

# INSPIRE

K12 Education Update | Volume X



# Designing For Neurodivergence: Adaptable Learning Environments For All

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Have you ever wondered how some people can study in a loud, crowded coffee shop? Or perhaps, why you prefer the blinds closed when you're trying to focus? Maybe you notice a preference in your workspace to be more productive – be that a home, a classroom, or a private office. The built environment influences our behavior in different ways based on our interpretation of the space we occupy. Just as a book can be read in different languages, so can a physical space.

## Neurodivergent or Not

How someone processes their environment and information can vary depending on their brain chemistry and whether they identify as neurodiverse. According to the National Library of Medicine, 15-20% of the population is neurodivergent, with a recent increase in sensitivity after 2+ years in the home environment following the pandemic<sup>1</sup>. "Neurodivergent" is typically associated with those who have autism, ADHD, or other variances in brain functioning that read spaces differently than neurotypical brains; however, there may not always be formal diagnoses. By designing for the neurodiverse, everyone gets a level playing field to achieve their highest potential and aspirations.

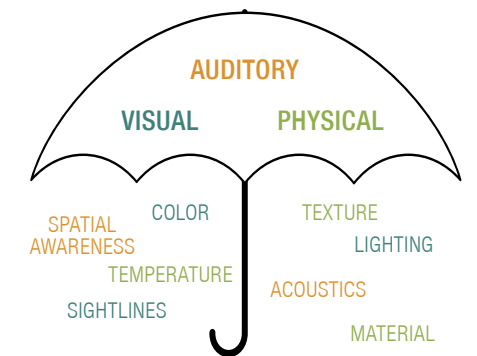
No two people are alike. We all learn differently, think differently, and experience spaces differently. There is no one "right" space to learn in. As K12 designers, our goal is to design learning environments that are adaptable and inclusive of the many ways in which students learn.

## Curating Cues

One way to achieve inclusivity is through Universal Design for Learning (UDL), a teaching approach that aims to create an adaptable learning environment for all students, starting with the neurodiverse. Neurodivergent brains view their environment as a language, processing information at a rapid speed to help them understand the brightness of a space, where the quietest corner may be, or where they might learn best. Students search for different environmental cues, sometimes cues that may be considered "atypical." To understand what this looks like in a learning environment, we first work to understand how the various components of the built environment speak to those who inhabit it.

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## DESIGN LANGUAGE



The Universal Design approach provides a variety of options for a student to choose from to cater to their personal learning needs.

## Learning Universal Design

**LIGHTING** Lighting plays an important role in how someone interacts with a space, especially for visual learners who take in information best through viewing and observing. Typically, classrooms offer a high level of artificial light, but what is comfortable for one may be distressing to another. Today's best practice is to include **LED lighting throughout the building, which allows staff and students to dim lights that may be too bright for a student's sensitivity.** Facilities can go even further to be inclusive of student needs by providing tunable lighting for those with the highest sensitivities, allowing adjustments to the temperature or color of the light. Supplementing with task lighting gives students autonomy over the level of brightness for those who need a dimly lit area to feel more comfortable. Similarly, access to softer, more diffused daylight can signal a calming, meditative space for cognitive learners who prefer to work independently and absorb information through reading, writing, and research. Overall, careful attention to both artificial and natural lighting throughout the building can help staff and students feel more at home in their learning spaces.

**ACOUSTICS** Noise is another element that influences how we experience a space, especially for auditory learners who like to engage in conversation with others to learn, relying on hearing information, solutions, and examples explained to them. Lecture settings and group activities are often the most successful learning environments for these students, causing them to seek out the areas where others are working to keep their brain stimulated and engaged. However, while a high noise level is beneficial for auditory learners, others may want to work independently in a quiet space. Cognitive learners are naturally drawn to the quietest area of the room to do their work, so it's important to break up the space with a variety of seating and acoustic treatments to provide different noise levels. This helps address all needs, from groups of many to groups of one. **Plan for large gathering spaces or cluster desks to encourage collaborative work and socialization, as well as privacy nooks and small group rooms that allow students to break away and reflect on their work.** Smaller areas can be set up with bookcases, shelves, bulletin boards, softer seating, or small desks and tables.

