A4LE

Association for Learning Environments
Northeast Regional Conference

Digging DEEPER for real LEARNING Results

Leon Chatelain, AIA
Bowie Gridley Architects

Catherine Saldutti
EduChange

Xenia Cox
Archademia

Brian Mills
The Met School

March 16, 2017

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Digging DEEPER for real LEARNING Results

Learning Objectives

1. What impacts student outcomes in education.
2. How to have successful conversations with teachers.
3. How to have cross-sector interaction between educators and planners.
4. Understand successful design results of this cross-section interaction

March 16, 2017

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Multiple Measures of Student Learning

Catherine Saldutti
President, EduChange, Inc.

Measuring Learning

Assumption: Positive net growth is a desirable outcome for educational designs.

Reality: Most school assessments do not measure long-term growth.

Learning is mainly about growth.

How will you measure the impact of your architectural designs on student learning?

Standardized Tests

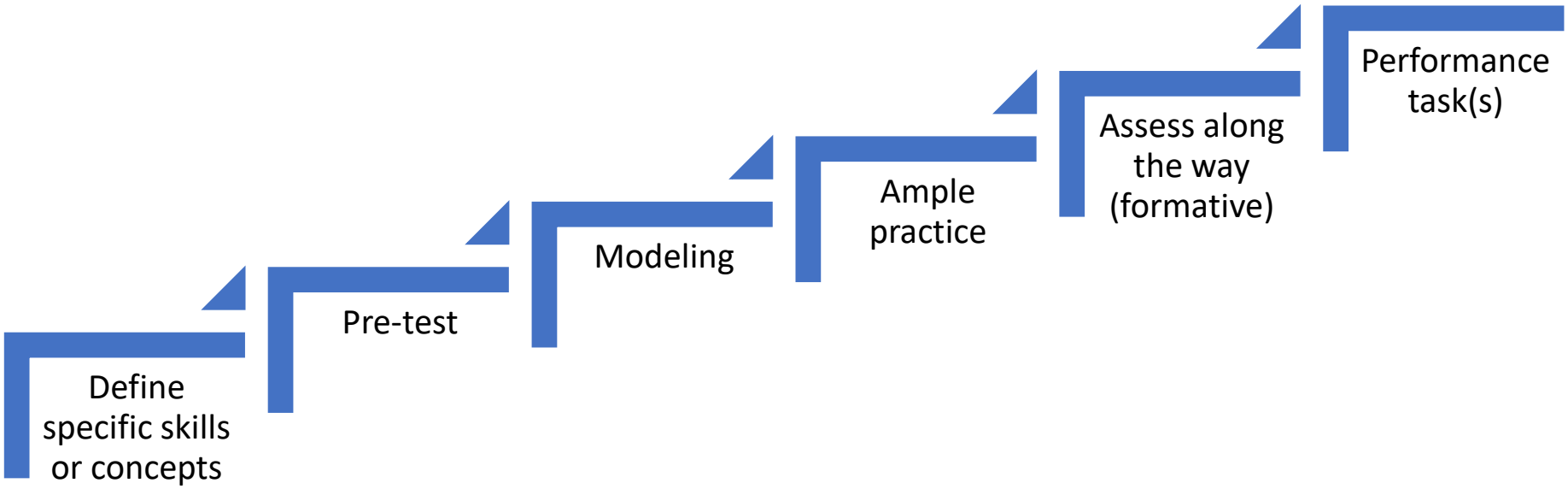
- *Designed to take a 'snapshot' of particular types of performance, and to map long-term trends, across a large sample size*
- *Useful at the district, state, national levels*
- *Data often misused by schools and teachers*

How?

Well-known Standardized Tests

- *SAT, PSAT, AP* *https://www.collegeboard.org/*
- *IB* *http://www.ibo.org/*
- *NAEP* *https://nces.ed.gov/nationsreportcard/*
- *PISA* *http://www.oecd.org/pisa/*
- *TIMSS* *http://timssandpirls.bc.edu/*

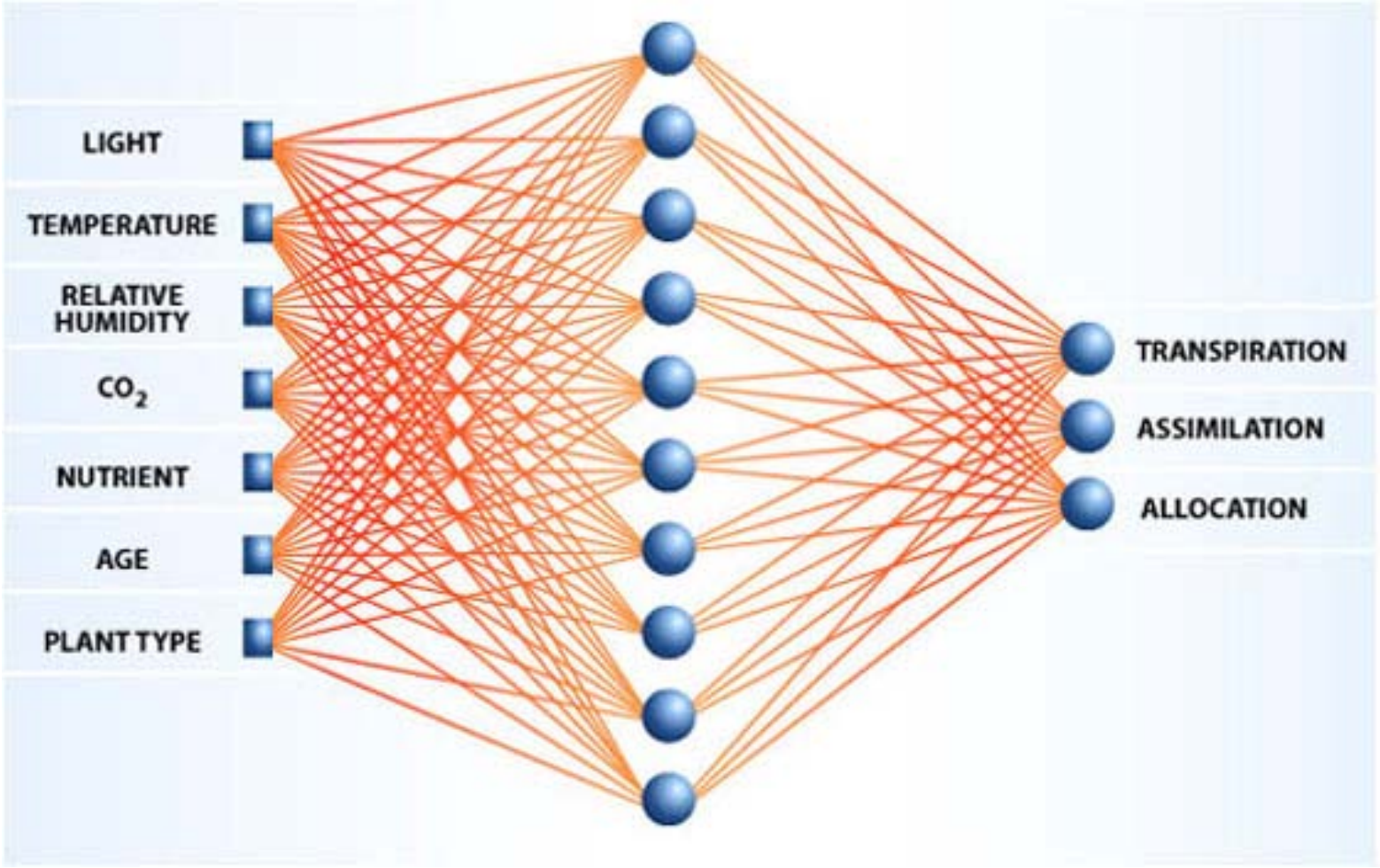
Measuring Individual Growth: Short-term Learning



