image of the child, and commitment and collaboration with parents, provide a model for inclusive education.

An important principle of Reggio Emilia is the view that children are competent and appreciated. This is an important idea to emphasize for all people working with people with disabilities. Children with disabilities are children with capabilities and interests, not just children in need. This idea includes making sure these children are seen as valuable members of the classroom and are fully included. Gilman explained how she observed a student who she called Jake, who had a sensory processing disorder. She knew what senses he avoided and worked to help adapt a painting project so he could avoid touching the paint. She explained that Jake was thrilled to find a way to paint that he was comfortable with while still fully participating with his peers. His peers then chose to experiment along with this student and find more unique ways to paint that Jake was comfortable with. This example demonstrates how Gilman respected Jake's needs and helped him fully participate in how he chose to and that was accepted fully by the other students, which Gilman states, is inclusion.

As discussed previously, clear parent-teacher communication can be incredibly beneficial for a teacher to create a good understanding of their students. The idea of collaboration between parent and teacher to best support the student is another important part of Reggio Emilia. Gilman explains how there can be many reasons that it might be difficult to develop this open communication. She gives an example of a time she learned after the student had multiple issues in class that her parents had seen this behavior before, but they seemed to have a distrust of educators because of how a past school had handled their child's difficulties. Gilman explains that had she known that the student's behavior had been a pattern she could have planned ways to make the transition easier for her. Gilman contrasted this story with how parents of a different child communicated difficulties their child had in the past and what had helped them move past it. Gilman was able to take their ideas and utilize them in the classroom. The example she gave

was that she was able to create a “social story” for the student to prepare them for a school guest that would be a change in their routine, and because of this, the child was very excited about the event and not anxious (Gilman, 2007).

The difference between these parents is that one had a bad experience with educators in the past, and the other had educators that listened to their concerns and worked with them. These parents then felt empowered to reach out for this collaboration at the next school with Gilman. The first parents showed resistance to getting professional help for their child. Many parents demonstrate this and feel that getting help means that there is something “wrong” with their child. Perhaps demonstrating the other Reggio Emilia idea discussed, that you as an educator recognize the child as competent and appreciated, to the parents and try to develop a relationship of trust early on could help parents be assured that you only want to support their child the best that you can.

If a good relationship with the parents can be accomplished, they will provide a wealth of information about their child as they likely know them the best. Angelique Trigueros (2018) conducted a study that demonstrated this. She examined how therapists can involve parents in interventions by having them identify their child’s strengths. Through conducting interviews with parents of autistic children, Trigueros found that parents were, as expected, very knowledgeable about their child and there were themes of strong parental advocacy. The parents were able to identify strengths within common themes of routines, caring for others, and relationships with their parents. The perspectives parents have as their child’s main caregivers have the potential to provide valuable insight into both the challenges and strengths their child possesses which could potentially increase the quality of strength-based interventions they receive when educators reach out for this information (Trigueros, 2018).

Lessons from Distance Learning

A study by Heyworth et al. (2021) examined the effect of education distance learning on sixteen autistic students ages twelve to eighteen, and their parents, to help determine what parts of this format could be beneficial to autistic students in a traditional school setting. The results showed that at first, this change was challenging for both the students and their parents. Despite reporting many issues with this format, however, they did find that many parents and students felt that they had “flourished” during this time. They identified common answers that pointed to three common benefits of this learning format. First, home was a less challenging environment as far as sensory issues and this seemed to help improve their mental health. They also were with their families who know the most about them, have a trusting relationship with them, and feel valued. Parents also felt that they were able to prioritize their child’s mental health over learning when needed because of the flexibility distance learning gave them. Finally, students identified that having flexibility and being able to structure their time how they wanted was beneficial to their learning as well (Heyworth et al., 2021).

It has already been discussed how important strong relationships between teachers and their neurodivergent students are, as well as how important it is for them to have some control over their sensory environment. This study gives another example of how it is imperative these factors are for students to flourish in a classroom. This study also discusses the importance of flexibility, which is likely the most difficult point in this study to bring to a traditional classroom. Teachers are expected to teach at a certain pace in order to fit the whole required curriculum into the school year so their students are prepared for the next year. Heyworth et al. (2021) mention many students explaining that they were able to decompress more with their home learning schedule compared to their school schedule. Making sure students have consistent small breaks

or ways to decompress, such as going for a short walk or utilizing sensory interventions could help students feel more prepared to transition to the next activity. Students will likely have different ways that they feel they need to decompress, so providing a variety of methods can help teachers and students identify the ways that work best for them as the school year progresses. Furthermore, preferred decompression methods may be some other information teachers could gain from communicating with parents.

Conclusion

It may seem that neurodivergent students are the minority and that these changes don't have a great enough impact to justify them. However, this is a discussion about how the entire culture around disabilities and differences needs to change in society. Changing education, a system that almost every citizen participates in some way, would have a great impact. There is a cycle of guilt and shame occurring in our culture because for some reason we keep insisting that there are only a few right ways to do things and we do not tolerate accommodations.

If the child in the introduction had been allowed to take breaks halfway through an activity because that is as long as he can focus, then maybe he could have come back and participated in each subject at least a little bit and made it through the whole school day. He could have had much more learning time with his peers and the chance to have meaningful connections and opportunities to practice social skills. Instead, he believes that he was "fired" from school and that the other children don't like him. Many adults I know have at least one story, if not many, about how they were made to feel bad about themselves in school because of their differences. Some of these people went on to get diagnoses that would explain their struggles in school. However, many people don't get diagnoses and they grow up to feel that

there is something wrong with them. This is about stopping this cycle of guilt and shame now for people who are “different” or neurodiverse, whether they have a diagnosis or not.

