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How Classroom Design Inspires Learning and Wonder

Sandra Duncan, EdD, Jody Martin, Sally Haughey

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THROUGH A CHILD'S EYES
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and Sally Haughey

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We are deeply grateful to the many people who shared their knowledge, insight, and inspiration for this book including children and teachers, centers and schools, and early childhood advocates, experts, and colleagues. Their innovative ideas are inspiring and motivating. We also want to express gratitude to our friends and family for their support and encouragement as we worked diligently to bring this book to life. To all of you, our profound appreciation, gratitude, and thanks:

Foreword

The power of space.

It’s an expression that brings to mind images of the Grand Canyon, Niagara Falls, and of the sun setting over a magnificent mountain range—settings that invoke feelings of awe and humility.

But what of the everyday spaces, the classrooms, offices, and kitchens where the bulk of our lives are spent? Do these spaces not also affect us in profound and far-reaching ways? Think back to a classroom where you attended elementary school or perhaps your grandmother’s basement or the vacant lot where you learned to ride a bike. What would such memories be without the surrounding environments? And would your memories be nearly as powerful without the sights, sounds, and smells of those places? What these memories all have in common is that we experienced them as children. It is classrooms, playgrounds, and lunchrooms that helped shape our experiences and selves—some for good, others perhaps not as much. Could there be a few basic principles at work in the places we remember most fondly? Can we intentionally design space in such a way as to enhance our learning and memories? The answer is yes. We can design spaces that inspire learning and a child’s sense of wonder. The key is to preserve the magic and wonder of childhood by creating places that allow children to simply be children. It is what young children need and what they deserve.

—Sandra Duncan, Jody Martin, and Sally Haughey
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The catalyst that converts any physical location—any environment if you will—into a place, is the process of experiencing deeply. A place is a piece of the whole environment that has been claimed by feelings . . . We are homesick for places.

—Alan Gussow, A Sense of Place

Special spaces often become so because of personal memories, such as your childhood home or the spot where you fell in love. Some spaces, however, are special because they were created for specific uses and purposes. A library is a space to hold books along with other resources, and its purpose is to encourage literacy and offer information. A natural history museum is intended to educate visitors about the world. Clearly, the specificities and intentions of any designed space impact our emotions and behavior. Such places can awe young and old alike. Consider, for example, the Sistine Chapel.

The Sistine Chapel is a redesign of an older existing chapel in Vatican City. Completed between 1477 and 1481, the Sistine Chapel is renowned for its frescoes painted by a team of artists including Michelangelo Buonarroti, who painted the famous ceiling fresco. The design intention of the Sistine Chapel is to inspire worship. It is a sanctuary for people to find deep spiritual comfort and inspiration. The chapel’s art and architecture bathe worshippers in serenity, beauty, and peace.
Just as the Sistine Chapel is intentionally designed to serve a purpose, so must early childhood classrooms be intentional. Classrooms are meant to inspire children to grow and become their very best, and intentional classroom design is vital for promoting this inspiration. Children deserve thoughtfully and intentionally designed classrooms. What are our purposes for teaching young children? What would the environment look like in fulfilling those purposes? What essential understandings lay the foundation for designing spaces for young children?

**Essential Understandings of Classroom Design**

As educators and designers of early childhood environments, we must examine our ideas about how children reach their maximum potential. Then we can decide which types of environments most effectively support children’s growth. There are critical components—essential understandings—of classroom design that help to foster children’s capacity to reach their maximum potential.

**Essential Understanding 1: Honor Children First and Foremost**

*Honor* is an important word. It is about respect, empathy, acceptance, and patience. Classrooms designed to honor children are environments filled with choices, meaningful experiences, respectful interactions and communications, and relevant collaborations. Children are treated as important, competent contributors. Each child’s voice is heard, and all opinions are valued. Children’s work is respected and displayed with pride, integrity, and thoughtfulness. In classrooms of honor, the language and culture of each child is revered. Children’s lives and identities are supported with dignity. Families are welcomed. Most importantly, honoring children means giving them a chance to be whoever they want, whatever they dream, wherever their journey takes them.

