



People in Place

EDUCATION REFLECTIONS

ShawContract®

Re.
flec.
tions



“Everyone makes mistakes.
That’s why there is an eraser on every pencil.”

- JAPANESE PROVERB

**“Together, we can shape
a brighter future for our
students...”**



Want to learn more about
each reflection? Scan here
to dive deeper into our
interactive Reflections book.

As we reflect on the past year, many experiences have impacted our outlook on education environments - past, present, and future. This guide is a digest of findings from conferences, research, and conversations with many of you - educators, administrators, influencers, and passionate individuals committed to elevating education design.

We hope that this comprehensive resource, born from our collective knowledge and experiences, serves as a catalyst for meaningful discussions, collaboration, and a passion for transformative education, highlighting challenges while exploring possibilities for positive change and innovation. Together, we can shape a brighter future for our students, empowering them with the necessary knowledge, skills, and opportunities to thrive in an ever-changing world.

We are grateful for your support and involvement in this endeavor. Your partnership inspires us, ultimately influencing the products and solutions that we provide as a flooring manufacturer. **It is through our collective efforts that we can move towards creating more equitable, inclusive, and innovative solutions that benefit all learners.**

David Lee *Brooke Little*



At Shaw Contract, we design solutions that positively impact people and planet.

We know learning environments influence and play a vital role in the development of our children. These spaces unite us. They provide a foundation for the future of our communities. Together, we have a responsibility to create spaces that support a feeling of safety, belonging, and familiarity. A place where everyone counts.

LEARN MORE ↪



Table of Contents

Introduction	03
School Today	07
Phygital	25
Wellness	49
People + Planet	71
Design	87
Inspiration	107
Impact	117
Resources+	124

Define: The Purpose of Education

Education serves as a transformative vehicle, empowering individuals and shaping society to foster intellectual growth, critical thinking, and civic engagement. With the primary objective of equipping learners with knowledge, skills, and values, the purpose of education extends beyond the ability to retain information. It seeks to cultivate well-rounded individuals who can navigate a complex world, contribute meaningfully to their communities, and embrace the principles of democracy, innovation, and lifelong learning. By nurturing curiosity, fostering creativity, and promoting inclusivity, education across the world has the power to unlock human potential, bridge socioeconomic gaps, and pave the way for a prosperous and just society.



There are **13,318** school districts in the U.S.

128,961 Public and Private
K-12 Schools

This is how they break down:

90,922 Traditional
Public Schools

30,492 Private
Schools

7,547 Public Charter
Schools

REFLECTION NO 2

Population Growth

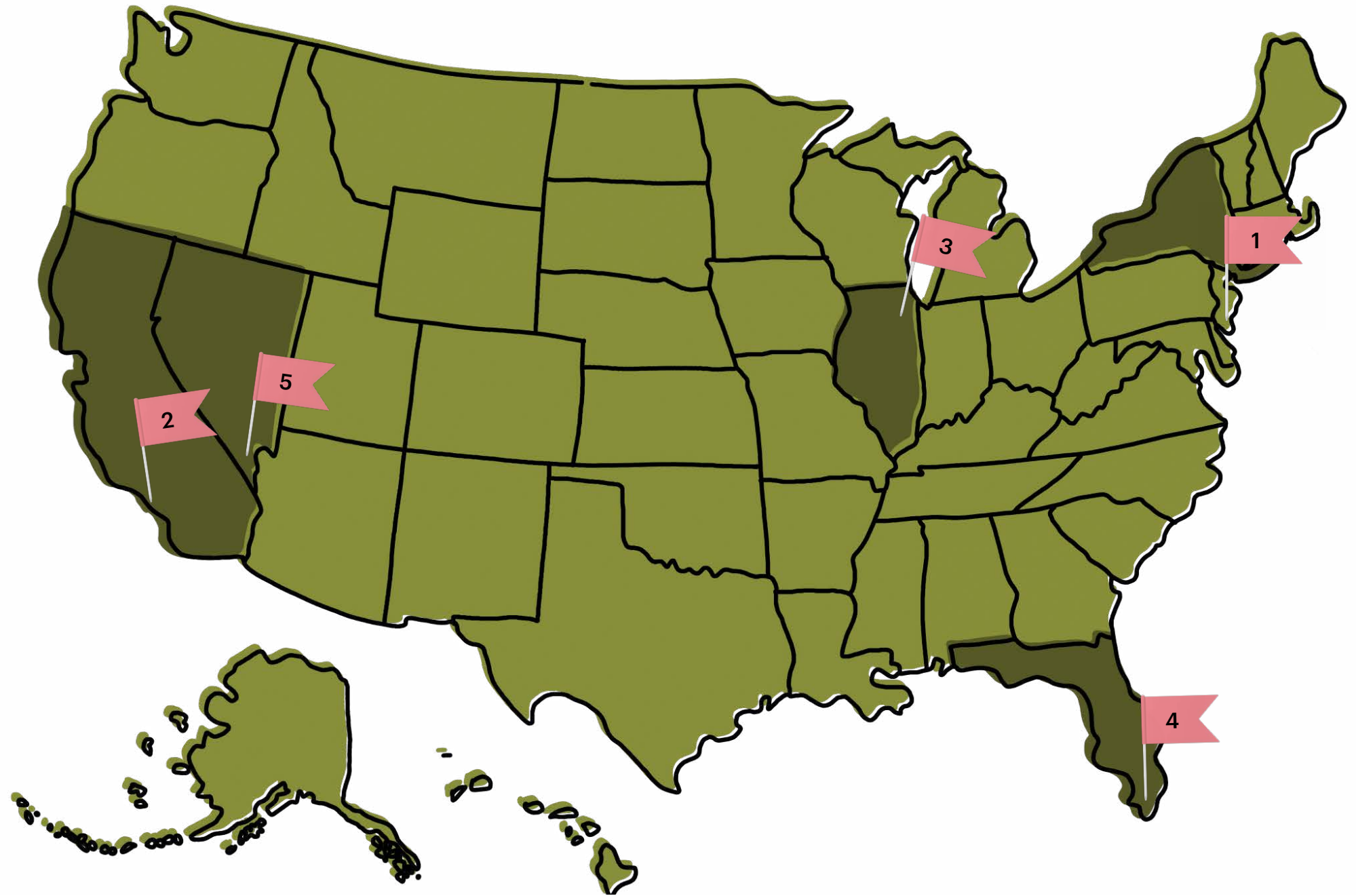
Changing population dynamics impact schools, leading to challenges in classroom capacity and overcrowding. As populations grow, schools face the need for larger, more costly buildings which escalates operational expenses. Overcrowded classrooms hinder individual attention and effective teaching. Understanding the effects of population growth on education is crucial for effective management and ensuring quality education for all.

**5.4% of all students
are home-schooled**

Largest School Districts

Top 5 largest school districts by student enrollment in the U.S.

1. New York City, NY
956,634
2. Los Angeles Unified, CA
483,234
3. Chicago, IL
347,484
4. Miami-Dade County, FL
347,307
5. Clark County, NV
328,991



S-41

S-43

S-45

**TIME SPENT
IN SCHOOL**

ON AVERAGE,
STUDENTS SPEND
180/365 DAYS
PER YEAR IN
SCHOOL.

INDOOR AIR QUALITY

54% OF PUBLIC SCHOOL
DISTRICTS REPORT THE NEED
TO UPDATE OR REPLACE
MULTIPLE BUILDING SYSTEMS,
INCLUDING HVAC SYSTEMS.

Age of Schools

Most K-12 schools
in the United States
are more than 65
years old.

Major Renovation

73% of school
buildings need at
least one major
renovation.

REFLECTION NO 4

State of Our Schools Report

From the 21st Century School Fund, the
International WELL Building Institute and
the National Council on School Facilities



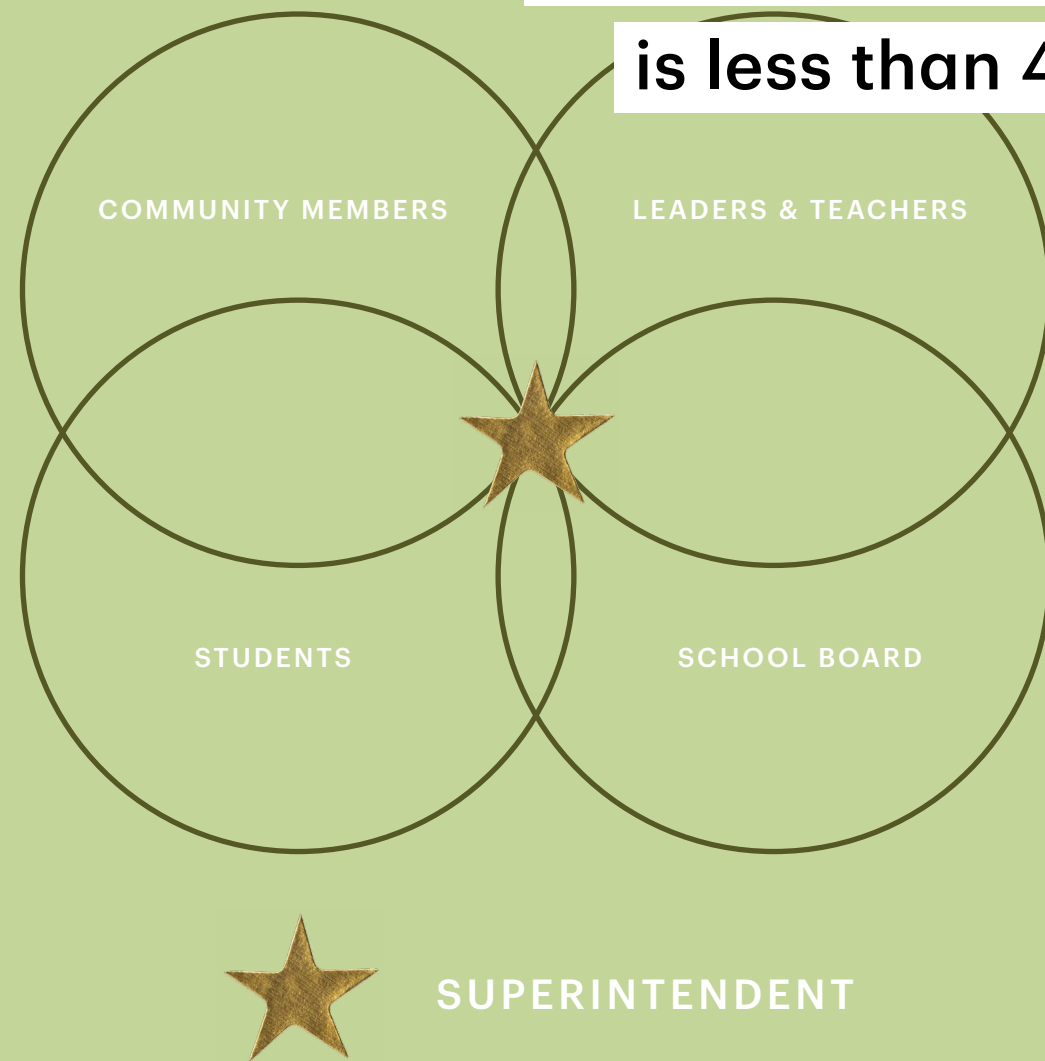
← Download Report

Education Infrastructure Profile by State



← View Here

The average superintendent tenure is less than 4 years.