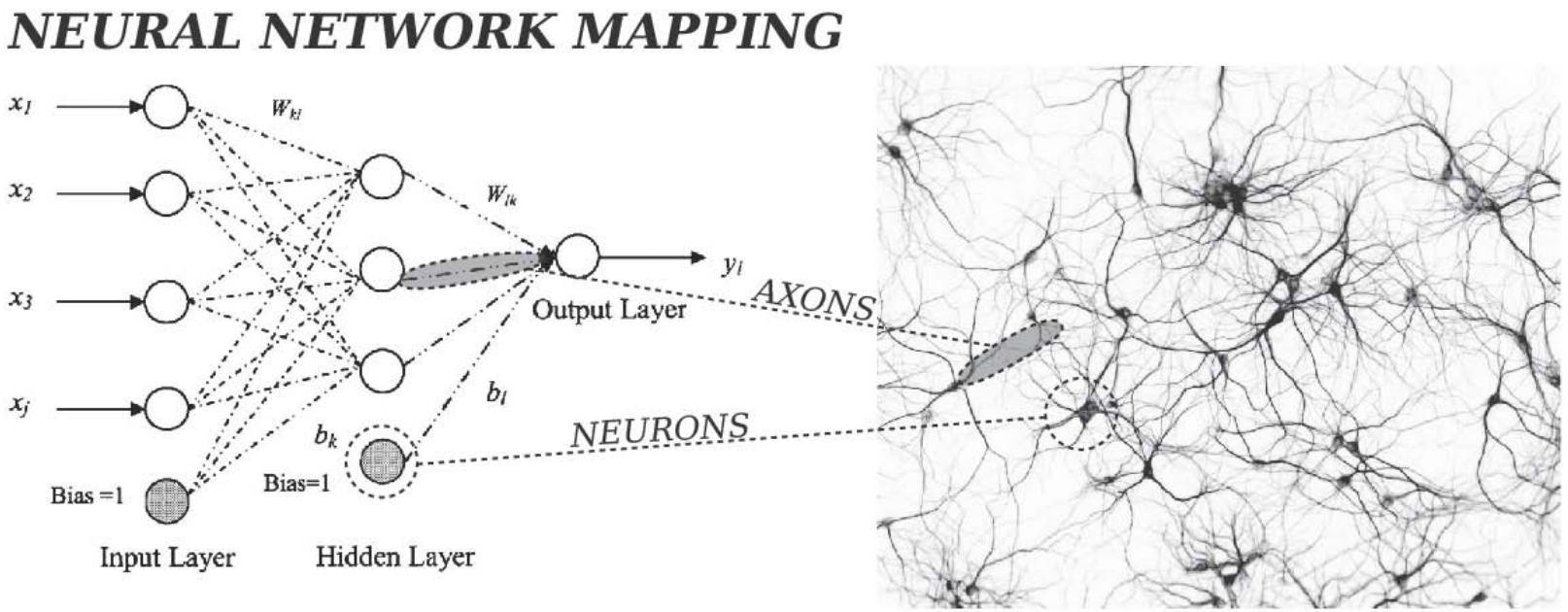
Projects, Units, Chapters: Short-term Learning

Learning measured within a single project, but rarely over multiple projects and multiple years

Measuring Individual Growth: Long-term, Deep Learning

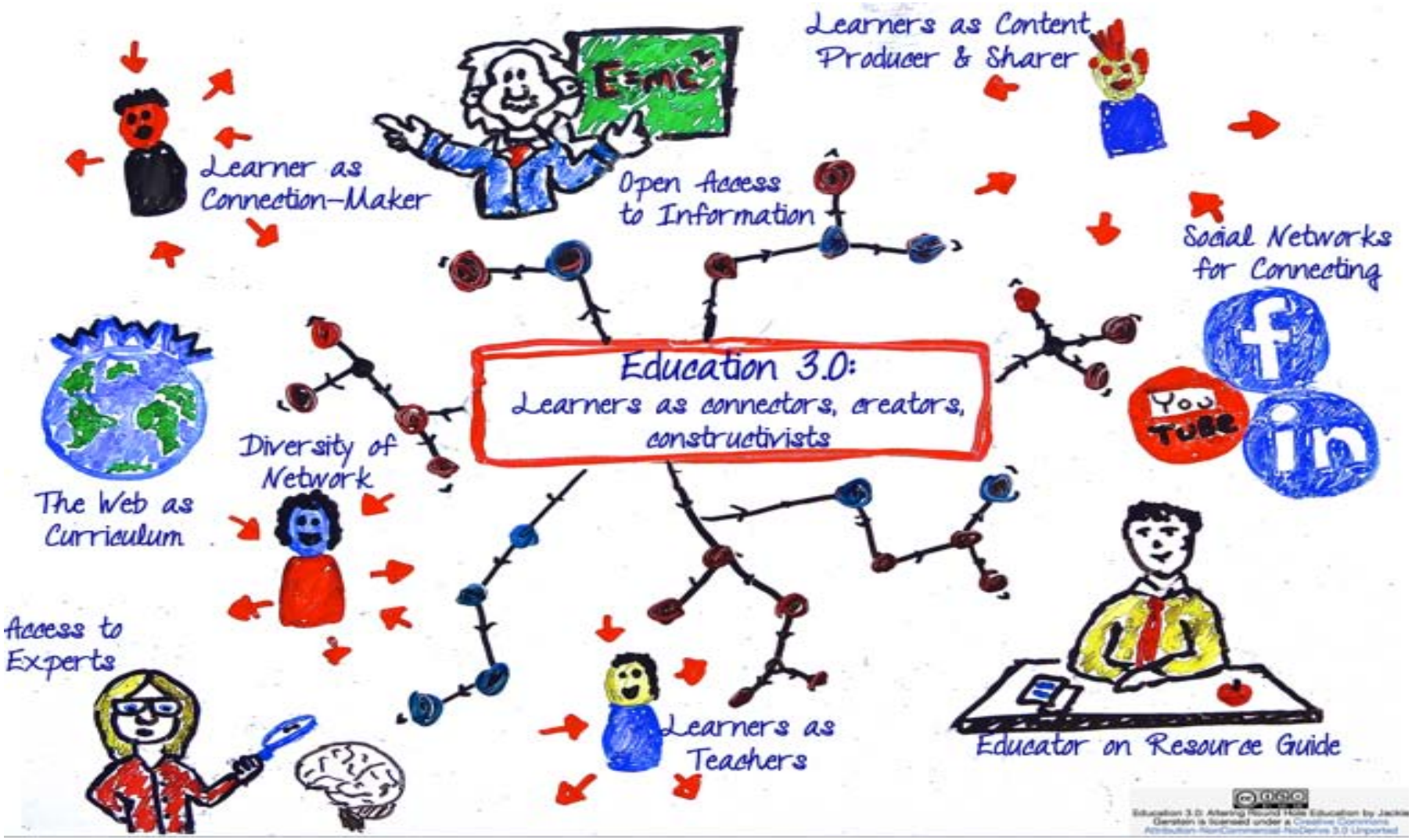


Measuring Individual Growth: Long-term, Deep Learning



Shift from a series of "stuffed closed packages" to multi-faceted assessments over time