**Children are miracles. Believing that every child is a miracle can transform the way we design for children’s care. When we invite a miracle into our lives we prepare ourselves and the environment around us . . . We make it our job to create, with reverence and gratitude, a space that is worthy of a miracle!**

—Anita Rui Olds, author and designer

**Essential Understanding 2: Cherish Children’s Spaces**

Early childhood practitioners nurture and support young children, but they often fail to consider how to extend this nurturing impulse to the classroom. The impulse to nurture the child comes more naturally than the impulse to nurture the space. If we truly believe in honoring children through the environment, then we must cherish the classroom space. This means creating environments that preserve children’s child-like qualities—laughter, joy, inquisitiveness, curiosity, playfulness, innocence, and delight—not only in the world around them, but in their very selves. In these spaces, young children can sing, dance, build, paint, and share stories.

**Children are the spark plug in the engine of life, the motivation behind our best deeds, and the evidence for hope in the future.**

—Ina Hughes, Foreword, *From My Side: Being a Child*

We place enormous value on the role of the environment as a motivating and animating force . . . that produces a sense of well-being and security.

—Loris Malaguzzi, founder of the Reggio Emilia philosophy and pedagogy
Essential Understanding 3: Celebrate the Spirit of Place

All children have a deep need for special places. Do you remember a favorite childhood place? These places hold a sense of wonder for us. As young children, these places enchanted us—whether our special space was a hand-built fort made of odd pieces of wood found in the garage, a secret meeting place under a big bush in the backyard, or the housekeeping center in the preschool classroom. We wanted to return to these special places time and again.

We vividly remember tiny details about our special places—the sights, smells, and textures. The Latin term genius loci means “the spirit of a place.” Anita Rui Olds asserts in her book *Child Care Design Guide*, “Our goal as designers is to create places of freedom and delight where the enchantments and mysteries of childhood can be given full expression. A spirited place satisfies children’s souls.”

What is the essence of a spirited classroom for young children? It respects and encourages children’s inherent drive to discover the world around them. Such a space is filled with interesting objects designed for sensory exploration that beckon children to investigate, manipulate, and collaborate with others.

Essential Understanding 4: Create Islands of Balance and Beauty

Have you ever spent the day near water—a pond, stream, lake, or ocean? The feel of the breeze, the sound of water lapping on shore, and the earthy scent wafting through the air? There is an inherent beauty and balance of nature that touches us deeply.

Beauty has the power to give us a sense of peace and pleasure, and it is an essential force in our lives. This desire for beauty is not exclusive to adults. Author and educator Ruth Wilson believes that young children also need and seek beauty. It really goes beyond the notion that children need beauty. Children deserve beauty. They deserve more than the mere walls, door, ceiling, and floor of the classroom. Children deserve more than institutional rooms with hard surfaces and cookie-cutter room arrangements, more than plastic and commercially purchased toys and equipment. Early childhood classrooms should have natural light, fresh air, growing plants, and fresh flowers. Children deserve beautiful nuggets of nature to explore and investigate. Classrooms of physical beauty foster aesthetic sensitivity and give children a deeper connection to the wonder of life.

