

Universal learning spaces

DESIGNING HIGH-QUALITY NEUROINCLUSIVE LEARNING ENVIRONMENTS IN EARLY YEARS EDUCATION







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Special thanks to

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Definitions

- **Neurodivergent:** Having a brain that processes information differently than what is considered “typical” or “neurotypical”—often associated with ASD, ADHD, Dyslexia, Dyscalculia, OCD.
- **Neurodiversity:** People experience and interact with the world around them in many different ways. There is no one “right” way of thinking, learning, and behaving, and differences are not viewed as deficits. The term neurodiversity includes all neurotypes including those considered neurodivergent and those considered neurotypical.
- **Sensory regulation:** The ability to manage and respond appropriately to sensory input from the environment in order to maintain a balanced state of arousal and function. Sensory regulation is crucial in the learning space to help children stay focused, calm, and ready to learn.
- **Sensory dysregulation:** When the sensory system becomes overstimulated or under-stimulated and the brain can no longer process information in an adaptive manner. Often the system becomes “flooded” and stops functioning at an optimal state.



Every child is unique, each with their own way of thinking, processing, learning, and simply being in the world. When we understand and appreciate these differences, we can support a child's growth and development.

A well-designed environment nurtures healthy physical, cognitive, and social-emotional development. Thoughtfully designed indoor and outdoor spaces provide balanced sensory stimulation and promote child agency and competency through a wide range of activities and social interactions.

A well-designed inclusive environment supports a broad range of learning styles. It allows educators to focus on the child and the learning happening in the moment, while reducing the burden of nursery or classroom management. These spaces benefit all children and adults who use them, but they are especially crucial for neurodivergent learners to thrive and perform at their best.



Impacts of the early years education environment

The environment that a child learns in is intimately connected to how and what they learn. In today's overstimulated and technologically driven culture, early childhood educational environments—both indoors and outdoors—need to become places of calm and self-regulation for children and educators in order to positively contribute to healthy child development.

Studies have shown that the brain's readiness for learning is greatly impacted by the environment. The design and physical layout of a room can affect sensory experiences, motor development, social-emotional regulation, and academic achievement in children. Additionally, current research on neurodiversity shows unique differences in individual brain development, highlighting the various ways people think, process information, and learn.

The success of any learning environment depends upon careful design of the indoor and outdoor spaces.

With today's emphasis on early development many settings get to imagine their building from the ground up. The following considerations can guide you when you are making extensive changes or planning a new space. Simple choices at the outset can make all the difference as you create a universally accessible learning space.



Here are some recommendations to consider as you think about your new space.

Location

- Choose a spot away from sources of unpredictable noise like traffic and sirens (busy roadways, airport flight paths).
- Choose a location with natural landscape features, views, and a mix of sun and shade to avoid having to create landscape from scratch.
- You will need a significant amount of outdoor area for play space, sight and sound buffers, as well as for parking and drop off.

Planning

- Provide a transition space where children and staff can prepare for the new environment during drop-off and pickup. A place to stop and take a breath or two, or to have a conversation.
- Think about transitions between inside and outside during the daily running of the program.
 - ~ All rooms should have direct access to the outdoors.
 - ~ If possible, provide covered porches for all weather use and to provide a transition space between indoors and outdoors.
- Maximise natural light into rooms.
- Include child-height windowsills.
- Consider adding spaces close to the room where a teacher can bring a child to regulate when the immediate need for separation arises.
- Consider adding a gross motor/sensory room equipped with larger sensory

equipment like swings, climbing structures etc.

- Plan for Therapy or Assessment rooms.
- Plan for non-intrusive observation into the room (one-way glass for parent observation and teacher demonstration).

Sensory considerations

- Consider colours carefully.
 - ~ Take inspiration from colours that are common to natural environments.
- Explore how textures and patterns can be used to provide a soothing sensory experience throughout the environment.
- Pay special attention to sound transmission and acoustics.
 - ~ Child toilets can share a wall with adjoining rooms but should not be shared between rooms as an open suite.
 - ~ Use quiet flush toilets and quiet heating and ventilation.
 - ~ Use acoustical surface treatments within the space.
- Carefully design the lightscape to include natural and artificial light.
 - ~ Use a variety of light fixtures and sources to create zones.
 - ~ Use indirect dimmable lighting to reduce glare.
 - ~ Consider adding full colour (RGB) tunable lighting to some areas.

How can I improve my existing space?

Take time to evaluate and reflect upon your current learning spaces. Consider the physical layout of furniture and learning areas, organisation of resources, and overall use of wall space. By making minimal intentional changes within your control, you can have a big impact on a child's successful engagement and interaction in his or her learning environment.

Adjust room layout to create designated learning spaces

- Consider traffic flow and natural pathways.
- Use furniture to create “nooks” and define boundaries. The backs of shelves and other furniture can be rearranged to create additional walls and corners.
- Avoid large open spaces—consider having the group area in one corner instead of in the middle of the room.
- Place more active areas, which tend to be louder, near each other.