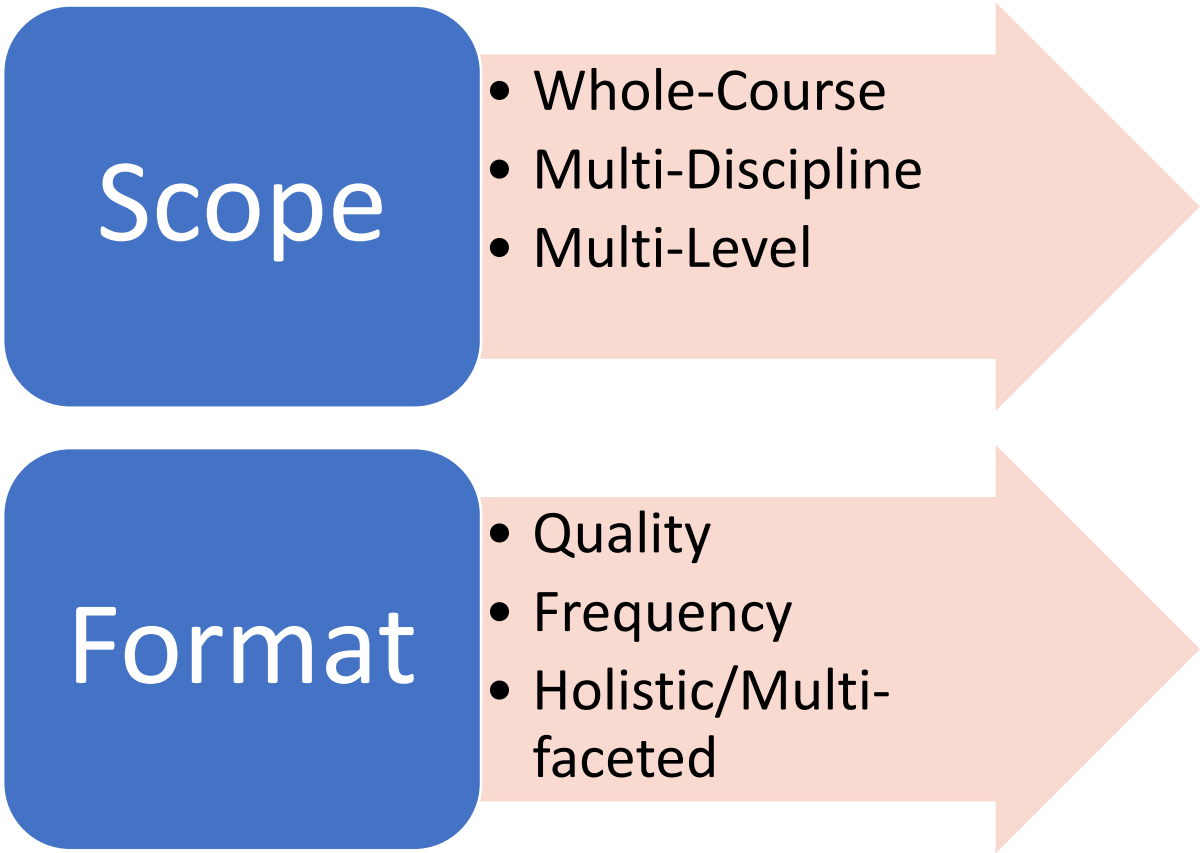
Learning Experiences Are Evolving



Shift Toward Measuring Complex Performance & Net Growth

Moving From…	Moving Towards…
Knowledge & Recall	Application of Big Concepts
One-and-done	Continuous Assessment
Multiple Choice	Performance Tasks
Teacher as Sole Assessor	Self-, Peer, Machine Assessment
The “Black Box”	Tasks and Metrics Known to Learners
Only academic content & skills	Add soft skills: Communication, Collaboration, Social-Emotional Competency

Shift Toward Measuring Complex Performance & Net Growth



Measuring Learning

How will you measure the impact

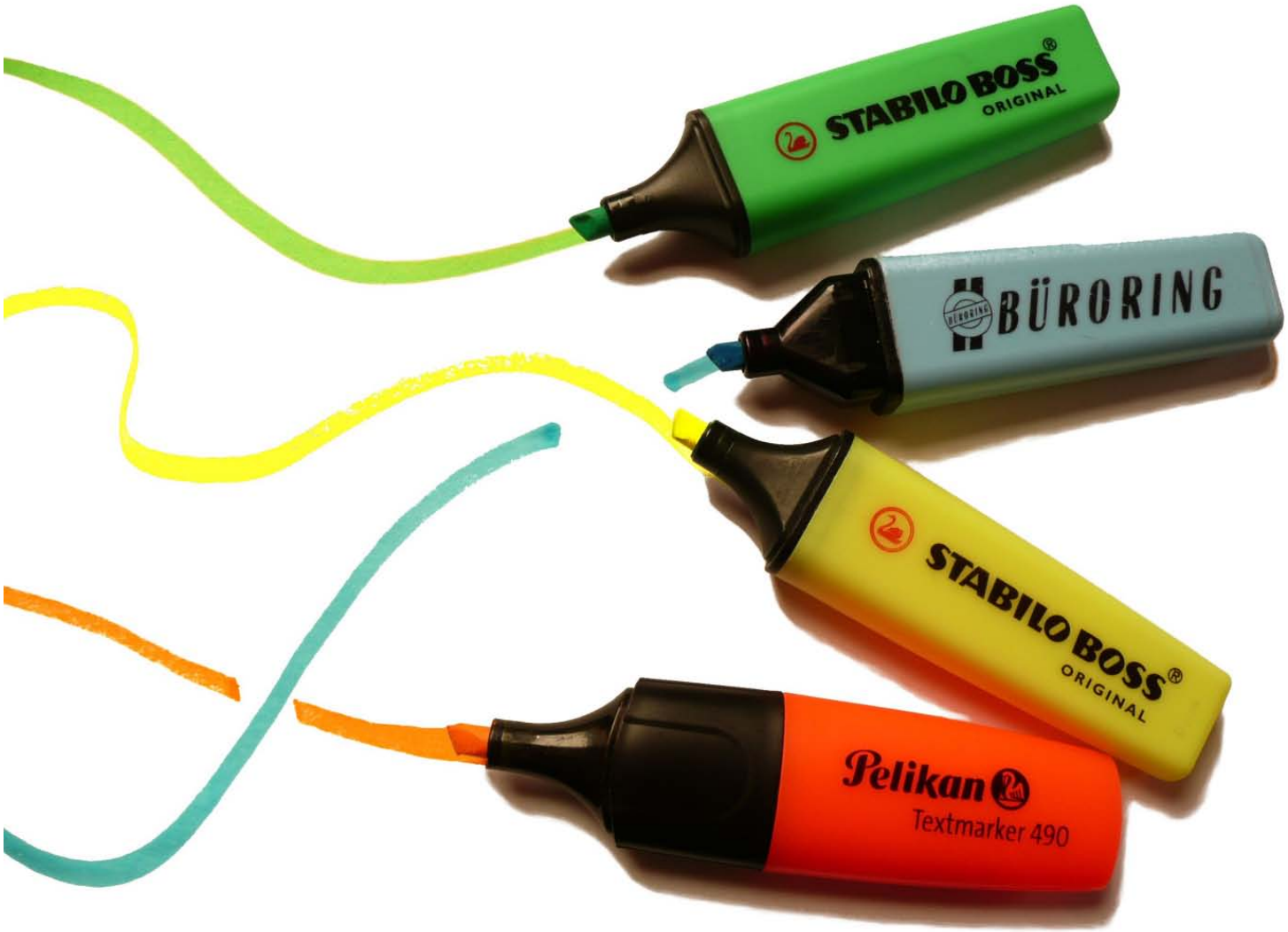
of

your architectural designs

on

student learning?

