ENGAGING THE SENSES FOR EFFECTIVE TRAUMA INFORMED DESIGN

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LEARNING OBJECTIVES

- Understand the concept of trauma, adverse experiences, and trauma-informed design.
- Learn about layered trauma experienced by learners with diverse physical and mental abilities.
- Learn about design strategies for differently abled learners.
- Through a discussion about perceiving space via the human senses, participants will learn techniques to develop sensibilities for trauma-informed design.

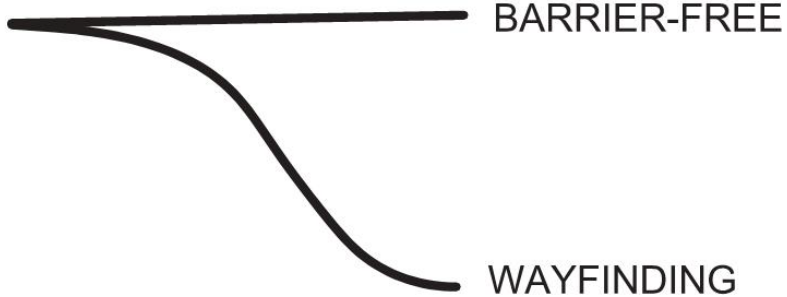

DESIGNING FOR THE SENSES


INSPIRE


NATURE
IS MY
BEST
FRIEND

DESIGNING FOR SENSORY IMPAIRMENTS

AMERICANS WITH DISABILITIES ACT



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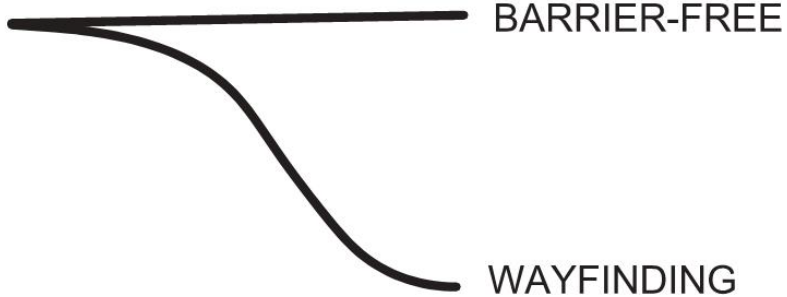
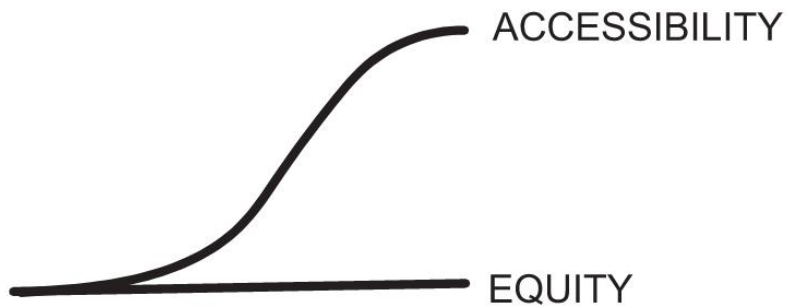