Establish a calming space

Designate a calming space for children to use when they are experiencing sensory overload and need a place to regain their sensory balance. This space should be available to all children throughout the day.

A calming space can be created by:

- Decreasing visual and auditory stimuli.
- Including a calming tool kit (pillows, weighted objects, tactile items, headphones).
- Consider using the smaller enclosed spaces behind a shelf or under a counter (keep in mind adult sightlines for supervision).

These spaces should be located on the perimeter of the room away from the centre of action.

Manage the overall sensory stimulation of your room

- Use neutral colours on the walls and bulletin boards and solid, neutral-colour rugs.
- Mitigate sound levels by adding rugs or separating workspaces.
- Layer lighting using lamps combined with natural lighting.
- Minimise placement of visual aids behind the educator during circle time.
- Display a visual schedule on a wall at the child's eye level to reinforce structure and routines.
- Organise materials in baskets with a picture label and cover shelves not in use.
- Incorporate natural materials wherever possible. Add plants to bring nature indoors.
- Consider including an aquarium or similar visual stimulation.



Design for child agency, free movement, and choice

- Consider your room from a child's viewpoint. Get down on their level to determine their visual sightlines.
- When possible, provide more than one point of entry/exit at any given learning space so children do not feel "trapped".
- Allow adequate workspace for each activity area and store materials close to where they will be used.
- Provide flexible seating options and workspaces (standing, sitting, lying on the floor, cushions, chairs, stools, easels).
- Consider providing an elevated platform or structure where a child can retreat to observe room activity from above.

The importance of your outdoor space

A well-designed inclusive environment will have elements of natural light, calming sensory areas, and access to nature. While these can be created indoors, having outdoor access further helps meet the needs of all learners.

Being outdoors, with exposure to natural light, is especially beneficial for young children. The slow changes of the days and seasons provide a sense of stability and calm, reinforcing a child's developing sense of circadian rhythms. The lack of walls and the wide spaces allow for noise to dissipate. The calming sounds of nature provide a soundscape that can support self-regulation. These sensory experiences that are unique to the outdoors contribute to a rich overall sensory scape in ways that are impossible to replicate indoors.

Many of the same design concepts employed inside will transfer to the outdoors. Allow plenty of space for messy and loose parts play. Display toys and materials right where they will be used. Storage is just as important in the outdoor space as inside. Wherever possible incorporate existing natural elements like boulders, logs, and grassy hills into your outdoor space design. Remember, the best landscape and playscape will require dedicated care and maintenance.

Additionally, here are some considerations:

Allow for transition areas

- Porches or covered areas near the building provide a transitional area between indoors and out.
- Keep quieter, contemplative, individual activities closer to the building— also to provide a noise buffer from louder, active, group activities farther away.

Provide sensory and regulation areas

- Include a sensory garden.
- Use play structures like forts, teepees, shelters for a sense of enclosure.
- Include tunnels for the feeling of discovery.

- Include swinging and rocking activities for vestibular regulation.
- Provide an elevated structure or area to allow students to get up high and observe the activity below.

Think about the quality of play in your outdoor space

Your outdoor area should include spaces that allow for:

- Parallel play or small group play
- Dramatic play
- Gross motor play including pushing, pulling, climbing, jumping, swinging, sliding, or carrying heavy objects.



How do I make changes now?

Inclusive environments need to be comprehensive. Unless you are starting from scratch you may need to implement changes in your room or building in stages. Creating a “Master Plan” can help you focus on your goals for your space.

Putting a plan into place may be challenging, but the benefits are well worth the effort. It is important to remember that while some positive changes might be noticeable quickly, others will take time to develop.



Create a Master Plan:

1) Write a list of three or four statements that start:

"I want my learning environment to be a space where all children"...

2) Next take each statement and list three or four concrete ways you can accomplish this goal in your learning space.

3) Decide which of these things can you do right now and which will take more planning or resources? Which things do you think will have the biggest effect?

4) Create a plan for implementing your ideas. Are there other members of the team that need to weigh in on ideas/plans?

5) Share your vision with your local organisations that provide support for your child care program. Are there other programmes in the area that are looking for the same answers? Can they suggest any resources?



Further reading:

Barrett, P., F. Davies, Y. Zhang, L. Barrett. (2015) The impact of classroom design on pupils' learning: Final results of a holistic, multi-level analysis, *Building and Environment*, Volume 89

Martin, R., & J. Wilkins, (2022). 'Creating Visually Appropriate Classroom Environments for Students With Autism Spectrum Disorder.' *Intervention in School and Clinic*, 57(3), 176-181.

Black, M. H., S. McGarry, L. Churchill, E. D'Arcy, J. Dagleish, I. Nash, A. Jones, T. Y. Tse, J. Gibson, S. Bölte, & S. Girdler. (2022). Considerations of the built environment for autistic individuals: A review of the literature. *Autism*, 26(8), 1904-1915.

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