Schools are uniquely situated to start a societal change in the view of disabilities. Schools educate the next generation of adults that will go out and change the world. Gilman was able to see how her own commitment to inclusion quickly led to the whole classroom accepting and more importantly, understanding Jake’s differences. In the Strengths-Based School Armstrong visited, all students learn together and there isn’t a separate special education classroom, and students are taught about diversity of all kinds.

As discussed in the introduction, many people see behavior as “bad behavior” or “good behavior” and not as a way for students to communicate a need. A better societal understanding of neurodiversities, more inclusive learning models, and more inclusive practices in the classroom can help all education stakeholders better understand behavior for what it actually is. As the social model of disability would suggest, the problem with the behavior that got the students in Blacher and Eisenhower expelled is not within the student, but within the environment. The environment that is often too loud for those with sensory processing issues, or focuses more on achievement on tests than whole-person emotional development, or only considers students' weaknesses and not their strengths. Neurodiversity is natural and education should be set up to work for all types of students. Hopefully, in the future, there is a large decrease in the number of disabled students missing school due to inaccessibility.

References

- Armstrong, T. (2012). The Strengths Based School. *Neurodiversity in the Classroom : Strength-Based Strategies to Help Students with Special Needs Succeed in School and Life*. (pp. 136-161). ASCD.
- Blacher, J., & Eisenhower, A. (2023). Preschool and Child-Care Expulsion: Is it Elevated for Autistic Children? *Exceptional Children*, 89(2), 178–196.
<https://doi.org/10.1177/00144029221109234>
- Brown, L. (2011). *Identity-first language*. Autistic Self Advocacy Network.
<https://autisticadvocacy.org/about-asan/identity-first-language/>
- Buder, S., & Perry, R. (2021, November 5). The social model of disability explained. *Social Creatures*.
<https://www.thesocialcreatures.org/thecreaturetimes/the-social-model-of-disability>
- CASEL. (2021, September 8). *How does SEL Support Educational Equity and excellence?*.
<https://casel.org/fundamentals-of-sel/how-does-sel-support-educational-equity-and-excellence/>
- den Houting, J. (2019). Neurodiversity: An insider’s perspective. *Autism*, 23(2), 271–273.
<https://doi.org/10.1177/1362361318820762>
- Emerson, A. M., & Linder, S. M. (2019). *A review of research of the Reggio Inspired approach: an integrative re-framing*. <https://doi.org/10.1080/09575146.2019.1591350>
- Gilman, S. (2007). Including the Child with Special Needs: Learning from Reggio Emilia. *Theory Into Practice*, 46(1), 23–31.

- Heyworth, M., Brett, S., Houting, J. den, Magiati, I., Steward, R., Urbanowicz, A., Stears, M., & Pellicano, E. (2021). “It Just Fits My Needs Better”: Autistic Students and Parents’ Experiences of Learning from Home during the Early Phase of the COVID-19 Pandemic. *Autism & Developmental Language Impairments*, 6.
- Park, G., Nanda, U., Adams, L., Essary, J., & Hoelting, M. (2020). Creating and Testing a Sensory Well-Being Hub for Adolescents with Developmental Disabilities. *Journal of Interior Design*, 45(1), 13–32. <https://doi.org/10.1111/joid.12164>
- Pellicano, E., & den Houting, J. (2022). Annual research review: Shifting from ‘normal science’ to neurodiversity in autism science. *Journal of Child Psychology and Psychiatry*, 63(4), 381–396. <https://doi.org/10.1111/jcpp.13534>
- Radulski, E. M. (2022). Conceptualising Autistic Masking, Camouflaging, and Neurotypical Privilege: Towards a Minority Group Model of Neurodiversity. *Human Development*, 66(2), 113-127. <https://doi.org/10.1159/000524122>
- Robson, K., & Mastrangelo, S. (2018). Children’s Views of the Learning Environment: A Study Exploring the Reggio Emilia Principle of the Environment as the Third Teacher. *Journal of Childhood Studies*, 42, 1–16.
- Romm, C. (2015, September 25). *The Life and Death of Martha's Vineyard Sign Language*. The Atlantic. Retrieved December 7, 2022, from <https://www.theatlantic.com/health/archive/2015/09/marthas-vineyard-sign-language-asl/407191/>
- Saggers, B., Tones, M., Dunne, J., Trembath, D., Bruck, S., Webster, A., Klug, D., & Wang, S. (2019). Promoting a Collective Voice from Parents, Educators and Allied Health Professionals on the Educational Needs of Students on the Autism Spectrum. *Journal of*

Autism & Developmental Disorders, 49(9), 3845–3865.

<https://doi.org/10.1007/s10803-019-04097-8>

Sewell, A., Kennett, A., & Pugh, V. (2022). Universal Design for Learning as a theory of inclusive practice for use by educational psychologists. *Educational Psychology in Practice*, 38(4), 364-378–378. <https://doi.org/10.1080/02667363.2022.2111677>

Speranza, J. (2020). Can the concept of neurodiversity revolutionize school? *Rhizome*, 78(4), 6–7. <https://doi.org/10.3917/rhiz.078.0006>

Sulaimani, M. F., & Gut, D. M. (2019). Hidden Curriculum in a Special Education Context: The Case of Individuals with Autism. *Journal of Educational Research and Practice*, 9(1), 30–39.

Unwin, K. L., Powell, G., & Jones, C. R. G. (2022). The Use of Multi-Sensory Environments with Autistic Children: Exploring the Effect of Having Control of Sensory Changes. *Autism: The International Journal of Research and Practice*, 26(6), 1379–1394.