REFLECTION NO 5

The CEO

Superintendents have faced unprecedented challenges, from COVID-19 related obstacles to divisive education issues, often leaving them isolated. Today, they shift to proactive communication with positive, community-centered messages and aim to engage under-represented stakeholders. They view these challenges as opportunities to reimagine education, address systemic inequities, and foster authentic public engagement. They need resources, coaching, and peer support to aid these efforts, as their roles are demanding and leadership resignations would be detrimental to the education system. Collaboration with peers is essential for overcoming obstacles and staying committed to all students.

REFLECTION NO 6

Teacher Retention

Introducing New Challenges Nationwide

Teacher shortages have resulted in increased class sizes, exacerbating the issue of educator burnout and further perpetuating the cycle of teachers leaving their positions. Larger classes place additional burdens on teachers, such as heavier grading loads, limited time for individual attention, and heightened stress levels. A 2022 survey conducted by the Maryland State Education Association revealed that three out of five members expressed a greater likelihood of continuing to teach if class sizes were smaller. The American Federation of Teachers advocates for the advantages of smaller class sizes, which include more personalized instruction, improved academic performance, and reduced behavioral issues.

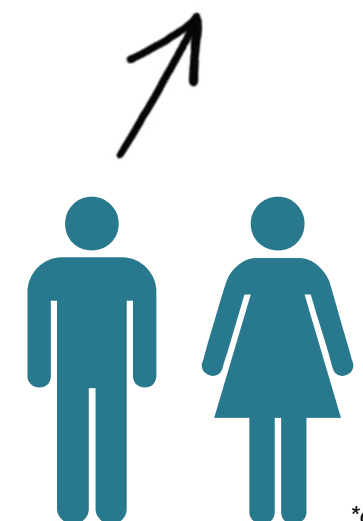
REFLECTION NO 7

Number of Teachers in the U.S.

There are approximately 4 million teachers in the United States. Teachers account for about 2.5% of the working population.

160,316,320*
U.S. Working
Population

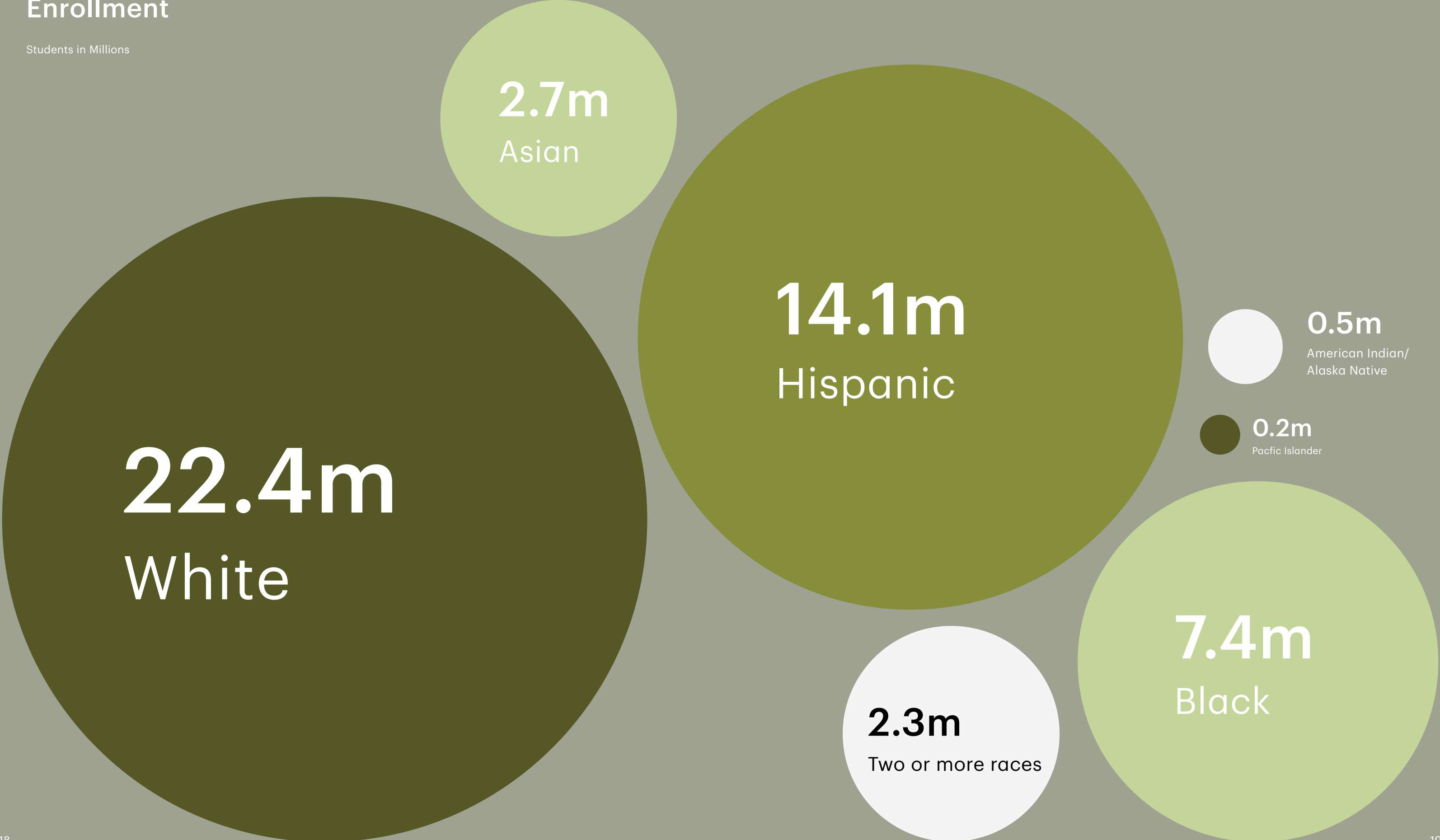
4,007,908*
Teachers



*average in 2023

Enrollment

Students in Millions



Overview of School Behaviors in 2022



Generation Z, Also Known as Zoomers

Born between 1997 and 2012

Makes up 70 million of the population

40% of United States voters

52% of high school students were 'excited' to return back post 2020 school year

Zoomers do not believe their educational experience will adequately prepare them for life after graduation

64% of students that are classified in the socioeconomic status of upper class feel prepared for life after graduation

Gen Z are **2x** as likely to battle depression





Phygital

Integrating physical and digital elements can have a transformative impact on teaching and learning.



REFLECTION NO 11

Quality of Learning Spaces

The environment in which children are educated - including factors such as air quality, acoustics, and overall maintenance - has a significant impact on their behavior, attendance, memory, and academic success. In addition, it is important to note that school buildings don't only affect students; they also have an impact on educators. The quality of school facilities has been linked to teacher retention. It's essential for school administrators, custodians, staff, and volunteers to work in safe and comfortable environments. Considering the pivotal role schools play as community hubs, the quality of their buildings has a profound effect on society at large.



REFLECTION NO 12

Comfort in the Classroom

Comfort in the classroom positively impacts learners by promoting focus, engagement, and concentration. The comfort of a classroom goes beyond paint color and quality flooring; flexible furniture, proper lighting, and temperature control reduce physical discomfort and alleviate stress, creating an optimal setting for active participation and effective learning.

REFLECTION NO 13

Transforming Obligation into Opportunity

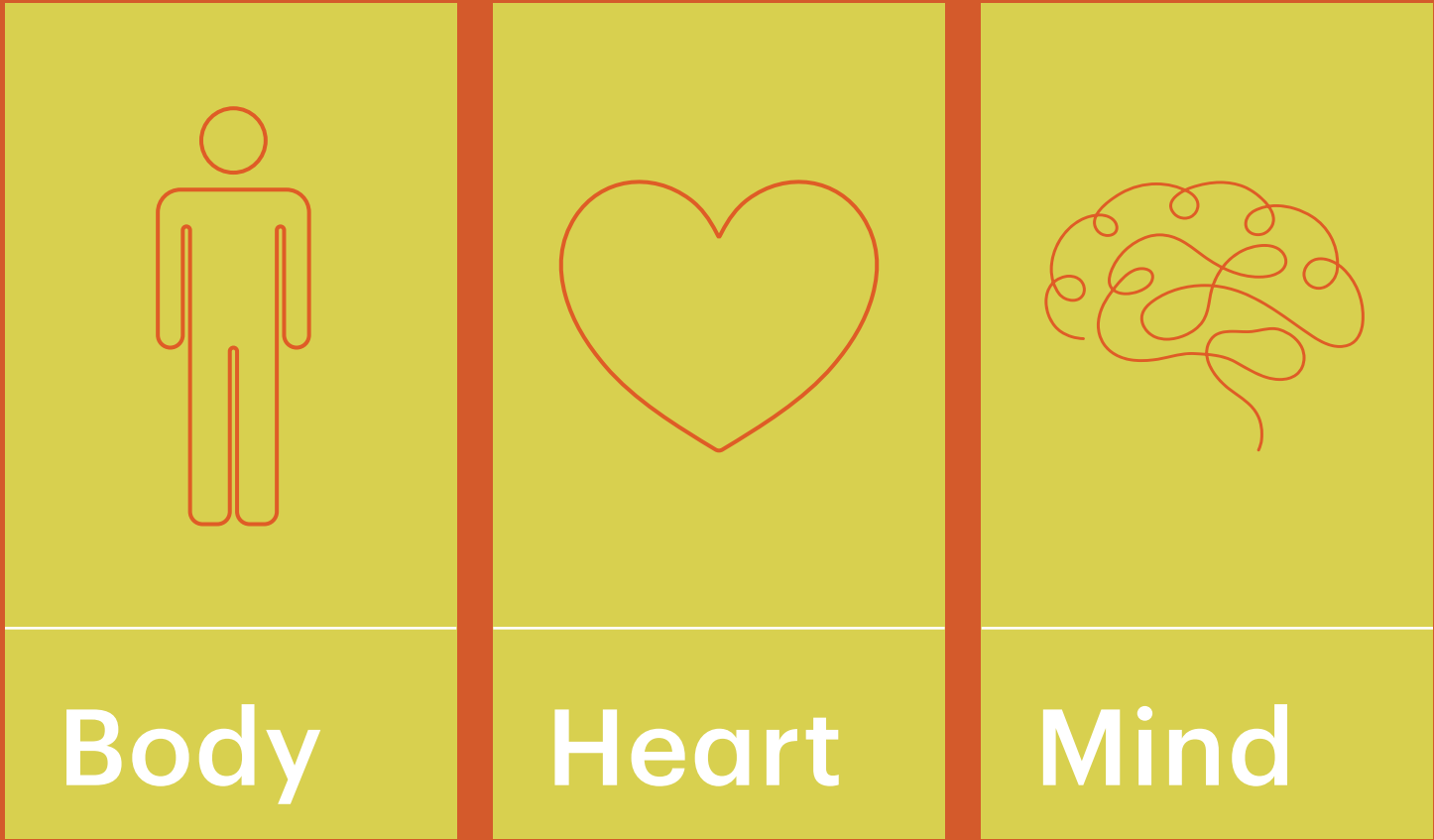
Shifting our mindset transforms learning into an adventure filled with growth, inspiration, and excitement. Creating a space that empowers students to take ownership of their education and pursue their passions requires the collective effort of teachers, caregivers, and students themselves. Classrooms can ignite a passion for learning and make school a place where dreams become reality.