Using Research to Inform Design for Student Outcomes



Empirical Research Indicates that Teacher Collaboration Improves Student Achievement

What does scholarly research tells us about teacher collaboration?

- **Leana and Pil,** (2009), *Applying organizational research to public school reform: The effects of teacher human and social capital on student performance*
- **Goddard, Goddard, Tschannen-Maran,** (2007), *A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools*
- **Carrano,** (2013) *New Dorp High School: A case study in school improvement through inquiry*

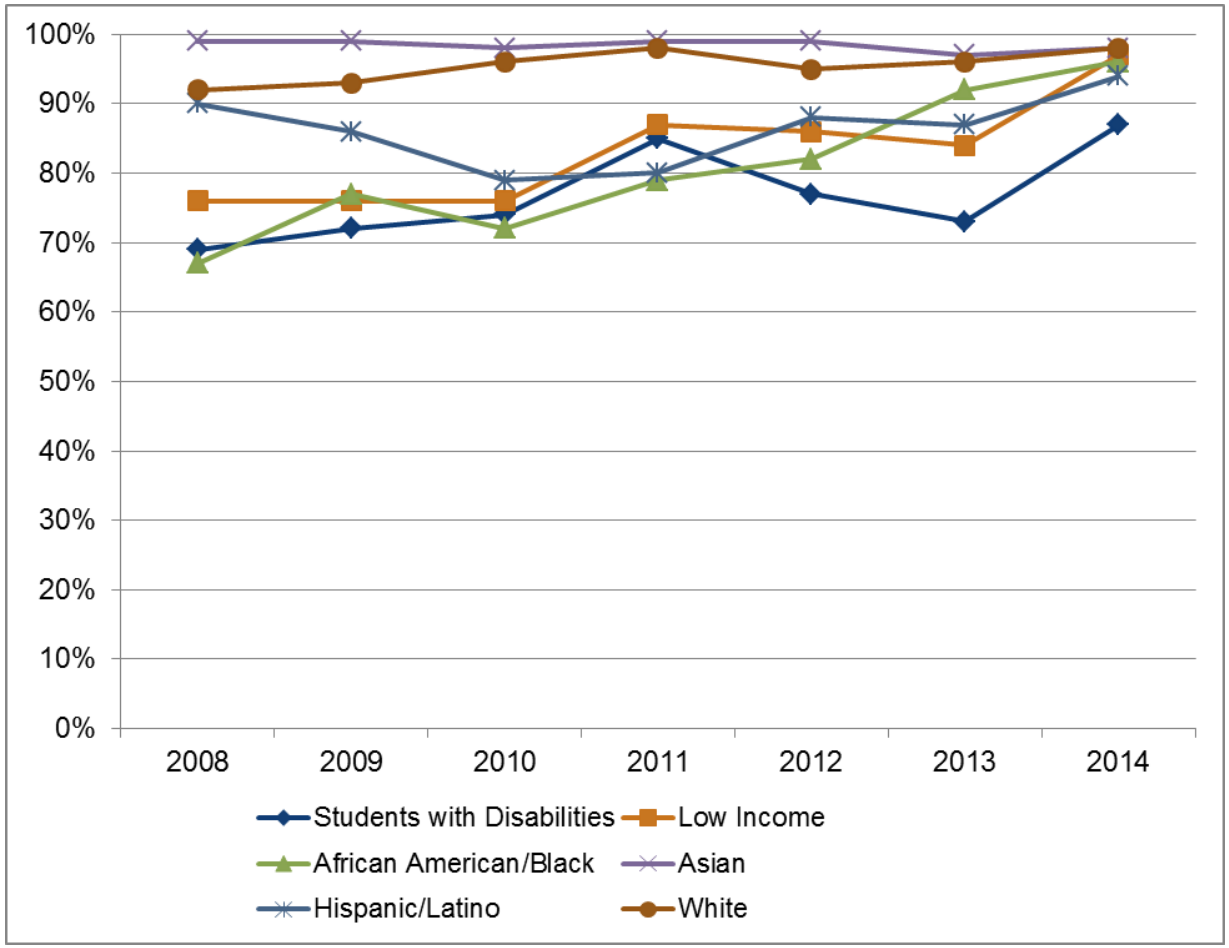
Case Study : Lexington Public Schools

“I can do my work in my classroom, and I can do it alone, and I don’t need to collaborate.”

- **Assistant Superintendent describing pervasive sentiment in Lexington Public Schools in 2005-2006 (Clymer and Coggshall)**