UNIVERSALDESIGN



DESIGNING FOR SENSORY IMPAIRMENTS

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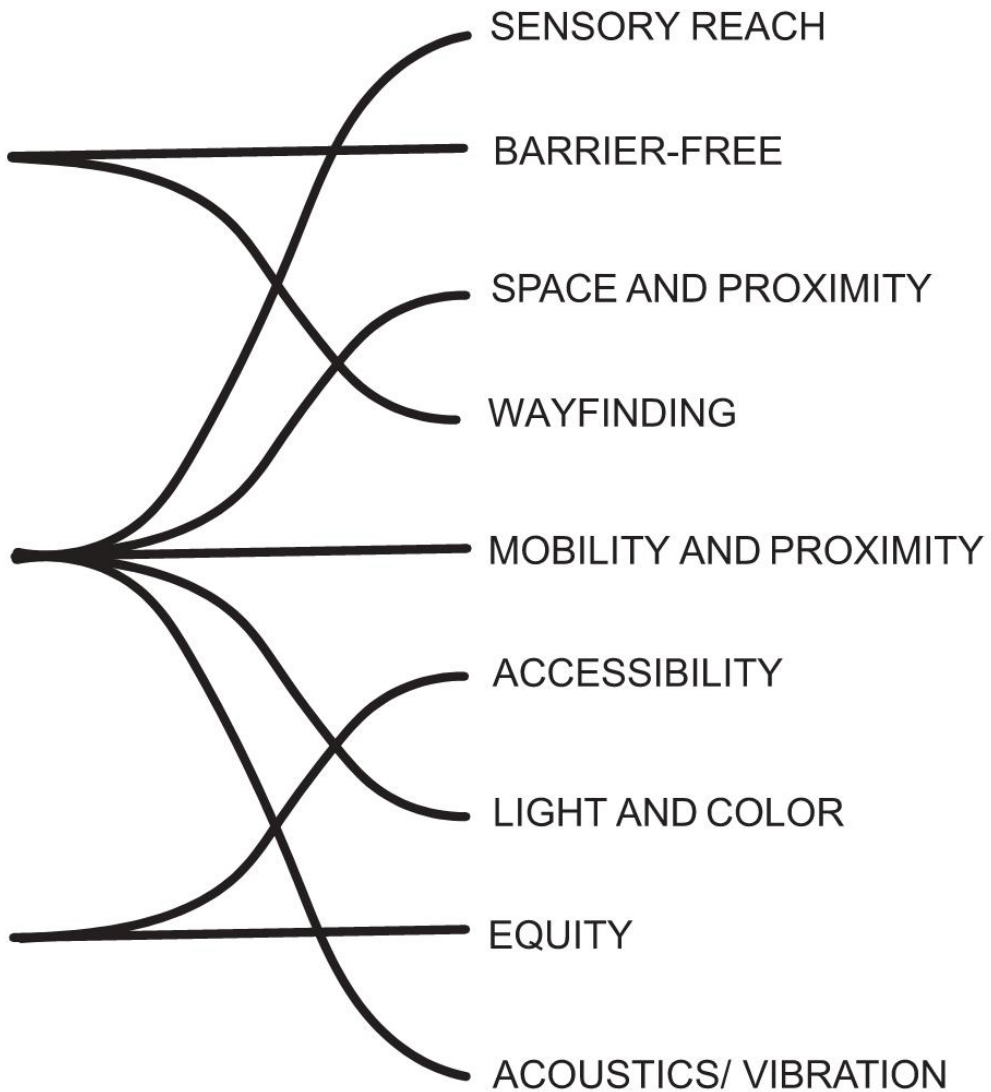
DEAFSPACE

UNIVERSALDESIGN



EXAMPLES OF TRAUMA RELATED TO SENSES

Friendship Park (Parque de la amistad), Marcelo Roux, Gaston Cuna, Patricia Roland and Federico Lezama

PHYSICAL AND MENTAL TRAUMAS CAN RESULT IN...

Increased:

- Stress
- Isolation
- Distractions
- Environmental perception

Decreased:

- Productivity
- Engagement

SENSORY PROCESSING

- Sensory processing allows us to organize information from the environment
- Symptoms range from behavioral to physiological
- Up to 13% of children from 4-6 years of age are affected by Sensory Processing Disorders (SPDs)
- SPDs effect different groups in different ways

THREE PATTERNS

SPDs manifest as extreme reactions to sensory stimuli:

- Sensory Over-Responsiveness
- Sensory Under-Responsiveness
- Craving for sensory input

HYPER-SENSITIVITY

- Brain rewires neurons to gain additional input through operative senses
- "Deaf gain" and "Blind gain“
- Enables perceiving the environment in unique and highly attuned ways

LANGUAGE DEPRIVATION

- Due to chronic lack of full access to a natural language during critical language acquisition period
- About 80% of sensory impaired students experience language deprivation
- Permanent consequences for long-term neurological development

Your Deaf Child's Early Language Acquisition Journey

Check off the milestones your child has reached and share your child's progress at every IFSP & IEP meeting

This Parent Profile is designed to help you track your child's language growth. You and your Early Start or preschool teacher should discuss whether your child is meeting each of these milestones and is making age-appropriate language growth. Check off each milestone as your child meets it. Be an active observer of your child in the exciting journey towards being language ready for kindergarten at age 5.

Start here:

Birth -1 year old

- ☐ Your baby smiles when they see you
- ☐ Your baby looks around and is attentive to people's faces.
- ☐ Your baby shows awareness of the environment.
- ☐ By 12 months, your baby has 1-3 signs and/or words.

1-2 years old

- ☐ Your baby recognizes their own name when it is spoken or signed.
- ☐ Your baby uses signed or spoken names to refer to self and others.
- ☐ Your baby takes 1-2 turns in a conversation.
- ☐ Your baby uses exclamatory expressions.

2-3 Years old

- ☐ By 2½ years of age, your child answers questions with yes or no
- ☐ Your child uses intelligible words or signs about 80% of the time.
- ☐ Your child vocalizes or signs for all needs.

3-4 Years old

- ☐ Your child answers questions logically.
- ☐ Your child starts to understand different perspectives.
- ☐ Your child communicates fluently, clearly, and is easily understood by family and familiar adults.