REFLECTION NO 14

Flexible & Scalable

Flexible design is crucial for educational facilities as it allows spaces to adapt to the changing needs and pedagogical approaches of modern education. By incorporating scalable and adaptable features, schools can create dynamic environments and personalized learning. Flexible spaces accommodate different teaching styles, subject areas, and technology integration. This promotes student engagement, innovation, and educational growth, while reducing the need for costly renovations. Embracing flexible design principles ensures that facilities remain agile and responsive, providing optimal conditions for evolving educational practices.

Passive learning is a method of learning or instruction where students receive information from the instructor and internalize it. It is a method “where the learner receives no feedback from the instructor.” The term is often used along with direct instruction and lecturing, with passive learning being the result or intended outcome of the instruction.



REFLECTION NO 15



Three Facets of Whole-Body Learning

Embracing the concept of whole-body learning can transform classrooms into supportive spaces that go beyond traditional, passive learning methods. Incorporating elements that encourage physical activity, interaction with the subject matter, and sensory stimulation enhances cognitive processing and deepens understanding. This approach fosters creativity, critical thinking, and problem-solving skills while also promoting physical health.

REFLECTION NO 16

Freedom to Play

Providing flexibility and empowering children to make choices can serve as wordless approval for play. It is important to ensure that learners have the necessary space, autonomy, and support for meaningful play experiences.

REFLECTION NO 17

Restricting Play

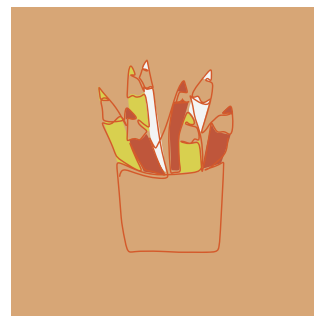
Be mindful - the freedom to play can inadvertently be revoked through restrictions on how a child sits or utilizes space, silently impeding their play opportunities. The decline in play freedom can have detrimental psychopathological effects on children including impaired social skills and decreased creativity.



COGNITIVE



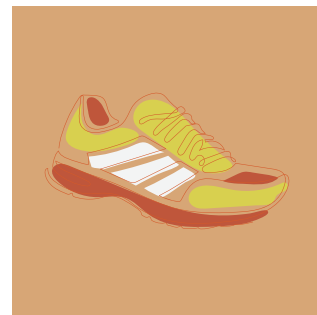
COMMUNICATION



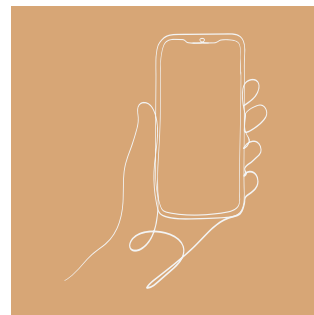
CREATIVE



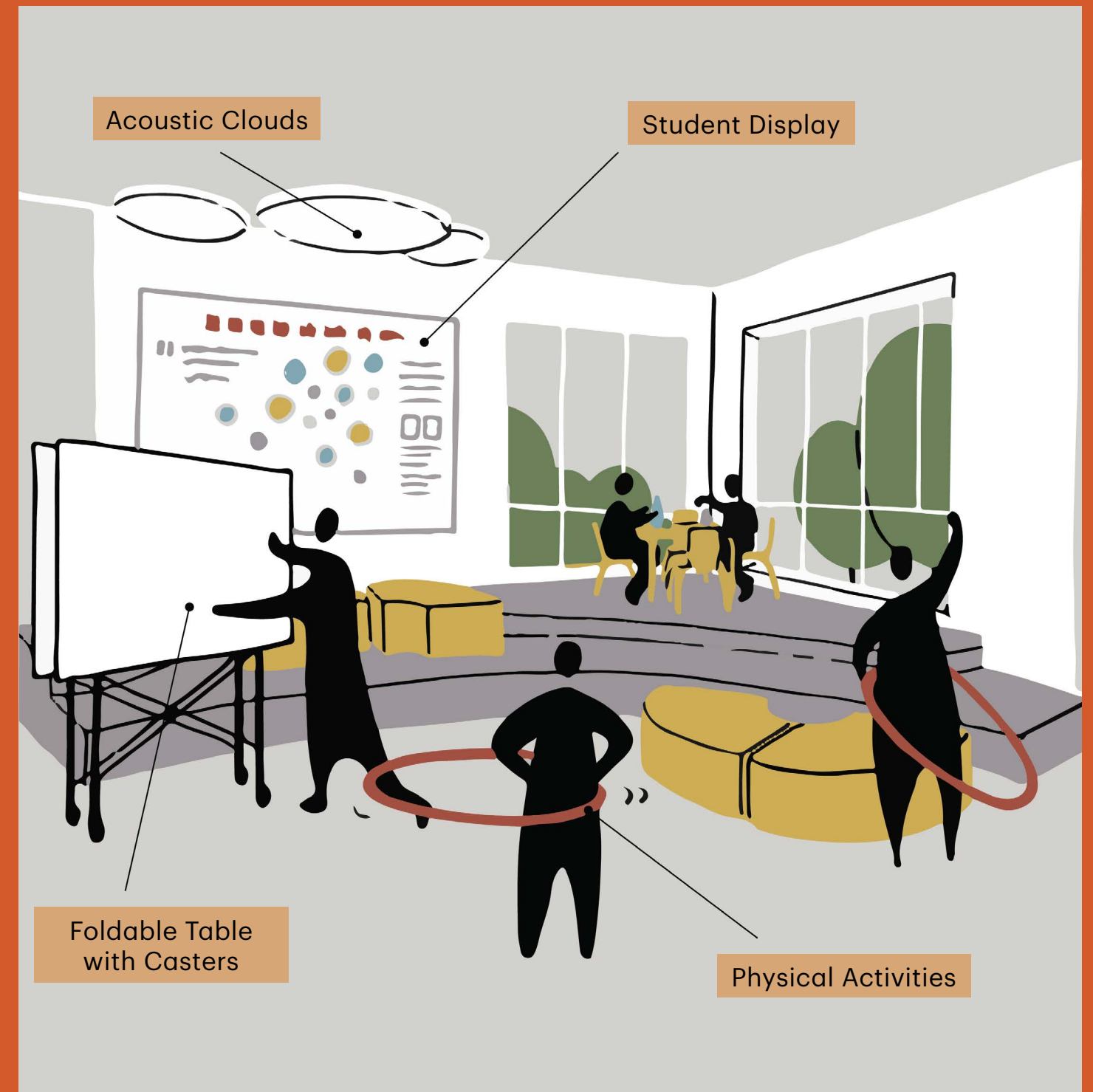
EMOTIONAL



PHYSICAL



SOCIAL



REFLECTION NO 18

Kids Need More Playtime

Mental health depends on our ability to satisfy three basic psychological needs—autonomy, competence, and relatedness. The logic underlying this is straightforward; to feel in charge of our life, we must feel free to choose our own paths (autonomy), feel sufficiently skilled to pursue those paths (competence), and have friends and colleagues for support, including emotional support (relatedness).



Whole-Body Learning
Design Pattern
by Fielding International

REFLECTION NO 19

Nature is Necessary

Studies have shown that students who learn outdoors develop: a sense of self, independence, confidence, creativity, decision-making and problem-solving skills, empathy towards others, motor skills, self-discipline and initiative.

When we integrate nature with the interiors of our learning spaces, the design inspires curiosity, nurtures well-being, and contributes to holistic learning practices. Fostering natural environments has been found to reduce stress levels and enhance attention span.

REFLECTION NO 20

Outdoor Learning

Outdoor classrooms present a cost-effective solution for expanding school capacity. Instead of immediately transitioning all activities outdoors, schools can begin by utilizing outdoor spaces for meals, after-school programs, or music classes. This approach allows for a gradual integration of outdoor learning. Furthermore, the economic investment in outdoor spaces can be flexible, accommodating various budgets and needs.



REFLECTION NO 21

Active Learning

Active learning significantly impacts students' experiences by placing them at the center of the learning process. With enhanced engagement, collaboration, and critical thinking, these dynamic environments encourage active participation, personalized learning, and the development of essential 21st-century skills. Students become active contributors to their education, developing a deeper understanding of the curriculum and equipping them for success in an ever-changing world.

Coding: A Form of Art

Like artists, coders utilize their creativity and problem-solving skills to design intuitive user interfaces and push the boundaries of what is possible. Ultimately, coding merges technical expertise with an artistic mindset, resulting in digital masterpieces that inspire, challenge, and shape our world.

Try out coding





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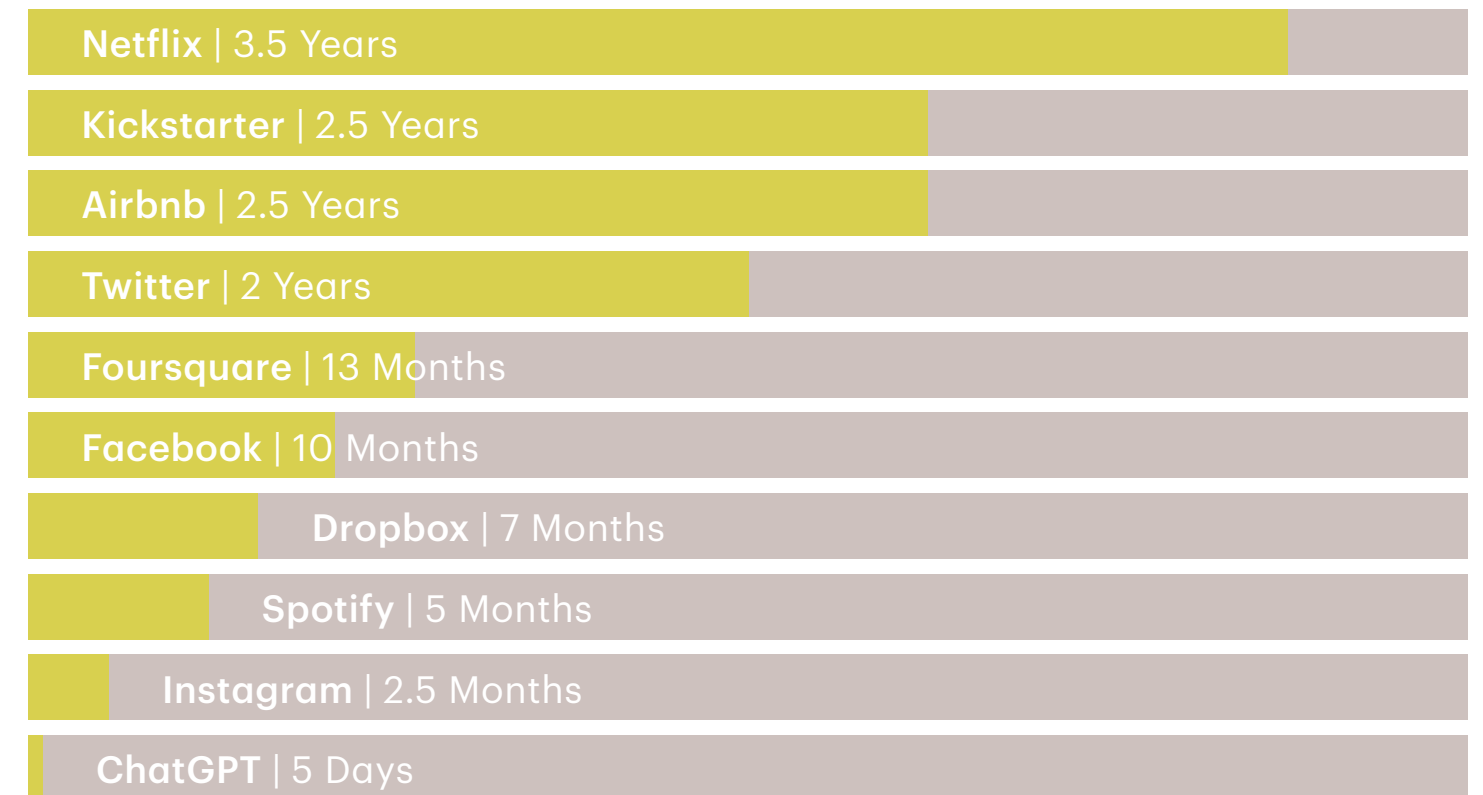
Artificial Intelligence

SC SHAW CONTRACT
What is ChatGPT?