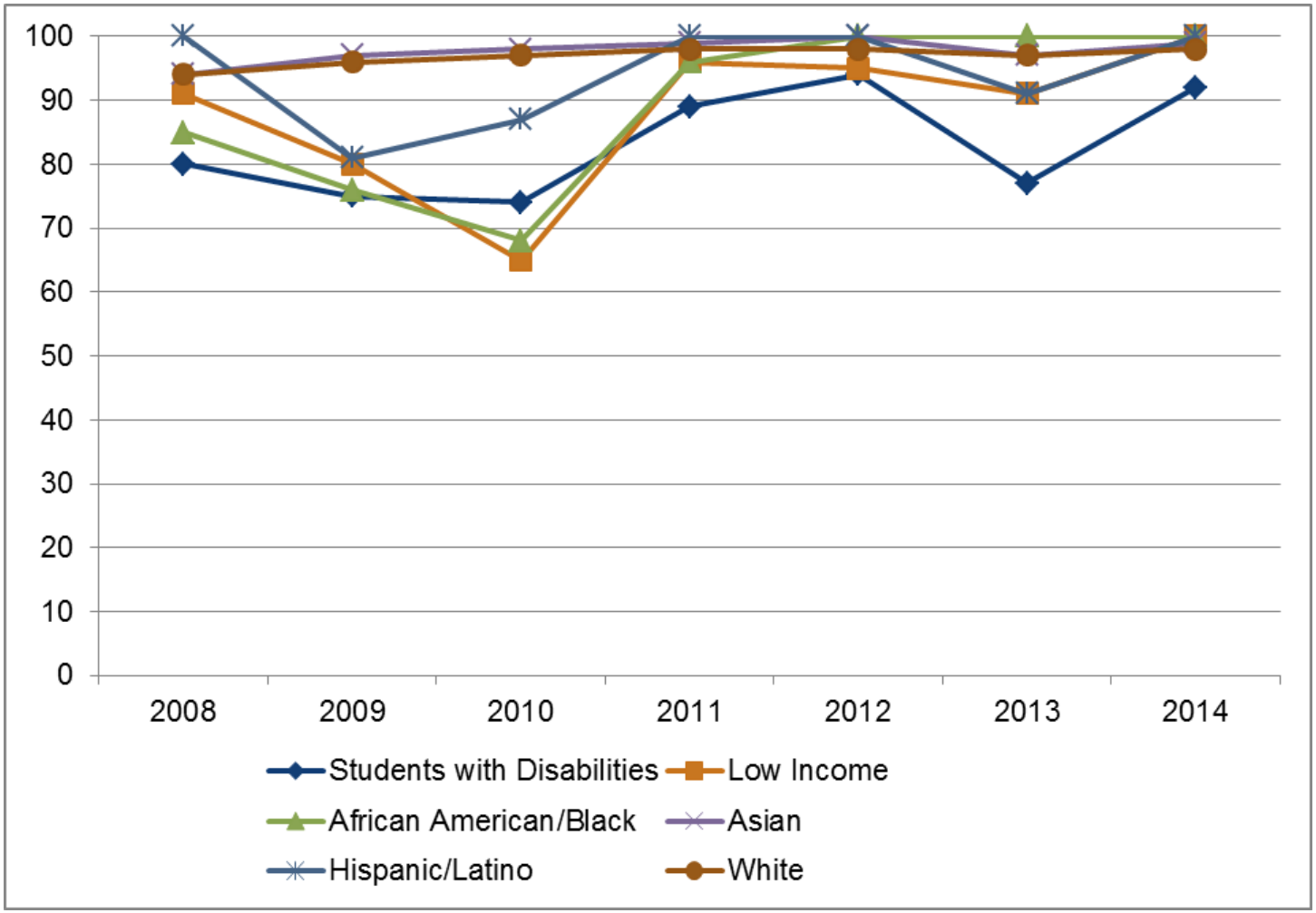
- **La Mura** (2008) *The Achievement Gap in the Lexington Public Schools: Documentation, Research, and Recommendations*
- **Clymer and Coggshall** (2014) *Enhancing Professional Development in Lexington Public Schools :Continuous Learning for Every Educator, Every Day* AIR, Mass DOE

Case Study : Lexington Public Schools



Trends in Grade 10 Mathematics MCAS Scores for Student Subgroup Populations in LPS, Clymer & Coggshall

Case Study : Lexington Public Schools



Trends in Grade 10 English Language Arts MCAS Scores for Student Subgroup Populations in LPS, Clymer and Coggshall

Teachers Design for Collaboration

"According to district leaders, educators' ***attitudes toward collaboration and mutual responsibility began to shift*** *when they gained a better understanding of the data they could access, and what those* ***data could reveal about teaching and learning*** *in their classroom and districtwide."*

Clark Middle Schools, Lexington, MA
photo credit / Dinisco Design Partnership

Clymer and Coggshall, *AIR* May 2015

Empirical Research Indicates that Teacher Collaboration Improves Student Achievement

Using Research to Inform Design for Student Outcomes

Designing for Teacher Collaboration

- Teachers leave classrooms when not teaching class opening up possibilities for increased real estate efficiencies and utilization in upper grades
- Teacher workspace moves to shared workrooms
- Every nooks and cranny is an opportunity for collaboration

Designing for Teacher Collaboration

The Shared Teacher Workroom

- Warm and welcoming colors and materials
- Daylighting
- Variety of flexible seating groupings (tables and chairs, soft seating clusters, a single stations for non-collaborative tasks, moveable)
- Pantry (FEED ME)
- Lockers – a place for each teacher to secure personal belongings as well as valuable class materials

Designing for Teacher Collaboration

The Shared Teacher Workroom

- Static and moveable whiteboard/pin-up/projection for reviewing student data and pinning up student work at every seating cluster
- Networked and Wireless Printers and Copiers
- Shared Supply Storage
- Wireless
- Warm, flexible lighting and ability to control by zone

Designing for Teacher Collaboration

The Shared Teacher Workroom

- Proximity/adjacency to the best staff bathrooms in the building
- At least one enclosed (glass to maintain visual transparency) conference space to accomodate livelier planning sessions and meeting
- Organized in zones around tasks that are noisy or quieter

Designing for Teacher Collaboration

Spaces That Support Best Practices:

Mainstream to STEAM Classrooms

Catherine Saldutti
President, EduChange, Inc.

Catherine Saldutti

President, EduChange, Inc.

Twitter: @csaldutti

Catherine@educhange.com

- Former Teacher & Curriculum Director
- Social Entrepreneur
- International Keynote Speaker
- Lead Designer: Node-Based Curriculum Designs & C^3 Assessment System

www.educhange.com

17 Years of Successful Collaboration

- 350+ schools in NYC
- USA: Expeditionary Learning Schools Network of 100+ schools
- Fairfax County & Richmond (VA)
- Perris, Orinda & San Bernardino (CA)
- El Paso, Ysleta, Wills Point, Canton (TX)
- Commonwealth of the Bahamas

What Works for Learning

Assumption: Certain teaching practices work better than others to support learning, across diverse student populations.

Reality: It is very difficult to generalize best practices.

How do educators determine what practices work best?

Research: *Visible Learning*

NZ/AU Research Teams, led by Dr. John Hattie

Based on 1200 Meta-analyses of 138 "influences" that have a positive or negative effect on learning

http://visible-learning.org/

Research: *Visible Learning*

Quantitative Data

Uses a particular statistical analysis called "effect size" and correlates "what works" to standardized tests

There are limitations to this work, but the increasing amount of data analysis lends credibility