The Power of Intentional Classroom Environments

The classroom is powerful. Its space has the capacity to regulate children’s behaviors either positively or negatively. The classroom environment also has the power to nurture (or stifle) young children’s growth and development. The environment significantly influences the quality of social interactions among children and adults. This effect is so significant that it has been deemed the “third teacher” by Reggio Emilia educator Lella Gandini. The types of materials available in the classroom, including the furniture, and the way in which they are arranged influence how children act, react, learn, and grow. Prakash Nair, Randall Fielding, and Jeffery Lackney believe that the power to affect children’s development is rooted in more than arrangement and classroom materials. In their book *The Language of School Design: Design Patterns for 21st Century Schools*, they explain how the ideas of designers, educators, and architects can converge. This book suggests designing schools with learning suites and studios where small groups of children can gather to collaborate and create. The authors suggest making classrooms flexible so spaces can be quickly reconfigured to support the emerging interests of the learners. They suggest breaking down the walls to let the sunshine in.
Our surroundings have a powerful influence on how we feel, act, and respond to the world. The growing field of neuro-architecture has confirmed that a thoughtfully planned environment is critical to a person’s well-being. By researching how the body and brain respond to different features such as layout, furnishings, lighting, and color, science has proven that our overall health and well-being is directly affected by the arrangement of our personal spaces. Sarah Williams Goldhagen, professor at Harvard University’s Graduate School of Design, has conducted research on how our brains register our surrounding environments. In her book *Welcome to Your World: How Built Environments Shape Our Lives*, Goldhagen calls this idea embodied cognition. She believes that our surroundings shape our lives and nudge us to think, behave, and feel in certain ways. Other researchers, such as Rikard Kuller, Seifeddin Bailai, Thorbjorn Laike, and Bryan Mikelides, have studied embodied cognition with their research on the effects of light and color on the psychological moods of adults. They found a clear connection between participants’ moods and their perceptions about the levels of light they were experiencing. Participants’ moods were at the lowest when they perceived the lighting was too dark and, conversely, at the highest when they perceived the lighting as just right. Positive moods dropped off, however, when participants perceived the lighting as too bright. Likewise, Sanford University emeritus professor Peter Barrett and his colleagues have studied the connection between space and children’s well-being through the potential of positive spaces. Many young children are not yet adept at expressing their feelings or self-regulating their bodies. Therefore, it is the early childhood practitioner’s responsibility to create classroom spaces that positively influence children.

**Environmental Practices**

According to the Division for Early Childhood of the Council for Exceptional Children, the concept of environmental practices refers to all factors of a space, including equipment, materials, routines, and activities that teachers can intentionally infuse, create, change, or alter to support children’s learning. As far back as 1969, Sybil Kritchevsky, Elizabeth Prescott, and Lee Walling analyzed child care settings and determined that classroom design influences the behaviors and social interactions of both children and teachers. The researchers observed the physical space’s arrangement and how children navigated through the classroom, worked with the materials, and interacted with others. Kritchevsky, Prescott, and Walling’s research illustrated how a thoughtfully designed classroom positively affected children’s actions while, on the other hand, inappropriately arranged environments negatively affected children’s behaviors and opportunities for social interaction.

By altering the classroom space, teachers can achieve learning goals as well as solve existing social and emotional issues. For example, Kritchevsky, Prescott, and Walling found that crowding caused by large pieces of play equipment and excessive furniture limited children’s desire to freely move about the classroom. Cramped classrooms resulted in reduced cooperation and decreased collaborative play, which stymied children’s engagement with learning materials. Eliminating unnecessary furniture and reducing the number of shelving units increased children’s engagement with the physical environment and their positive relationships with others. This research revealed the importance of tailoring the classroom space to fit the needs, skill levels, and experiences of young children in early care and education programs.

Contemporary early childhood experts and researchers have confirmed the work of Kritchevsky, Prescott, and Walling. Ellen Nafe’s research, for example, found a statistically significant correlation between children’s positive behaviors and appropriately designed and arranged classrooms. Jim Greenman, author of *Caring Spaces, Learning Places*, declares that children deserve to spend their early years in environments purposefully designed to support their needs and stimulate learning. Other researchers, including Stephen Rushton and Elizabeth Larkin, assert that our most important priority must be to create classroom environments designed to foster meaningful communication and social connections, as these two factors are the true foundation of young children’s learning. In *The Experience of Place*, author Tony Hiss says we all react, consciously and unconsciously, to the places in our lives.
According to Hiss, the places where we spend our time have a profound impact on who we are as people and what we can become.

Because children spend an inordinate amount of time in early childhood classrooms, we must critically think about classroom design with a different viewpoint. Today, it is generally accepted that the arrangement of furniture and selection of learning materials within the classroom have a far-reaching influence on children’s growth and development. Yet, we often find ourselves placing too much emphasis on what accreditation or licensing standards stipulate for furnishings and less emphasis on the more important variable of emotional or reflective effects of the classroom on young children.