CHATGPT
ChatGPT is a conversational agent based on the GPT (Generative Pre-trained Transformer) architecture. Developed by OpenAI, it's trained to generate human-like text based on the input it receives. It can assist with a wide variety of tasks, from answering questions and providing explanations to engaging in casual conversation.

Message  

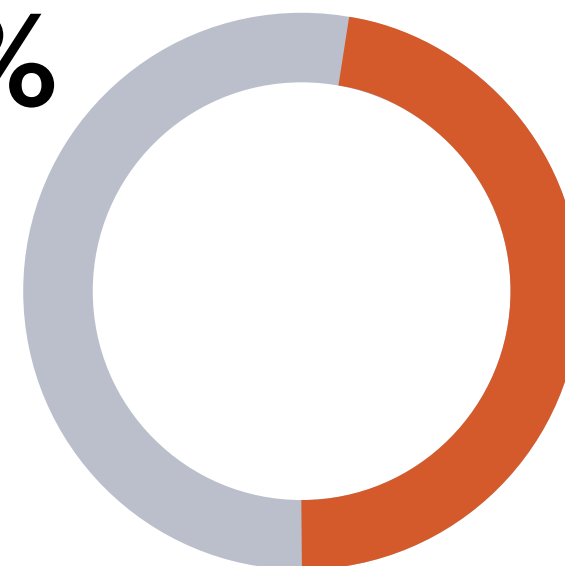
Time Taken to Reach 1M Users



Educators Weigh In on ChatGPT

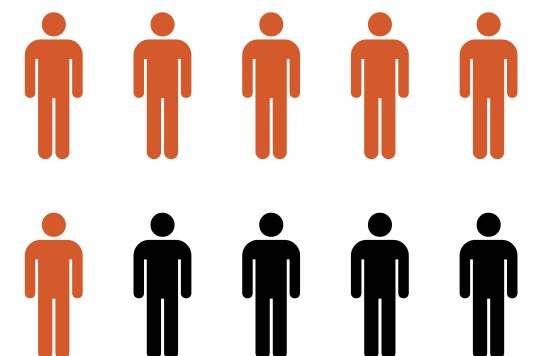
43%

of educators feel the program will make their jobs more difficult.



6/10

teachers predict it will make their lives easier.



“ I feel that social media has had more of a negative impact on the social interaction of today’s learners. Ever since the COVID shutdown, our students have had a hard time adjusting back to a face-to-face interaction with their peers. They became too accustomed to using social media to communicate and interact with one another.

Dr. Wes Dickey
RED TOP MIDDLE SCHOOL PRINCIPAL
CARTERSVILLE, GEORGIA

REFLECTION NO 26

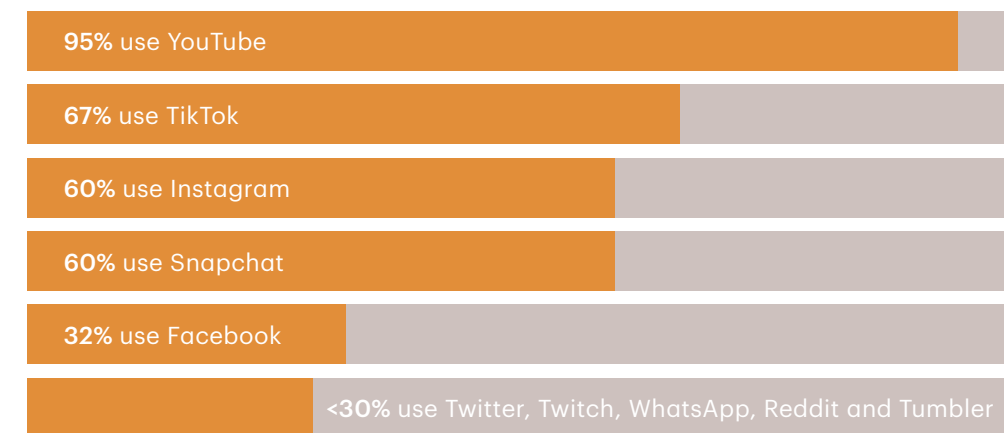
Students & Social Media

54% of teens say it would be hard to give up social media.

Social media has revolutionized information accessibility and connectivity, profoundly impacting students’ lives. It offers unprecedented access to information, breaking down barriers and enhancing learning opportunities. However, the ever-changing landscape of social media poses challenges in navigating the vast amount of content. Educators must recognize the significance of social media in students’ lives and find ways to leverage its potential for meaningful educational engagement. By embracing social media responsibly and thoughtfully integrating it into the learning process, educators can create a dynamic connection with students and a positive impact on their academic journey.

REFLECTION NO 27

2022 Teen Online Landscape



REFLECTION NO 28

Is It Really Socializing?

While social media has become a pervasive part of teenagers’ lives, its impact on their mental well-being and interpersonal connections is raising concerns. Experts have found that increased smartphone and social media usage correlates with higher anxiety levels and decreased satisfaction with life. Many teens are substituting virtual interactions for face-to-face communication, leading to a sense of loneliness and isolation. Educators are grappling with the effects of social media on student mental health and stress levels. Despite being an effective teaching tool, educators are alarmed at its potential to exacerbate anxiety and depression among students. Building awareness and providing resources to help students navigate the pressures of social media is essential to foster a healthier digital environment and promote positive well-being in schools.

REFLECTION NO 29

Immersive & Interactive

The metaverse plays a significant role in transforming public education by creating immersive and interactive learning environments. As an interconnected virtual world, the metaverse offers opportunities for collaborative learning, global connectivity, and experiential education. Students can explore virtual simulations, historical reconstructions, and interactive lessons, fostering engagement and deeper understanding. The metaverse also enables educators to personalize learning experiences, adapt content to diverse learning styles, and provide real-time feedback. Through virtual classrooms and social interactions, students can connect with peers and experts from around the world, promoting cultural exchange and global citizenship. The metaverse has the potential to revolutionize public education by enhancing accessibility, fostering creativity, and preparing students for the digital future.



← Learn about
New Technology

REFLECTION NO 30

Enhancing Engagement

Envision exploring ancient Roman ruins through visual immersion, experiencing the scenery in virtual reality instead of reading from a textbook.

Metaverse –
Over 400M
monthly
active users

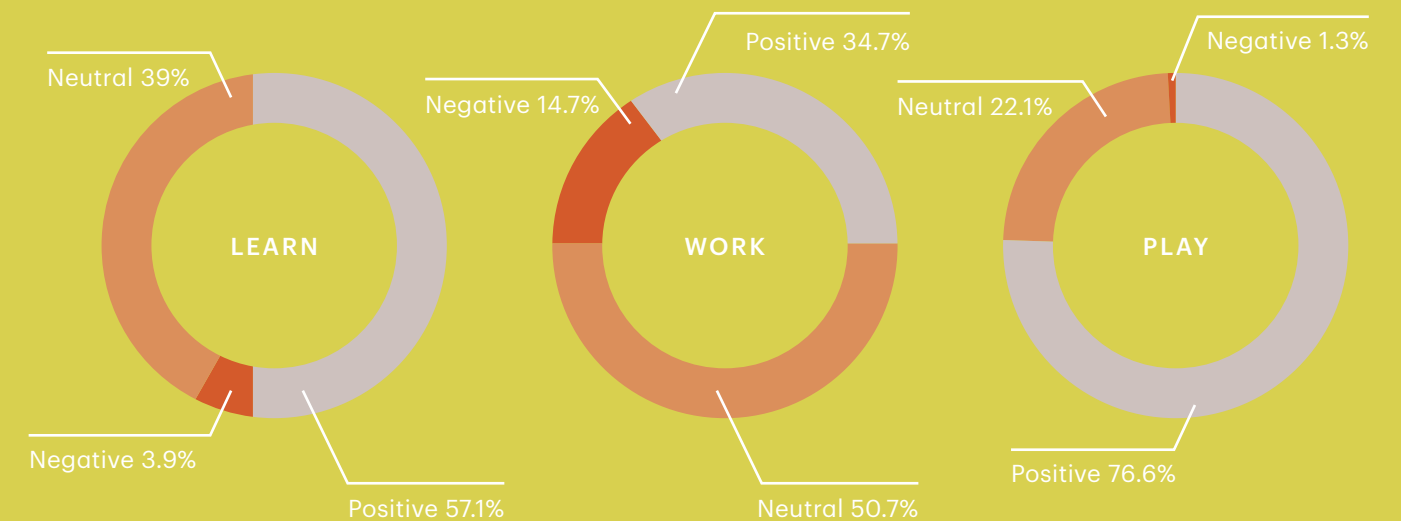


51% of the metaverse user base is 13 or younger.

Roblox, a gaming environment, is the biggest virtual world in the metaverse.

REFLECTION NO 31

Users' Preferences for Spending Their Time in the Virtual World



Blended

REFLECTION NO 32

Blended Learning

Blended learning model courses have proven to be more engaging for students of all ages—from elementary school to higher education. In fact, a study by the Center for Digital Education found 73% of educators who utilize this model saw an increase in student engagement.

99%
of public schools offer full-time in-person learning

33%
offer full-time remote learning

9%
offer hybrid learning

REFLECTION NO 33

Ability to Personalize

A 2021 study shows the majority of teachers (57%), principals (65%), and administrators (73%) think digital learning tools are more effective than non-digital tools for personalizing instruction and engaging students with school and learning.

REFLECTION NO 34

Best of Both Worlds

Benefits of in person learning

- social and emotional connection and development
- access to facilities and resources
- networking

Benefits of remote learning

- flexibility
- accessibility

REFLECTION NO 35

Life is Infused

Ubicomp (*ubiquitous computing*) stands in contrast to virtual reality, as it brings computers out into the real world rather than immersing people in computer-generated environments. This concept envisions the physical environment as the fundamental infrastructure for creating smart homes, campuses, and smart cities. It revolves around the idea that any item, from clothing and tools to appliances and vehicles, as well as homes and even the human body, can be equipped with chips to connect seamlessly to an expansive network of interconnected devices.





Wellness

The physical, mental, and emotional well-being of students, educators, and staff within educational institutions. It encompasses a holistic approach to creating a supportive and healthy learning environment that fosters the overall well-being of all individuals involved.