Research: *Iterative Best Evidence Synthesis*

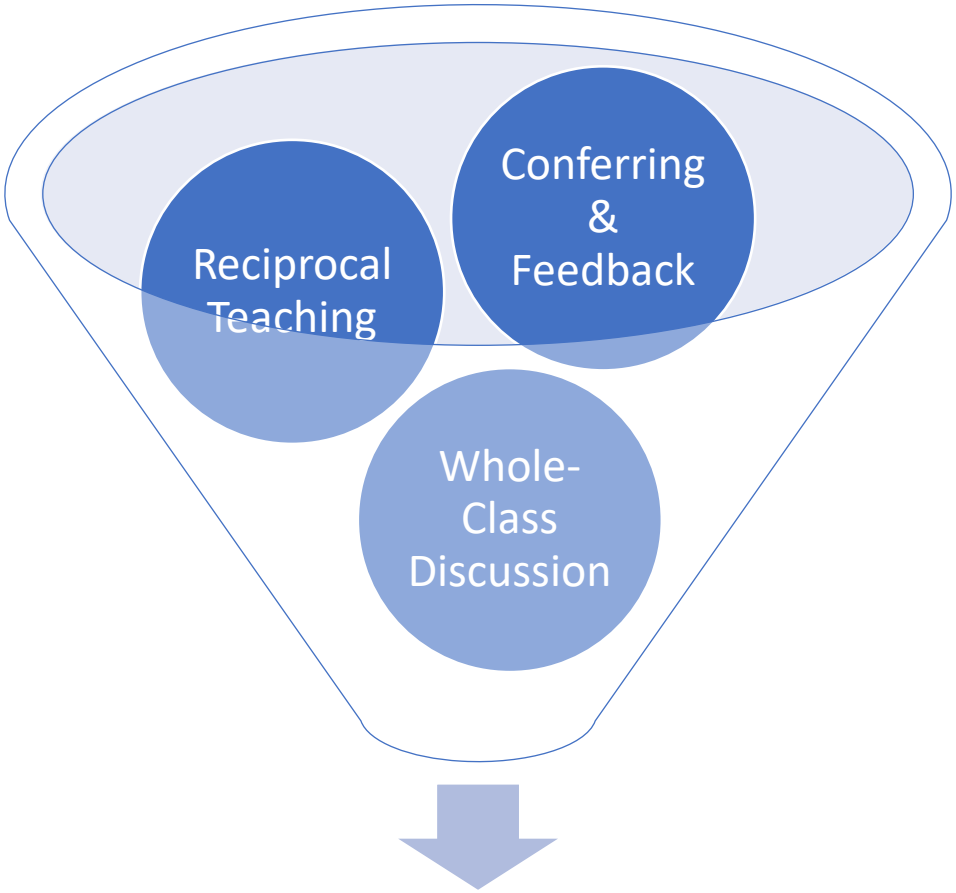
Quantitative Data

NZ Government & International Bureau of Education: An Alternative to Meta-Analyses

Teams of Researchers Travel the World in Search of "What Works" in Certain Areas (pre-K, Math, etc.)

http://www.educationcounts.govt.nz/topics/bes

Select Best Practices from International Research



Grouping Structures

Grouping Structures: Implications for Physical Space

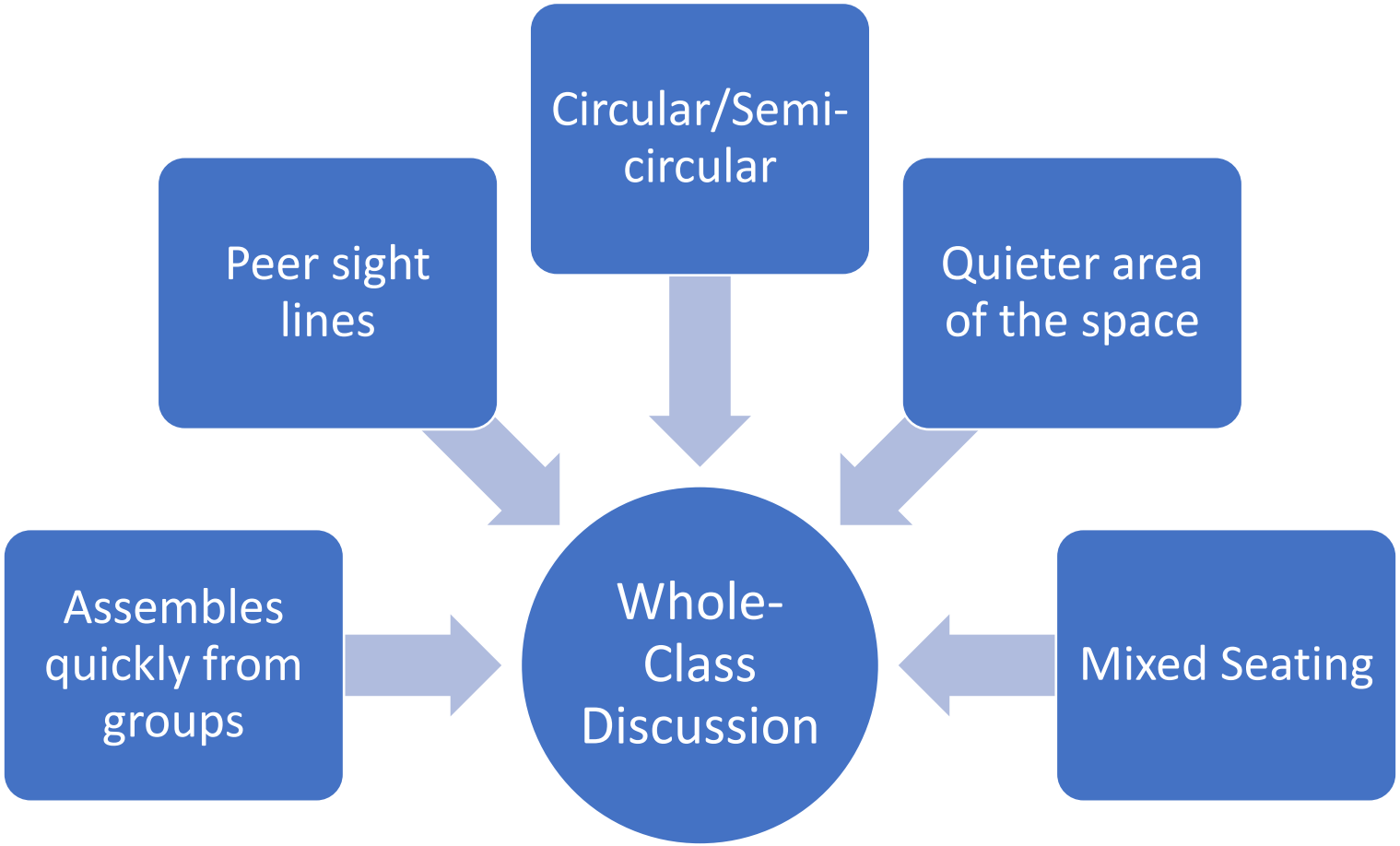
Furniture	Semi-privacy	Storage
• Students can move it easily • 2, 3, 4, 6, 8 students • Enough seating to accommodate! • Stand, crouch, lean, sit, sprawl	• Teacher sight lines • Acoustics • Access to writing space (walls, boards) • Access to plugs • Adjustable lighting in different areas	• Minimal/None attached to seating • Horizontal better than vertical (carts) • Central & Individual • Actually fits stuff kids bring to class!