**MOVEMENT** Physical movement is essential for effective learning, yet it's often overlooked. **Supporting students' need to move can be achieved through flexible seating options that move with them, as well as larger, hands-on labs where they can get their hands dirty.** Open workspaces free of physical clutter create an ideal environment for kinesthetic learners, enabling them to engage more fully with their tasks. At Roseau High School, the new Career & Technical Education (CTE) space caters to students who benefit from frequent movement throughout the day. The space offers ample table and counter space for hands-on projects, along with clear pathways to walk around, encouraging movement and brain breaks. Additionally, having distinct activity areas—such as spaces for circle time, reading, and desk work—helps students transition between tasks, while carefully spaced desks accommodate small movements to keep students engaged and comfortable.

## A New Perspective in Classroom Culture

As K12 designers, we approach learning environments with inclusion at the forefront, allowing students autonomy to adapt their spaces as needed throughout the day. Since no two minds are alike, it's essential to provide environments that offer choice and support diverse needs. By identifying and supporting neurodivergence, we can start to provide options for all types of learners. Employing a Universal Design for Learning (UDL) framework further promotes teamwork, collaboration, and empathy within the classroom.

“Neurodiversity may be every bit as crucial for the human race as biodiversity is for life in general. Who can say what form of wiring will be best at any given moment?”

– Harvey Bloom 1998<sup>2</sup>





## JLG at 2024 A4LE LearningSCAPES in Portland, OR

JLG is proud to be a member of the Association for Learning Environment’s (A4LE), an organization whose core purpose is to strengthen learning for all through better environments. In October, JLG K12 Principal Dan Miller, JLG Med Principal Todd Medd, and JLG K12 Planner Katie Becker were joined by Anne Carlsen Center COO, Stephanie Nelson at the A4LE international LearningSCAPES conference in Portland, OR. While there, the group hosted a breakout session that shared the story of our collaboration with the Anne Carlsen Center over the last decade.

The Anne Carlsen Center is a Jamestown, North Dakota-based organization founded with the belief that all individuals have worth and should be given the opportunity to live a life of independence. They provide services for individuals and families of all ages with complex medical and behavioral needs, including educational, residential, therapeutic, evaluation, and community-based services, not only in the main location in Jamestown but across the region in satellite facilities and community-based care plans.

The breakout session focused on how the new facility empowers independence in students through empathetic design for neuro/physically diverse learners. Our team shared a look into the complexities of designing neurodiverse environments that serve as both living and learning spaces.

**From accessible wayfinding to visual definition of zones for living, learning, and therapies, every design choice for the Anne Carlsen Center was carefully weighed to balance safety, inclusivity, functionality, empathy, and autonomy.**

To better understand the needs of the staff and students, the design team employed empathy mapping techniques like staff-guided tours of the existing facility and a “day-in-the-life” activity that allowed staff to share with the team what was needed to thrive in a new space. This empathy-first approach challenged the design team to put aside existing assumptions and create a project tailored to the unique needs of those who live, work, and learn at Anne Carlsen Center.

If you are looking for a way to better support your neuro and physically diverse students, we’re here to help, leading with empathy and compassion to understand the unique needs of your students.



## JLG at MREA 2024 Greater Education Summit

As a longtime supporter of the Minnesota Rural Educators Association (MREA), an organization dedicated to lifting up rural educators across the state, JLG was excited to return to their annual Greater Education Summit in November to connect with and celebrate rural educators across Minnesota. At the conference, JLG K12 Principal Dan Miller and Superintendent of Lake Park Audubon Schools Dr. Tim Godfrey shared with attendees the work JLG’s been doing with Lake Park Audubon Schools as part of their recent building projects at the high school and elementary school.

During the breakout session, Dan and Tim focused on the exciting transformation Lake Park Elementary School underwent to uncover the hidden potential in their existing building. The project addressed the district’s need for additional space and removed the barriers of aging spaces and the inefficient conditions of their existing building to better support the work of the staff and meet the needs of today’s learners.

Throughout the project, the district was focused on doing things right and doing the right things for their students and community. Their elementary building was transformed to better support the great things the district was doing in their curriculum through collaborative learning areas, flexible furniture, and modern learning environments.

**The right-sized building has become a top-tier faculty recruitment tool, with collaborative classrooms and natural daylighting to support real-world learning.**



If you have an existing building and are wondering how you can transform it to meet student needs for the future, start by asking yourself:

- What does your community value?
- Does your facility support your strategic plan?
- What are the opportunities in your existing facility?

Thank you to MREA for having us!

Designing for Neurodivergence Sources:

1: Doyle N. Neurodiversity at work: A biopsychosocial model and the impact on working adults. *Br Med Bull*; 2020. doi: 10.1093/bmb/ldaa021.

2: Pazdel, D., 2023. *After the Hire: How to set up employees with autism for success* ([www.hrmorning.com](http://www.hrmorning.com)).

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