Diversity, Equity & Inclusion

REFLECTION NO 36

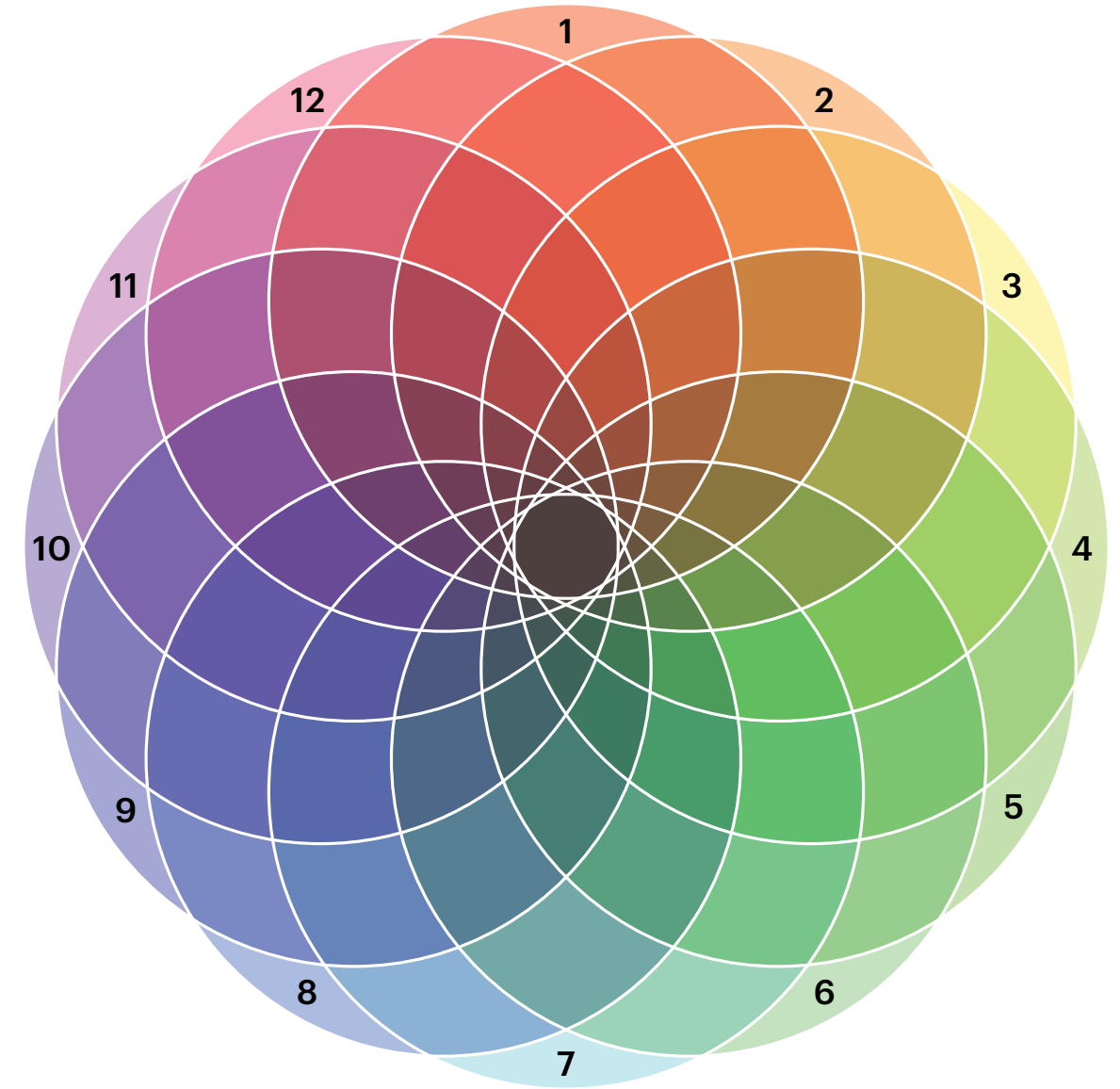
Community Inside Schools

When schools, parents, caregivers, families, and communities work together to support learning, students tend to earn higher grades, attend school more regularly, stay in school longer, and enroll in higher level programs.

REFLECTION NO 37

Belonging

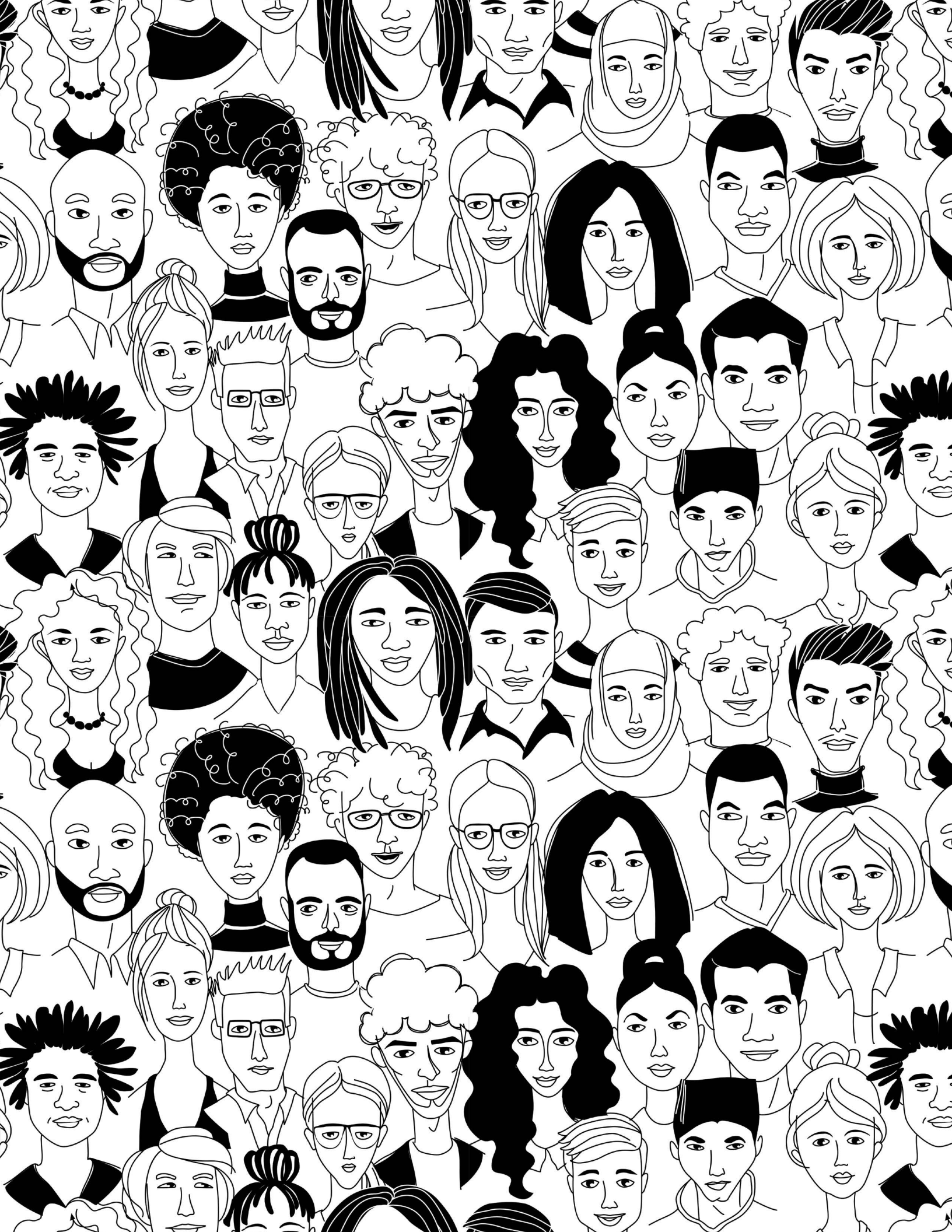
Fostering a sense of belonging in the learning environment is crucial for students' well-being and academic success. It goes beyond a mere human need; it has profound implications for physical and mental health. Belonging positively impacts sleep quality, cognitive functioning, mental wellness, academic performance, and even long-term outcomes like career satisfaction and community engagement. To create a sense of belonging, educators must nurture competencies like communication skills, cultural identity development, and valuing students' prior knowledge. They should provide opportunities for students to practice belonging through group dynamics, inclusive physical spaces, and flexible scheduling. By prioritizing belonging, educators can establish inclusive and supportive environments that optimize students' well-being and learning experiences throughout the year.



Intersectionality

- 1 Race
- 2 Ethnicity
- 3 Gender Identity
- 4 Class
- 5 Language
- 6 Religion
- 7 Ability
- 8 Sexuality
- 9 Mental Health
- 10 Age
- 11 Education
- 12 Body Size

Illustration inspired by artwork from @sylviaaduckworth



“

If we are to achieve a richer culture, rich in contrasting values, we must recognize the **whole gamut of human potentialities**, and so weave a less arbitrary social fabric, one in which each human gift will find a fitting place.

Margaret Mead
AUTHOR & ANTHROPOLOGIST

Mental Health & Academic Success

The interplay between mental health and academic achievement is a two-way street. Mental health challenges can hinder learning, while academic struggles can negatively impact mental well-being. However, positive mental health and academic success can also mutually reinforce one another. When students experience support and success in their educational journey, it boosts their self-esteem, emotional well-being, and overall mental health, leading to improved school performance.





REFLECTION NO 39

Differences Not Deficits

People experience and interact with the world around them in many different ways; there is no one “right” way of thinking, learning, or behaving, and differences are not viewed as deficits.

REFLECTION NO 40

Individuality

Creating a classroom environment that nurtures students’ individuality is a fundamental aspect of effective teaching. Recognizing and valuing their distinct strengths, interests, and abilities empowers students, building their confidence and engagement in learning.

REFLECTION NO 41

Behavior is Communication

When individuals, especially children, exhibit challenging behaviors, it is essential to recognize that their actions are conveying important messages. Understanding the messages behind challenging behaviors, especially in those with sensory issues, is crucial. Sensory issues can lead to frustration, anxiety, or overstimulation, resulting in challenging behaviors as a way to cope with overwhelming sensations. By acknowledging the role of sensory processing in behavior, we can design spaces that support sensory needs and foster a more positive and nurturing environment.



Social & Emotional Safety

Creating a safe and conducive learning environment is about physical security and emotional safety. Social-emotional learning (SEL) can help students recognize and manage their emotions, build empathy, and establish positive relationships. Daily lessons and interactions focus on core competencies like self-awareness, self-management, social awareness, relationship building, and responsible decision-making. These skills are not confined to the classroom but are practiced throughout the school, creating a climate characterized by kindness, respect, and collaboration among students and staff.

Sense of Belonging

A study by HKS states:

“The concept of a sense of belonging is crucial in a school environment as it resides at the intersection of social, emotional, and physical safety, forming the safety triad. When students feel a strong sense of belonging, they experience a deep connection to their school community, fostering overall well-being, academic engagement, and positive social interactions. By prioritizing and cultivating a sense of belonging, schools can create an inclusive and supportive environment where students thrive. #spacetobelong



REFLECTION NO 44

Physical Safety

In 2019, 21.6% of students reported feeling satisfied with their safety at school, compared to 76% of educators and 35% of parents.

76%
Educators

35%
Parents

21.6%
Students

REFLECTION NO 45

Digital Safety

With technology playing a larger role in education, prioritizing safe internet usage is essential. Children face risks like cyber-bullying, exploitation, and exposure to inappropriate content. Recognizing the importance of online safety, programs that promote safe technology use can greatly impact students' mental health and well-being.