4-5 Years old

- ☐ Your child begins to ask the meanings of words and signs.
- ☐ Your child uses 2,500+ words and/or signs
- ☐ Your child puts sequencing concepts together.

DESIGN PRINCIPLES / THEMES

Arlington Discovery Elementary School, VMDO Architects

Enabling Village, WOHA

UNIVERSAL DESIGN

- Reduced barriers and obstacles
- Wayfinding
- Accessibility

Hazelwood School, Gordon Murray + Alan Dunlop Architects

UNIVERSAL DESIGN

- Reduced barriers and obstacles
- Wayfinding
- Accessibility
- Tactile materials
- Biophilia
- Acoustics

Truman Elementary School, Bassetti Architects

UNIVERSAL DESIGN

- Reduced barriers and obstacles
- Wayfinding
- Accessibility
- Tactile materials
- Biophilia
- Acoustics
- Technology
- Lighting
- Color coding

BIKURIM INCLUSIVE SCHOOL

Bikurim Inclusive School, Sarit Shani Hay

ANCHOR CENTER FOR BLIND CHILDREN

Anchor Center for the Blind, Davis Partnership

CLASSROOM MAKEOVER FOR THE BLIND

Classroom Makeover for the Blind, Creative Crews

NORTHROP BUILDING

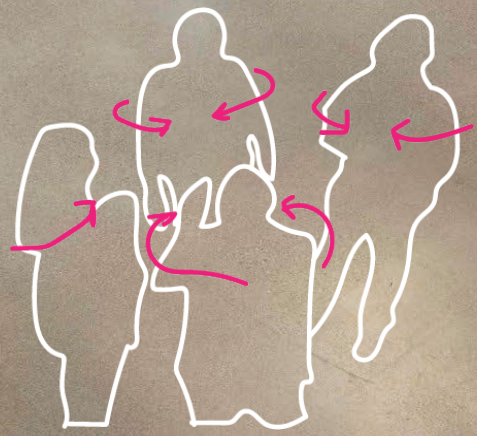
WA Center for Deaf and Hard of Hearing Northrop Building, Bassetti Architects

DEAFSPACE PRINCIPLES

- Sensory Reach
- Space and Proximity
- Mobility and Proximity
- Light and Color
- Acoustics and Vibration