Don Norman, a prominent academic in the field of cognitive science and design, coined the term reflective design. In his book *The Design of Everyday Things*, Norman describes three types of design:

- **Visceral:** how things look
- **Behavioral:** how people function within the design
- **Reflective:** the emotional impact of the design

Contemporary artist and expert designer of home interiors Susie Frazer uses this reflective methodology to design rooms in homes. She cultivates a sense of balance and calm in a room to support both children and adults to be their very best. She does this by infusing natural elements that activate well-being, such as tree twigs, live plants, neutral colors, and water effects. If we as early childhood practitioners are to follow the idea of reflective design, we must pay less attention to the furniture’s functionality and more attention to how it is arranged and positioned in the classroom. In reflective design practice, it is also important to commit to designing classroom spaces that are aesthetically beautiful and have a positive emotional effect on young children.

The classroom’s physical design and decor are powerful nonverbal contributors to children’s learning.

—Takiema Bunche Smith and Louise Ammentorp, “From Cinder Blocks to Building Blocks: Creating Beautiful Places in Children’s Spaces”
Children Have a Unique Point of View

Young children view the world from a different perspective from adults. Children’s unique perspectives are greatly determined by their height. They are built close to the ground, so they are always discovering close up: the small ant hill in the crack of the sidewalk, the tiny acorn peeking out from under a fallen leaf, or the glistening droplets on the dandelion.

Young Children are Egocentric

Young children naturally think about themselves, their own needs and views. They believe the world revolves around their perceptions and that everyone feels the same as they do. Because young children are so egocentric, they comprehend situations and events from the point of self. They find it difficult to see another’s perspective; they struggle to realize that what they think is not necessarily what others think.

Young Children Do Not Extrapolate Meaning

Young children find it challenging to extrapolate meaning. They have limited capacity to make quantum leaps in their thinking. For example, in the fall teachers will hang leaves of different sizes, shapes, and colors from the ceiling—some low, some high. We expect children to make meaning of all these leaves hanging at different lengths in the classroom, but unless children are introduced to the experience of a tree in its autumn glory, the pretty leaves hanging from the classroom ceiling are nothing more than visual noise.

Young Children Have Myopic Vision

Young children see the world in a similar way to horses with blinders. Have you ever seen horse-drawn carriages in a city park with the horse’s peripheral vision blocked by blinders? The blinders keep the horse from being distracted by what is going on around him. Young children view the world with myopic or binocular vision, seeing only what is immediately in front of them or directly below their feet.
Children’s Physical Perspectives Differ from Adults’

Take a closer look at the difference between an adult’s visual perspective and a young child’s. This image was taken from the adult’s height. Look closely. What do you see? Your views of the classroom are, for the most part, dependent upon your height. From an adult perspective, you can easily see the learning materials on the shelves, the objects on top of the shelves, and most of the classroom.
Now look at the same spot in the classroom—this time from a child’s perspective. Notice the difference. For a small child, views are dramatically different from the adult’s. The child may see the learning materials on the shelves and a little of what resides on top of the shelves. For the most part, she cannot see over the shelves or see many other parts of the classroom. So from this vantage point, she does not know what play opportunities are available. From a child’s height and binocular viewpoint, her views are limited.
You may be asking yourself: Why should I be concerned about children’s viewpoints? Why should I spend time and energy on changing or reorganizing my classroom to improve children’s views? There are compelling benefits for doing so.

- **Eases transitions**: When the view from the doorway is engaging and welcoming, it encourages an easier transition for children. Johnna Darragh, professor of early childhood education, suggests the view from the entryway is an essential aspect of environmental design. Darragh suggests that entryways be thoughtfully designed in ways to support children’s varied interests. For example, try placing activities at the classroom door, such as a lid game made from container tops and mounted on a small board, a bowlful of corks, or a variety of colorful sunglasses for children to try on and small nonbreakable mirrors where they can admire their reflections. The classroom environment should beckon the child in through the door.

- **Expands views**: Improved views from the middle of the classroom help children see the room’s potential and what opportunities are available to them.