REFLECTION NO 46

Finding Balance

The debate between transparency and potential distraction in school design revolves around the advantages and disadvantages of features like glass walls and open spaces. While interior glazing promotes passive supervision and safer environments, concerns arise regarding student privacy and distractions. Finding a balance is crucial. Using transparent upper portions of walls or providing areas of refuge within classrooms are great examples. Ultimately, schools should prioritize connectedness, create intimate learning spaces, and strike a balance between safety and their core mission of education and inspiration for future generations.





REFLECTION NO 47

Let Kids Be Kids

Allowing children to embrace their natural curiosity and enjoy their educational journey is crucial. By implementing discreet security measures and equipping teachers and administrators with effective tools, architects can create a safe and secure learning environment where students can freely explore, learn, grow, and socialize without the burden of constant vigilance.

REFLECTION NO 48

Security Without Physical Barriers

Cultures of trust within schools build environments where bars on doors and windows, symbols of the school-to-prison pipeline, are replaced with open spaces that promote safety, inclusivity, and positive educational experiences for all students.



Time to Reflect

What role can school policies and programs play in promoting safety, reducing the need for physical security measures?

What design elements and strategies can we implement to foster a sense of community among students and staff?

How do we ensure that the learning environment is inclusive and accommodating for students with diverse social and emotional needs?



People + Planet

When we talk about sustainability we join the causes of people and planet together, social and environmental concerns combined. Sustainability is what unites us. It is our foundation and our purpose: our equal rights, our shared experience, our hopeful future. It is the air we breathe and the earth we stand upon.

Indoor Air Quality

When a room is better ventilated, influenza rates, asthma attacks and absenteeism go down, reading and math test scores go up. Less carbon dioxide builds up in a room, which helps students think more clearly.

Ventilation is a vital aspect of indoor air quality and can be achieved through mechanical systems, like HVAC, or naturally, by opening windows and doors. Natural ventilation is influenced by factors like wind and temperature disparities. However, outdoor air often requires energy-intensive treatment before indoor introduction. The cost of outdoor air ranges from a few dollars to \$10 per person annually, with substantial benefits. Studies indicate that under-ventilated schools correlate with increased infection transmission, asthma exacerbation, and cognitive/health impacts. Classroom under-ventilation in the U.S. is a common issue, attributed to installation issues, deferred maintenance, and energy-saving attempts.





REFLECTION NO 50

Ingredients Matter

By prioritizing proactive measures to address harmful chemicals, schools can create healthier environments that protect the well-being and academic success of both students and the dedicated teachers and administrators. It is essential to recognize that children are particularly vulnerable to the risks posed by these substances due to their developing bodies and behaviors. Exposure to hazardous chemicals can result in respiratory issues, poor academic performance, and increased absenteeism. By selecting environmentally-friendly products and implementing effective chemical management practices, safety protocols, and preventive strategies, schools can ensure the safety and health of their entire school community.



← A deeper look
at material health

REFLECTION NO 51

Youth Councils

Youth councils across America are taking a strong stand on environmental and climate justice, recognizing the urgent need to address these pressing issues for the well-being of present and future generations. By engaging in advocacy, education, and community action, youth councils are driving positive change and amplifying the voices of young people in the fight against environmental degradation and climate change.

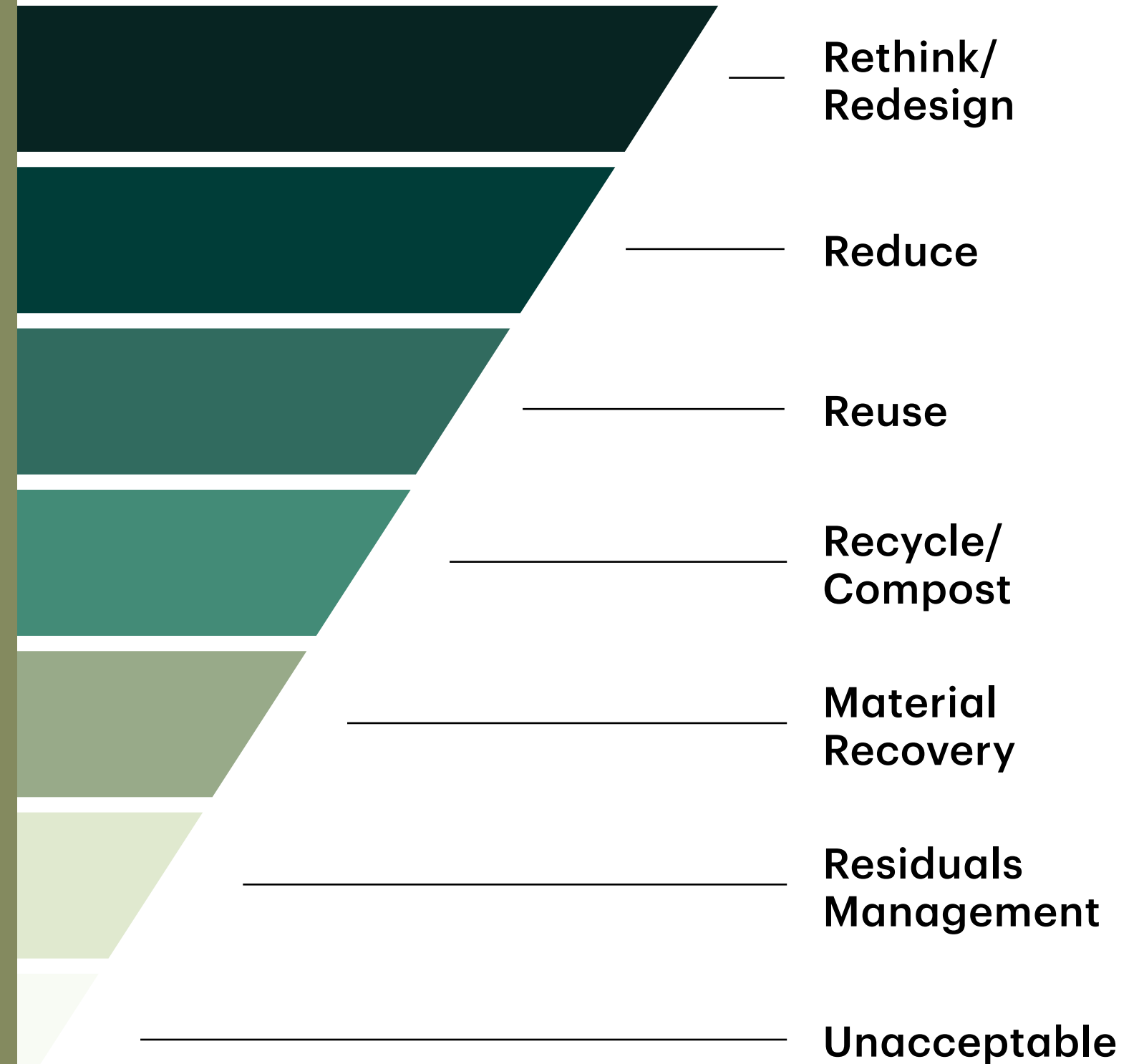
REFLECTION NO 52

Aspirational Meets Attainable

Striking the right balance between aspirational and obtainable sustainability goals is necessary for driving meaningful change. While ambitious aspirations inspire innovation and progress, they must be supported by practical steps that are achievable. By setting sustainability goals that are both aspirational and obtainable, communities and individuals can foster a sense of purpose and motivation while ensuring tangible progress towards a sustainable future.



Zero Waste Hierarchy 8.0



REFLECTION NO 53

Zero Waste

Zero Waste is a holistic approach that aligns with environmental stewardship and education. It emphasizes fundamental change by designing products with reuse and recycling in mind, eliminating waste subsidies, and holding manufacturers accountable for product lifecycles. Schools embracing this vision prioritize recycling and composting to reduce landfill waste, reduce purchasing practices, and promote waste-free lunches. However, to achieve true zero waste, educating the school community, ensuring proper waste segregation, and addressing the challenges of mislabeled “compostable” materials is essential.

REFLECTION NO 54

Today's Convenience Culture

On average, a student who brings a packed lunch generates around 67 pounds of waste each school year. While the convenience of prepackaged, kid-sized products may save caregivers time, it comes at an economic and environmental expense due to the additional waste produced. Moreover, the production of these items utilizes finite resources, contributing to the accumulation of waste in landfills.

REFLECTION NO 55

Practicing Circularity

To foster a sustainable future, the education system must transition from lecture-based approaches to participatory learning experiences focused on sustainable consumption and production. By incorporating real-life examples and creative projects into the curriculum, students can develop a deep understanding of their impact on the environment and society.

REFLECTION NO 56

Construction Waste

The commercial construction industry accounts for 39% of energy-related carbon dioxide emissions annually.

REFLECTION NO 57

Landfill Diversion

In 2018, the Environmental Protection Agency (EPA) estimated 3.4 million tons of municipal solid waste (MSW) was generated from carpets and rugs. The report further stated that 73% of the 3.4 million tons were landfilled.