Grouping Structures: Implications for Physical Space

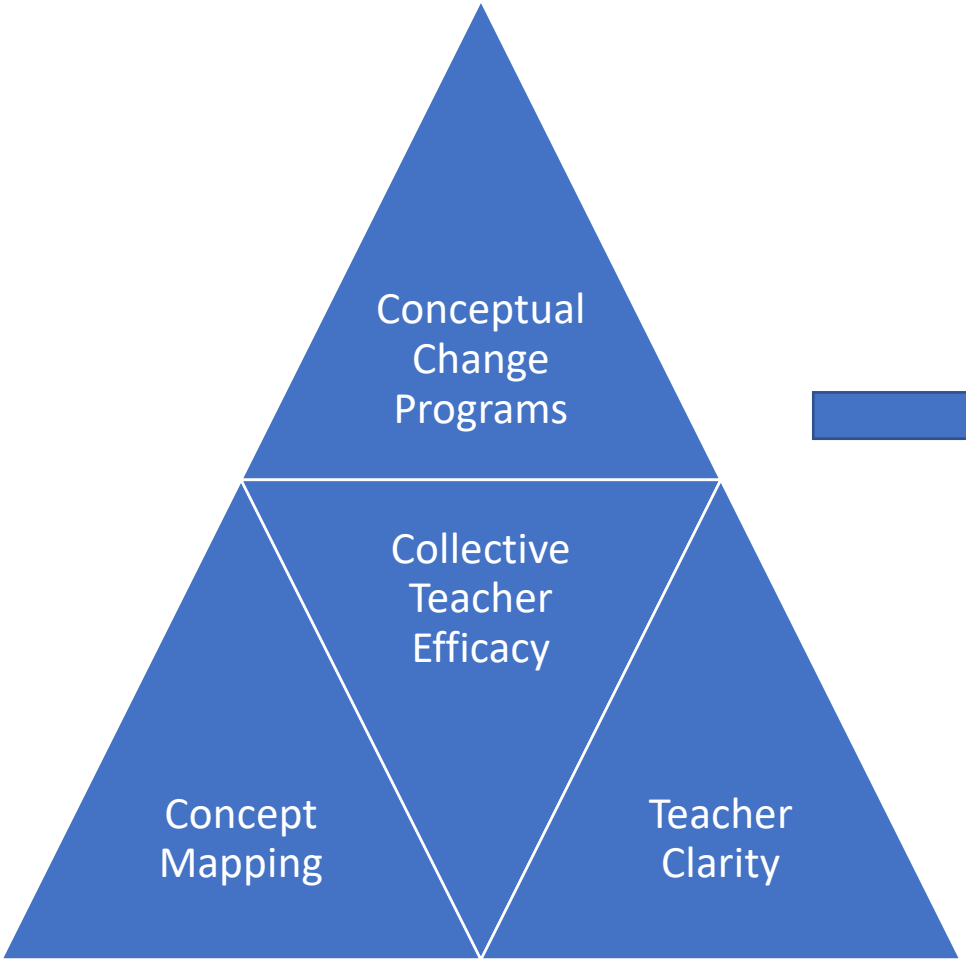
Grouping Structures: Implications for Physical Space

Thoughts?