- **Increases focus and engagement**: When children experience clear views of most of the classroom space from the entryway, they are immediately able to see its offerings. They walk readily through the classroom door and immediately become focused and engaged with the materials and space available to them because there are fewer visual distractions.

When Georgette, who enjoys nothing more than snuggling in with a book, can see the classroom’s library from the door, she enters with much anticipation of the potential of a new book or possibly reading an all-time favorite for the umpteenth time. When Manuel crosses the classroom threshold, he can easily see his favorite activity—blocks. The children’s views are calling them into the classroom, supporting their interests, and are unencumbered by furniture or the backs of cabinets. The views most important in an early childhood classroom are the view from the door, the view from the middle of the room, the view beneath the feet, and the view of the walls.

**The View from the Classroom Door**

Though we don’t pay a great deal of attention to doors, they are an important part of our lives. Some doors elicit anxious feelings, such as the door to the dentist’s office.
Entering the door of your favorite restaurant, on the other hand, creates happy, mouth-watering sensations. Regardless of the situation, doors are important because they help transition us from one spot to another and can affect our emotional state.

The classroom door is one of the most significant doors in a young child’s life. The classroom entryway is where a child’s education begins—where motivation, curiosity, encouragement, engagement, learning, and new friendships commence. Because the classroom door plays such an important role of transitioning children from the outside world into the classroom world, critically examine the view from the door. Begin by standing directly in the middle of the entryway. Focus your eyes straight ahead. Look to your left, then to the right, and take note of what you see. Now, crouch down to the height of the children in the classroom. Repeat the process of looking around the room. What differences do you see at the adult height compared to the children’s height? Most likely, your perspective as an adult is much different from the children’s. As an adult, you have a wide-lens view of the entire classroom. A child’s view, however, is quite myopic. Make your hands into binoculars and hold them up to your eyes. Go back to the classroom door, crouch down again, and look through your “binoculars.” What do you see? That is pretty much what the children see upon entering the space. From this view you might see table legs, backs of cabinets, cots, children’s cubbies, and more table legs.

Now reconsider your entryway from a child’s perspective. Are there any inviting views for a young child? Is there a bounty of curiosities and surprises on the other side of your classroom door? Can the children see these curiosities upon entering the classroom?

When educators design and create enticing views from the doorway, children will be eager to cross the classroom threshold. For children to easily transition into the classroom, there must be a compelling reason to enter. The following are strategies, ideas, and things to avoid when creating wondrous views from the classroom doorway.

Create a Curiosity Table
Place a small table near the entryway to the classroom. Position the table so it is easily visible from the door. Children should have a clear view of its contents as they enter.

The curiosity table is an invitation to come in, to actively engage, to discover. The goal of the curiosity table is to provoke children’s interest, to pique curiosity about the interesting objects placed there, and to ignite their minds and bodies so they are eager to make the transition into the classroom.

Consider these tips to create your own curiosity table.

• Collect, arrange, and display materials in meaningful and purposeful ways. Do not burden the table with clutter; rather, select a few items to purposely position on the table. Artfully display the selected items by using easels, interesting containers, and trays.
• Intentionally select objects that would delight and spark children's curiosity. Seek out authentic objects, real rather than plastic. Providing authentic objects to explore and investigate enhances children's opportunities for meaningful experiences.

• Offer highly sensorial objects. It is widely accepted that children learn through hands-on, interactive experiences, so it is important for the curiosity table to offer objects that invite exploration. Offer items such as tree bark, natural sponges, driftwood, pussy-willow buds, and soft green moss.

• Provide unique objects. Young children's attention spans are short; yet, when presented with something new or novel, research suggests that the brain becomes considerably more receptive and attentive. When the brain grows accustomed to a particular object, activity, or space, it has a tendency to tune out. People pay closer attention to ideas, information, and objects when they are new and different. The seminal research of neuroscientist Paul Silvia suggests that for materials to be interesting they must be novel. These objects can be those never encountered before or they can be familiar objects examined from a different perspective.
When was the last time you got down on your hands and knees to see your classroom from a child's height? Effective early childhood classroom design begins from the ground up.

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