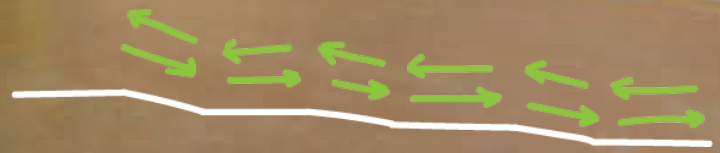
SENSORY REACH

SPACE & PROXIMITY



DEAF SPOT LIGHT®

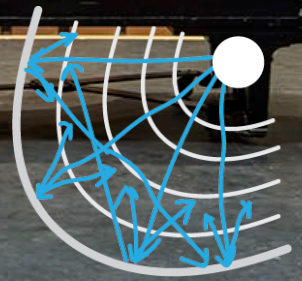
MOBILITY & PROXIMITY



Rocky Mountain Deaf School, Anderson Mason Dale Architects

Rocky Mountain Deaf School, Anderson Mason Dale Architects

ACOUSTICS & VIBRATION



Roosevelt High School, Bassetti Architects

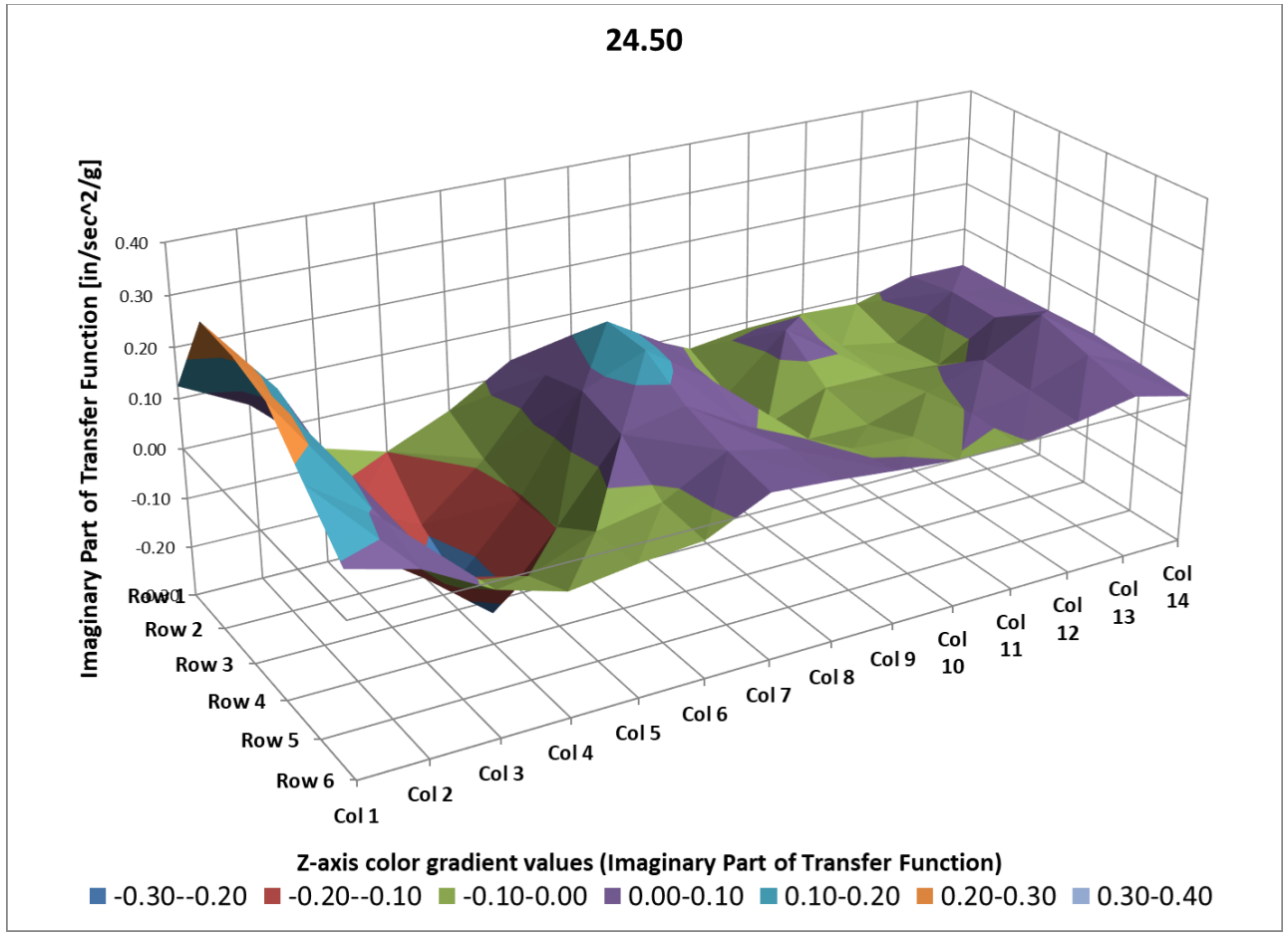
GALLAUDET UNIVERSITY

Living and Learning Residence Hall 6, LTL Architects

GALLAUDET UNIVERSITY

Maguire Welcome Center, C&G Partners

MITIGATING EXTREMES



NOISE AND VIBRATION

- Occupant generated
- Commons, stairwells, fitness rooms, etc.
- Primary method to avoid issues is to ensure the natural frequency of the structure is high enough to not be excited

MEP EQUIPMENT

- Rooftop equipment – location/roof curbs/silencers/springs/rubber
- Transformers – location/walls and doors/rubber
- Pumps and plumbing – location/walls and doors/springs/rubber

ACOUSTIC DISTRACTION

- Tonal noise from MEP system
- Excessive reverberation time
- Exterior noises into the building (emergency vehicles, street traffic, etc.)
- Outdoor instruction spaces

GLARE

- Visual overstimulation/processing
- Balance of natural/artificial and direct/indirect lighting
- Reflectance of finishes and other classroom equipment (projection screens, flat panel displays, etc.)

AIR QUALITY

- Asthma is the leading cause of school absenteeism
- More efficient transmission of infectious disease
- Impacts of undersized maintenance infrastructure and funding
- Increased ventilation associated with improved performance

VOCS & ODORS

- VOCs can lead to irritation of the eyes, nose and throat. Other effects are difficulty breathing, nausea, and headaches
- Material selection plays a critical role in reducing Volatile Organic Compounds (VOCs) in schools

WASHINGTON STATE SCHOOL FOR THE BLIND

WA State School for the Blind, Mahlum

WASHINGTON STATE SCHOOL FOR THE BLIND

WA State School for the Blind, Mahlum

SENSORY ROOMS

- Positive reinforcement of sensory exploration
- Decompression spaces
- Tactile, engaging activities
- Control of light and color
- Biophilic design and/or views

tid TRAUMA-INFORMED DESIGN

Trauma-Informed Design Patterns for Healing Environments


QUESTIONS?