3.4m tons
of municipal
solid waste

=



The weight of
141,828 average
size school buses

Carbon

REFLECTION NO 58

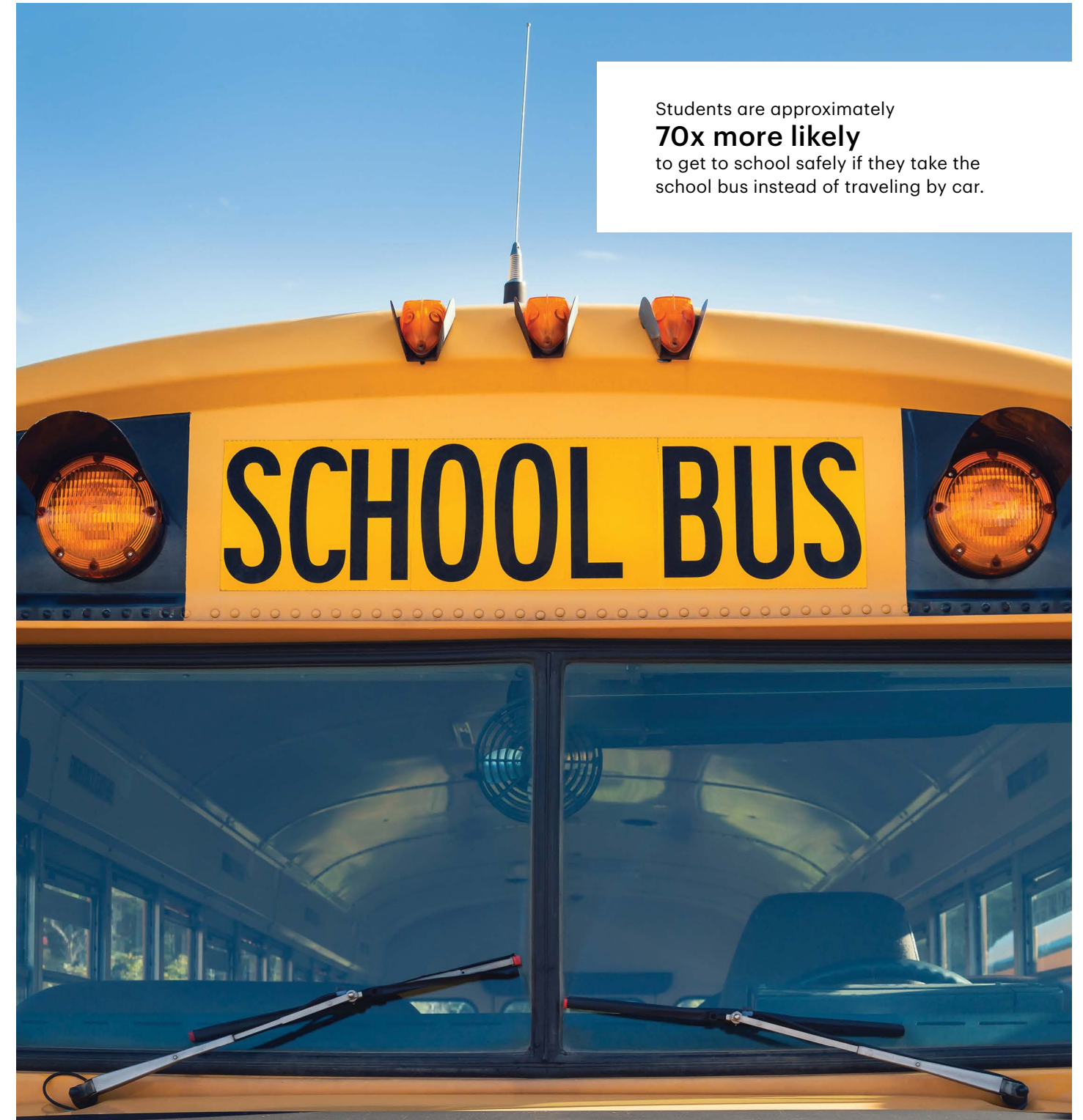
The School Bus Impact

The school bus is more than a form of transportation. It is a place of community that supports social development, fosters relationships, and increases the likelihood of a safe arrival at school. School bus ridership saves:

Over
17 million cars
from joining the daily commute.

More than
2.6 billion gallons
of gasoline per year.

Over
20 million tons
of CO₂ emissions.



Students are approximately
70x more likely
to get to school safely if they take the
school bus instead of traveling by car.

REFLECTION NO 59

Zero-Emission & Low-Emission

With funding from the Bipartisan Infrastructure Law, the EPA's new Clean School Bus Program provides \$5 billion over the next five years (FY 2022-2026) to replace existing school buses with zero-emission and low-emission models.



Time to Reflect

How are the values of today's generation of learners driving sustainability movements in your community?

How do you play a role in landfill diversion in your everyday life?

What measurables are you using to ensure products used in schools are safe for the people and the planet?



Design

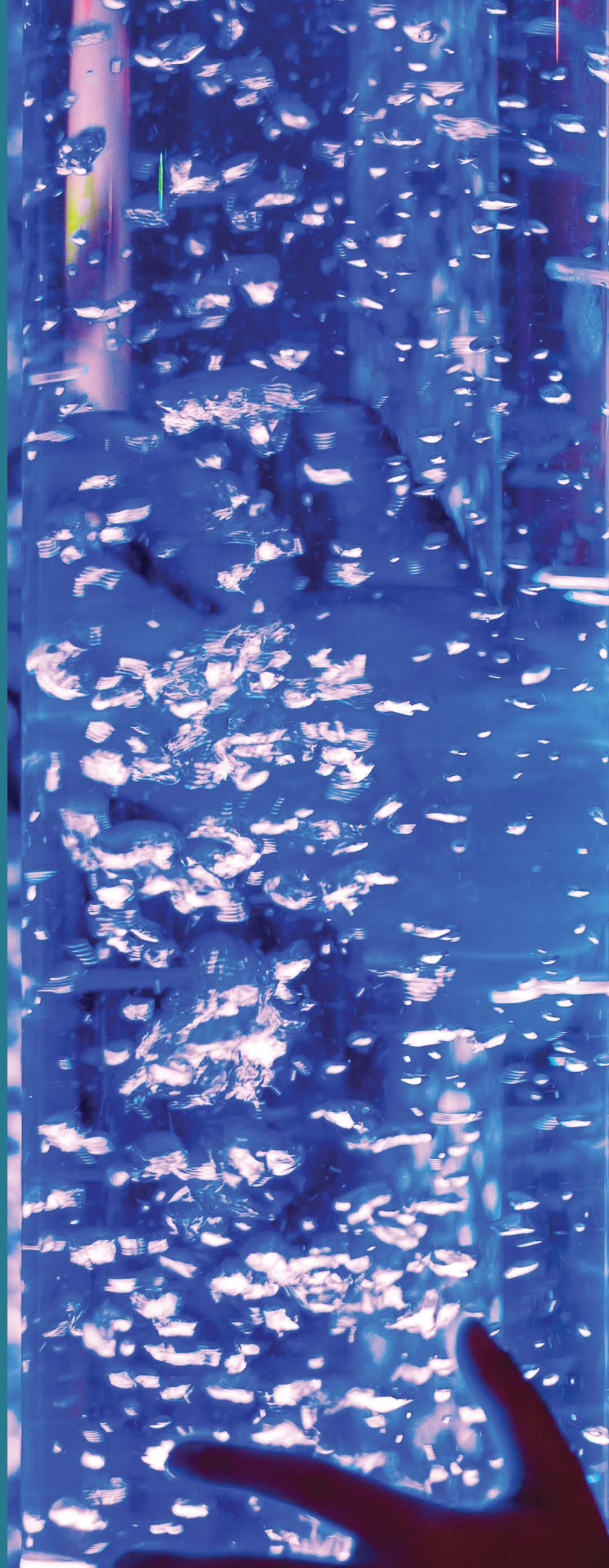
A well-designed education space can enhance engagement, motivation, and the overall effectiveness of learning. An intersection of aesthetics and functionality, thoughtfully-designed spaces help support learners' needs.

Materials

REFLECTION NO 60

Snoezelen

The magic of a Snoezelen room lies in its ability to empower students and foster independent exploration. Unlike traditional classrooms, Snoezelen rooms provide a space free from instruction, allowing students to freely interact with the environment and discover at their own pace. With a wide range of customizable objects and settings, each experience in the room becomes unique and engaging. While not a formal treatment or therapy, the Snoezelen room serves as a sensory spa, offering students a chance to relax, recuperate, and make choices that directly influence their sensory sensitivities. Extensive research supports the transformative effects of Snoezelen sessions, highlighting the positive impact on behavior and subsequent activities.



Snuffelin:

Dutch for Explore +

Doezelen:

Dutch for Relax

= Snoezelen

REFLECTION NO 61

The Invisible Reason Johnny Can't Read

Poor classroom acoustics create a negative learning environment for many students, especially those with hearing or learning difficulties. Acoustical conditions in many classrooms are unsuitable for tasks such as learning to read, listening, or understanding unfamiliar material. Poor classroom acoustics are frustrating for both students and teachers. Excessive noise and reverberation in many American classrooms can cause up to 25% of information to be missed, impeding effective learning and comprehension.

Deficits in reading and language skills due to poor classroom acoustics are cumulative; the effects of poor classroom acoustics on young students can be devastating.



Sources of classroom noise include:

- 01: Interior equipment such as the fans in overhead projectors and computers.
- 02: Poorly insulated walls, ceilings, or floors.
- 03: Exterior sources such as corridor traffic and playground interactions.
- 04: Interior noise such as heating, ventilating and air conditioning (HVAC).



REFLECTION NO 62

Sensory Play

Engaging a child's senses through activities like playing with slime, riding a bike, or listening to music has multifaceted benefits. It promotes language and motor skills, fosters cognitive growth, encourages social interactions, and sparks experimentation. Moreover, sensory materials and activities target two senses often overlooked- proprioception and vestibular. Our proprioception sense helps us know where body parts are relative to one another and tells us how much force we need to exert when holding or lifting objects. Our vestibular sense allows us to maintain balance as we move.

Creating an environment where children can explore all their senses supports the development of neural connections in their brain pathways. This, in turn, aids children in successfully tackling more intricate tasks.

REFLECTION NO 63

Patterns are Everywhere

Learning environments provide a platform to teach pattern in many ways. By incorporating repetitive schedules, consistent directives, or using a repeated arrangement of shapes and colors to navigate spaces, patterns offer direction without explicit instructions. Repetitive patterns play a significant role in the cognitive development of children, including critical thinking and logical skills.

Color Generates Interest

Color influences the learning process and how a learner responds in the space - thoughtful color schemes can transform a dull atmosphere into an engaging and stimulating one, positively impacting academic achievement and reducing absenteeism. However, it is important to strike a balance, as too many colors can overwhelm students. By incorporating colors strategically, such as using warm tones to promote creativity and enthusiasm or cool tones to induce calmness and relaxation, classrooms can create an environment that supports student well-being and enhances the learning experience.

Color Theory

The psychology of colors.



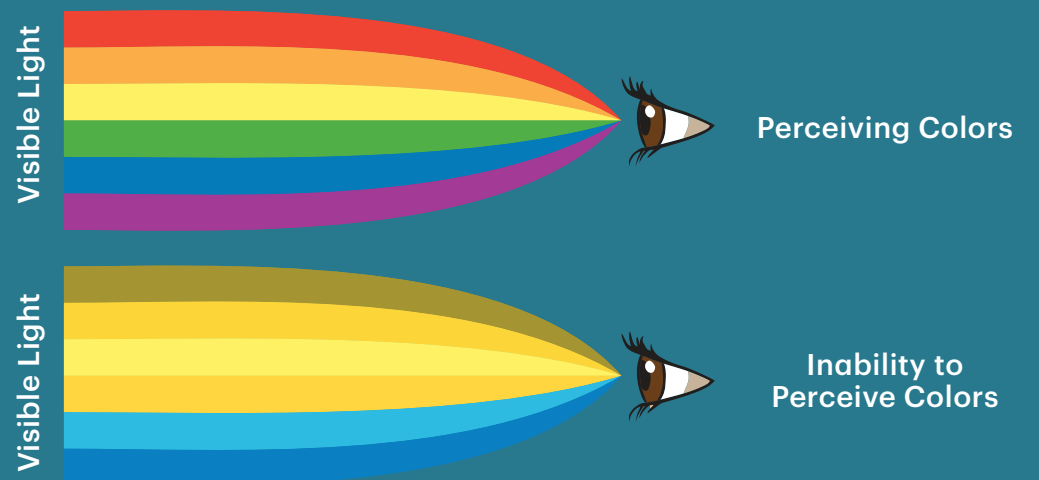
Color's Connection to Memory

From an early age, children link colors with meanings and ideas, forming the foundation of their comprehension of the world. For instance, they grasp the progression of banana ripeness from green to yellow to brown. This familiarity with the color spectrum allows us to interpret significance and outcomes, playing a crucial role in our early learning experiences. Educators can strategically use color as an active participant in shaping cognitive abilities.

Color Vision Deficiency

For color-normal students and teachers, color is an important and useful tool. However, for colorblind learners, it can create challenges that undermine their confidence and ability to learn causing frustration and even anger.

Color Vision Deficiency affects 1 in 12 boys, or 1 in 200 girls essentially one student in every classroom. While people with normal color vision see over 1 million shades of color, the color blind only see an estimated 10% of hues and shades. Since 80% of information is conveyed visually, it is important that we don't rely on color alone.



REFLECTION NO 68

Equitable Opportunity

Designing without considering the specific needs of learners leads to a one-size-fits-all approach that excludes certain individuals. By neglecting equity in design, we unintentionally create exclusivity, limiting access and hindering inclusion.



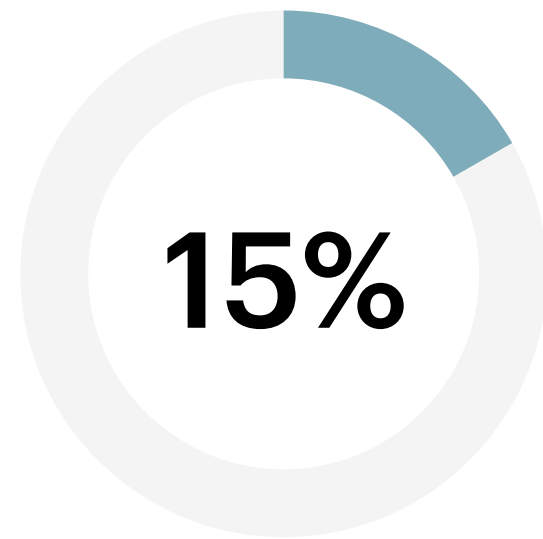
REFLECTION NO 69

Mental and Emotional Healing

Recognizing the significant influence of stress on learning and well-being, schools must prioritize holistic support within their facilities. Learning environments should go beyond mere educational spaces, transforming into restorative havens that offer safety, personalized care, and access to counseling and mentoring services. By considering the unique challenges and stressors faced by students and staff, design strategies can prioritize health and wellness in the learning environment from the onset.

Everybody Counts

In 2021-2022, 7.3 million students between ages 3 and 21 received special education services under the Individuals with Disabilities Education Act (IDEA).

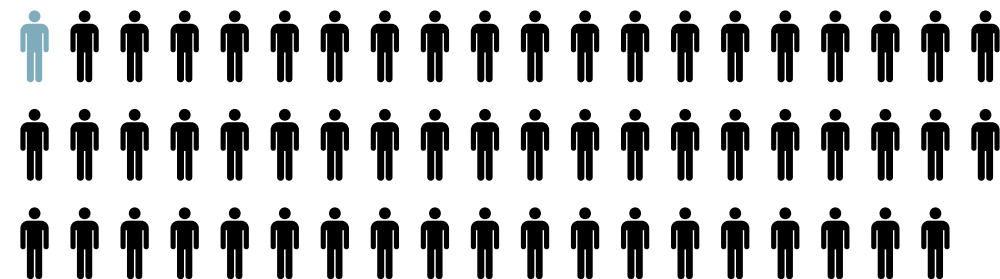


15% of all public school students received special education services under the Individuals with Disabilities Education Act

Autism Spectrum Disorders (ASD)

1/59

U.S. children is estimated to have ASD.



“The corridors and halls of almost any mainstream school are a constant tumult of noises echoing, fluorescent lights (a particular source of visual and auditory stress for people on the autism spectrum), bells ringing, people bumping into each other, the smells of cleaning products and so on. For anyone with the sensory hyper-sensitivities and processing problems typical of an autistic spectrum condition, the result is that we often spend most of our day perilously close to sensory overload...”

Clare Sainsbury
AUTHOR



REFLECTION NO 72

Enhance the Human Experience

Neuroarchitecture revolutionizes the way we design spaces by prioritizing the emotions, healing, and happiness of the users.

By incorporating subjective factors such as emotion, well-being, and happiness alongside technical parameters, architects can create environments that positively impact people's experiences. Through advancements in neuroscience and technology, we can now measure and understand how elements like shapes, colors, and scale influence human perceptions. This deeper understanding allows us to design spaces that evoke positive emotions, enhance well-being, and create memorable experiences. The integration of neuroscience and architecture creates endless possibilities for designing spaces that truly connect with and enhance the human experience.



Inspiration

The process of being mentally stimulated to do or feel something. Inspiration takes on diverse forms when creating a space that is conducive to learning, creativity, and well-being; kindling a passion to enhance the educational experience, contribute to the success and satisfaction of both students and educators while empowering the next generation.

REFLECTION NO 73

The Impact of Classroom Design

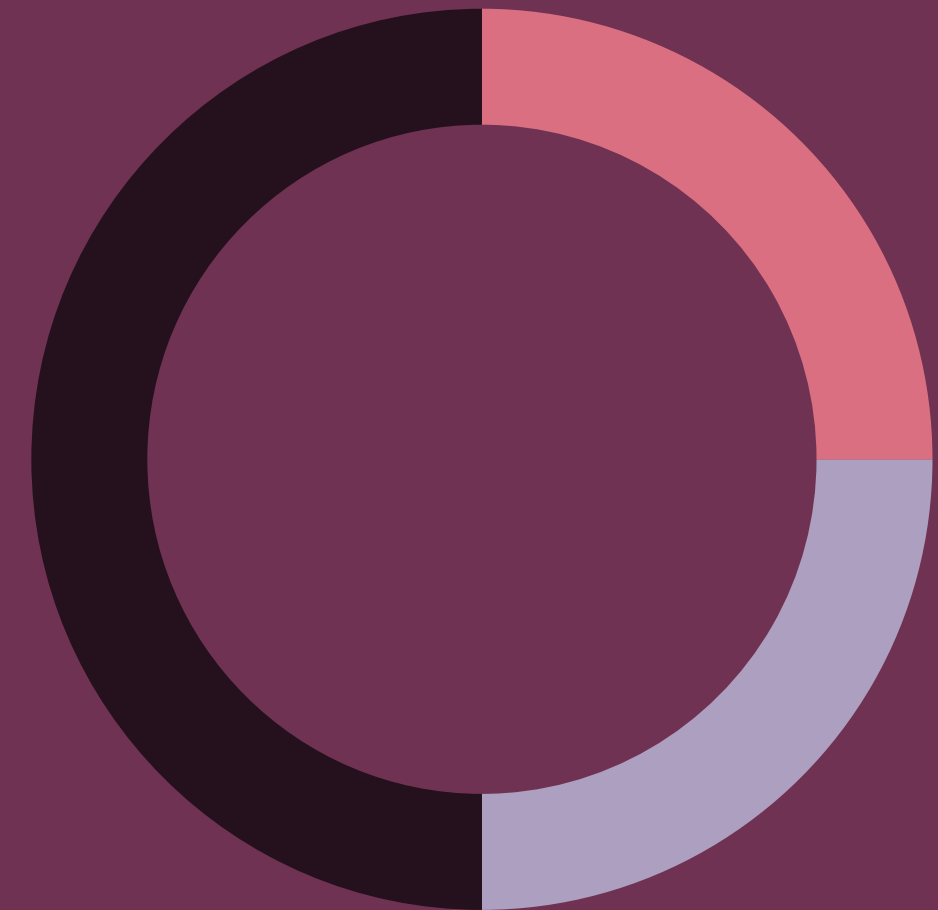
Research completed in the U.K. suggests the impact of building design on human performance and well-being in general can be isolated and that it is non-trivial.

In this particular case, the naturalness design principal accounts for around 50% of the impact on learning, with stimulation and individualizations accounting for roughly a quarter each. Within this structure, the **seven key design parameters** explain 16% of the variation in pupils' academic progress achieved.

27
Schools

153
Classrooms

13,766
Students



25% Stimulation

Color and complexity

25% Individualization

Ownership and flexibility

50% Naturalness

Light, temperature, air quality

Focus on the Positive

We can create inclusive and empowering environments by emphasizing and building upon the strengths, talents, and resources within a community. This approach fosters a sense of value, resilience, and collaboration, unlocking the full potential of individuals and fostering thriving communities.



The budget won't allow for that



I can leverage my industry partners to identify a solution that delivers a quality alternative

Billable hours don't allow for ample research time



I can leverage connections and technology to help gather the insight I need

They will never let me try something that different



I can share some success stories and highlight the benefits

The specification calls for outdated material



I can respectfully challenge the existing specification to better understand the 'why'

Asset-Based Community Development

The Asset-Based Community Development approach emphasizes building upon the strengths and assets already present within a community. By recognizing and mobilizing the gifts and skills of individuals, associations, institutions, place-based assets, and connections, community development becomes a collaborative process that leverages the existing resources. This approach shifts the focus from addressing needs and deficits to harnessing the potential of community members and their collective assets, fostering stronger social capital and promoting sustainable growth.



REFLECTION NO 76

Retrain the Brain

Neuroplasticity offers a fascinating perspective on how students can enhance their learning and cognitive abilities. As they encounter new experiences, their brains forge fresh connections between neurons, creating pathways for memory and skills. Through repetition and practice, these pathways become deeply ingrained, leading to improved proficiency in various tasks. The brain's ability to strengthen and eliminate neural connections through synaptic pruning allows students to adapt continuously to their environment. This means that students can actively shape their brain's architecture by replacing unfavorable pathways with beneficial ones. Embracing this concept empowers students to take charge of their own learning, enabling them to overcome challenges, acquire new knowledge, and develop vital skills for lifelong success.



Time to Reflect

How often are we focusing on a deficit when crafting innovative solutions?

What are some standard practices that should be considered unfavorable pathways and need to be repaved?

How can we enhance our collaboration with industry partners to effectively address our daily challenges?



Impact

Our chance to merge teachings, leverage strengths, and unify communities, thus forging deep and enduring transformation.



REFLECTION NO 77

We Can Go Further, Together

Like-minded partnerships bring together key stakeholders dedicated to enriching our education system. Collaborative decision-making is essential and should include teachers, students, families, professionals, and the broader community. These partnerships supplement school learning, promote lifelong learners, and aim to create effective strategies through research and shared expertise.

REFLECTION NO 78

Focus on the Purpose

Placing students' needs at the forefront is paramount in education. By prioritizing their well-being, growth, and learning, we create an environment that supports their individual development. Tailoring teaching approaches, curriculum, and learning environments to meet their diverse needs fosters inclusive and effective education that empowers each student to reach their full potential.

REFLECTION NO 79

Challenge Assumption

Imagine the transformative power of rewiring our default response mode. By pausing, taking a deep breath, and challenging our assumptions before responding, we open the door to critical thinking. Simply asking, "Is that so?" challenges the validity of our assumptions and sparks the thinking process.

REFLECTION NO 80

Stand the Test of Time

A well-designed school considers the resources necessary for its long-term maintenance. By incorporating sustainable and durable materials, efficient systems, and thoughtful maintenance plans, we can ensure the school's functionality and longevity. Understanding the ongoing maintenance requirements of the school and implementing strategies to meet them not only preserves the investment but also demonstrates a commitment to creating a sustainable and thriving educational environment for years to come. By designing with maintenance in mind, we build schools that stand the test of time and provide long-lasting educational opportunities for generations of students.

High School Learners

The dropout rate of students in high school is **5.2%**

The crime committed by high school dropouts accounts for

75%

61.8%

of high school students will attend university or college in the year 2022.

Most high schools have an average graduation rate of

87%

62%

of recent high school graduates enrolled in college.

45%

of the students are stressed most of the time due to the pressure of studies.

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Space, Like Language

“space, like language,
is socially constructed;
and like the syntax
of language, the
spatial arrangements
of our buildings and
communities reflect
and reinforce the
nature of gender, race,
and class relations in
society.”

Leslie Kanés-Weisman
EDUCATOR AND AUTHOR



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