Grouping Structures: Implications for Physical Space



Select Best Practices from International Research



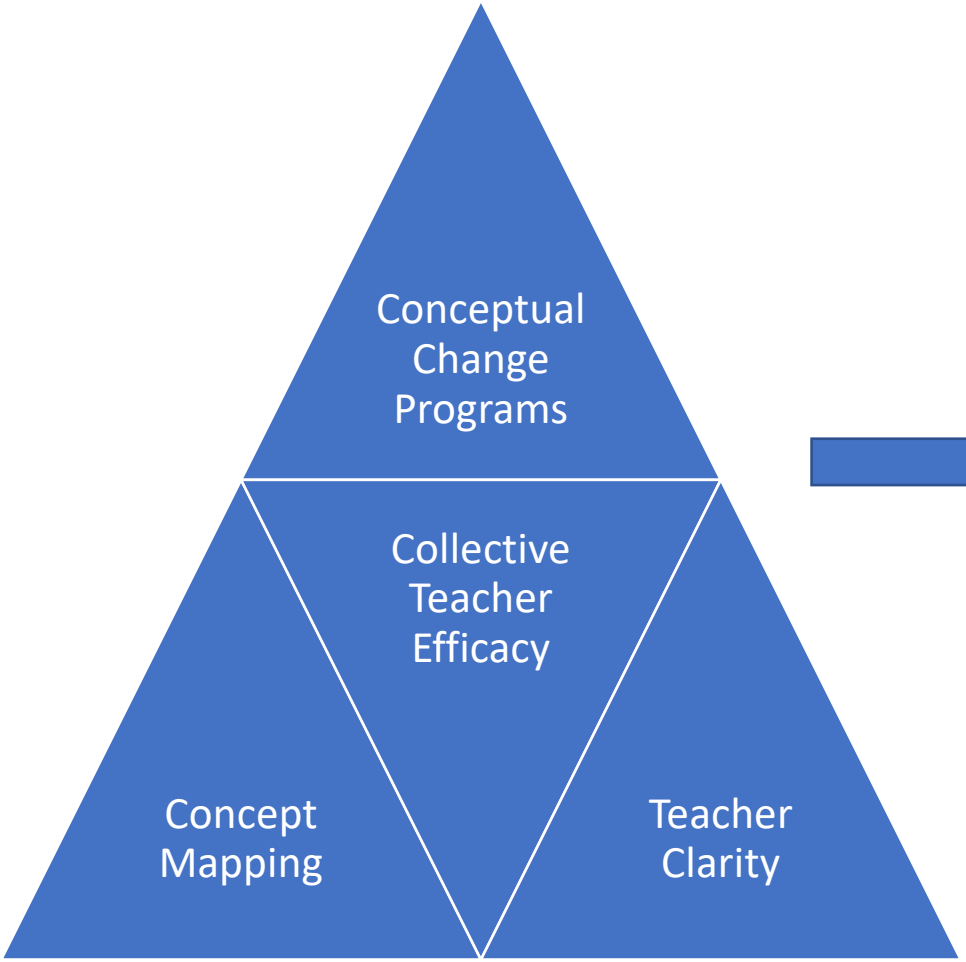
Walls As Learning Technology

When Walls Are Not Useful…

…They Are Decorated

…They Are Visual Distractions

Select Best Practices from International Research

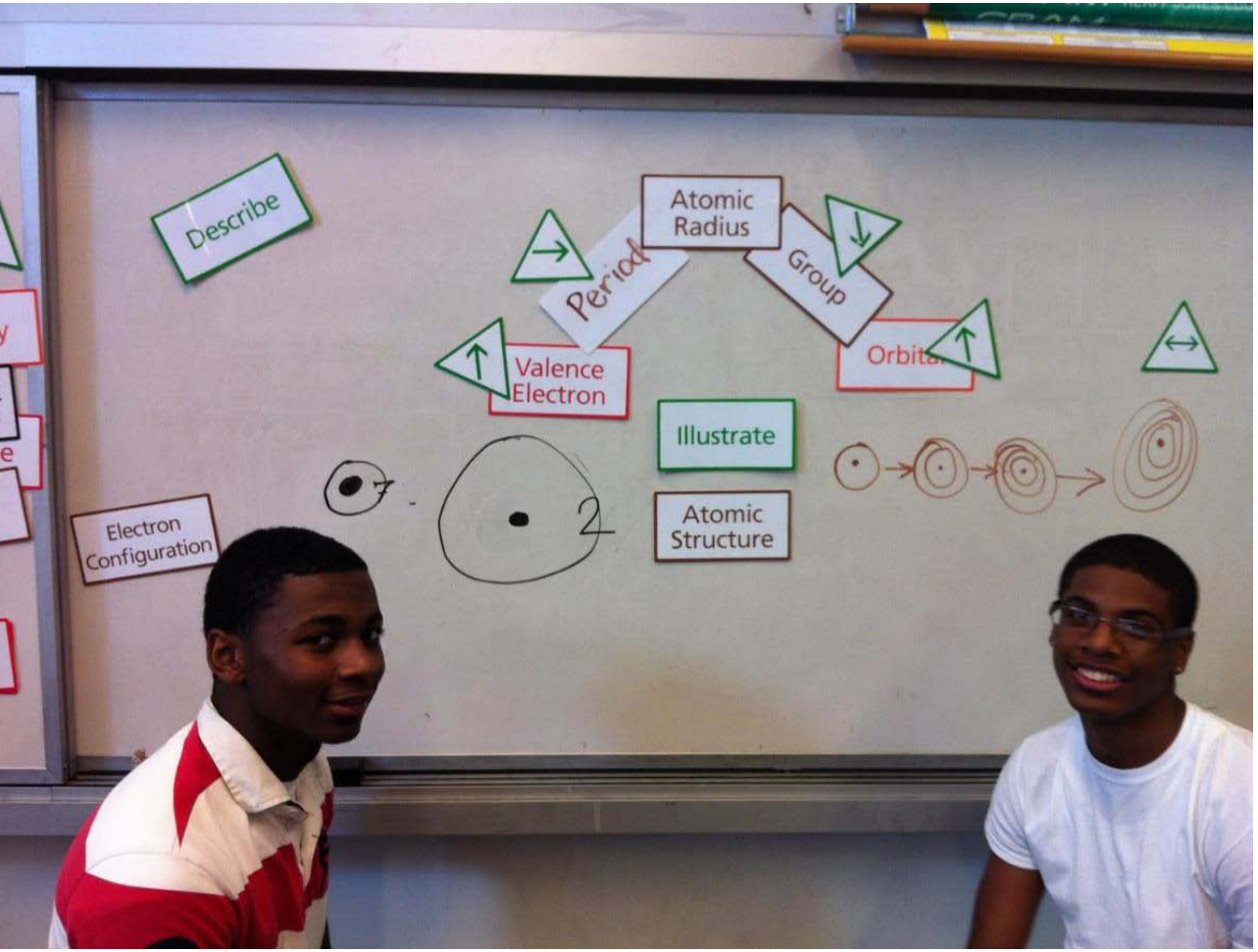


Walls As Learning Technology

Walls as Learning Technology: Concept Construxions®

- *Dynamic*
- *Kinesthetic*
- *Visual*
- *Verbal*
- *Layered*
- *Accessible*
- *Semi-permanent reference*

Make Classroom Walls Useful…Please!



- *Writing*
- *Drawing*
- *Projecting*
- *Affixing: Magnets, Pins, Hooks*

Grouping Structures: Implications for Physical Space

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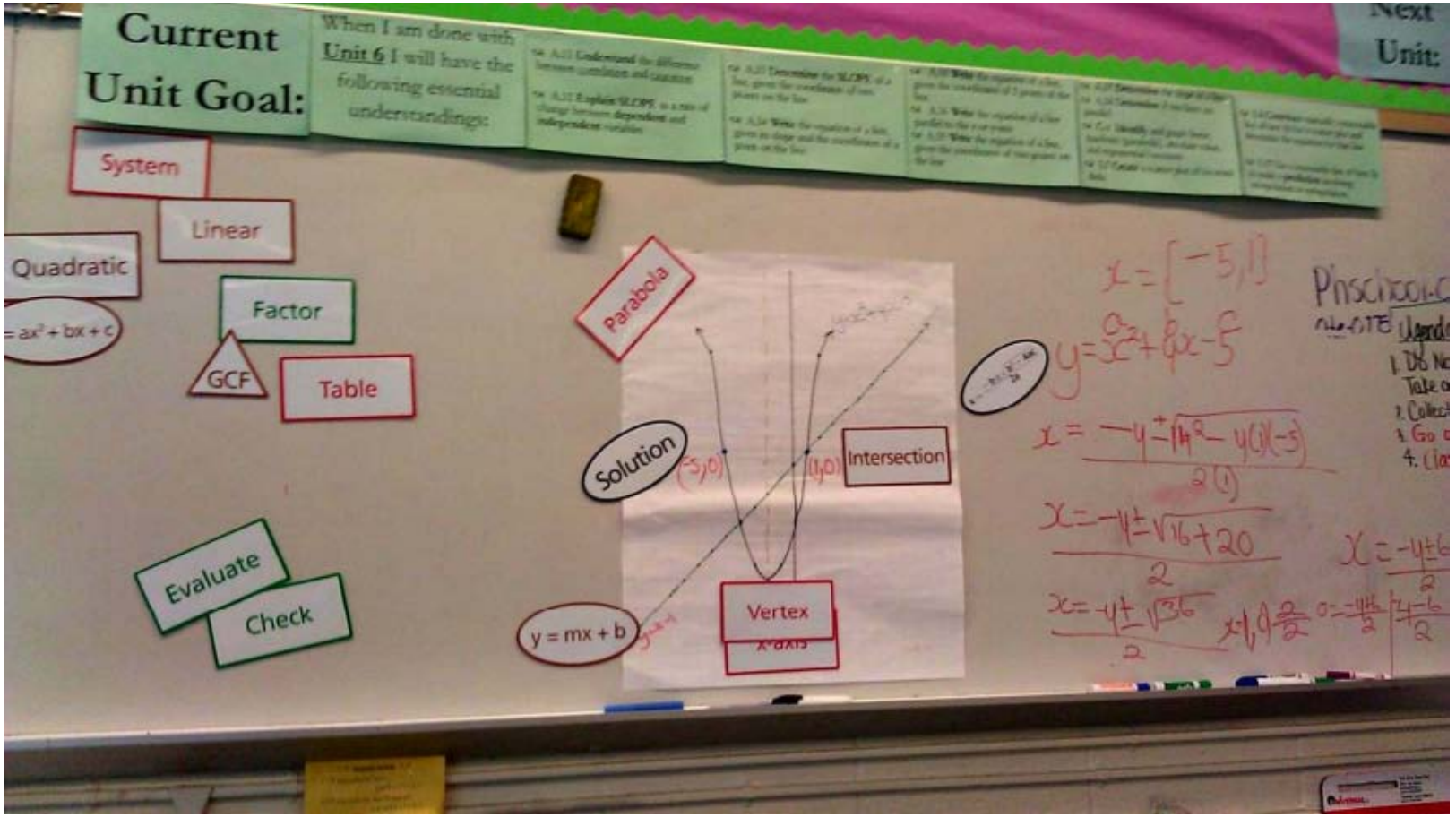
Teacher Sight Lines to Walls: Similar to Computer Labs…Remember?

Like this…but not a static configuration

Space Evolves Alongside the Learning



www.educhange.com/ccxwhat

STEAM/Maker Spaces: An Evolution

STEAM/Maker Spaces are being built for these key purposes:

- *To Change Teaching Practice*
- *To Resuscitate Play & Creativity*
- *It's the Latest Trend*

STEAM/Maker Spaces: An Evolution

"Making is a mindset, not a location."

– J.D. Ferris-Rowe, CIO

Brebeuf Jesuit Preparatory School

Indianapolis, IN

http://tinyurl.com/THEJournal317

STEAM/Maker Spaces: An Evolution

A Cautionary Tale: Equipment

- *Disappointing Tech (3D Printers Made for Schools)*
- *Safe Spaces for Later Choices (Laser Cutters)*
- *High-tech vs. Low-tech*

STEAM/Maker Spaces: An Evolution

A Cautionary Tale: Teachers

- *More and More Teachers…*
- *Teacher Learning & Construction:*
  Disjointed Pacing
- *Space = Time*
- *Curriculum Integration*

STEAM/Maker Spaces: An Evolution

Considerations

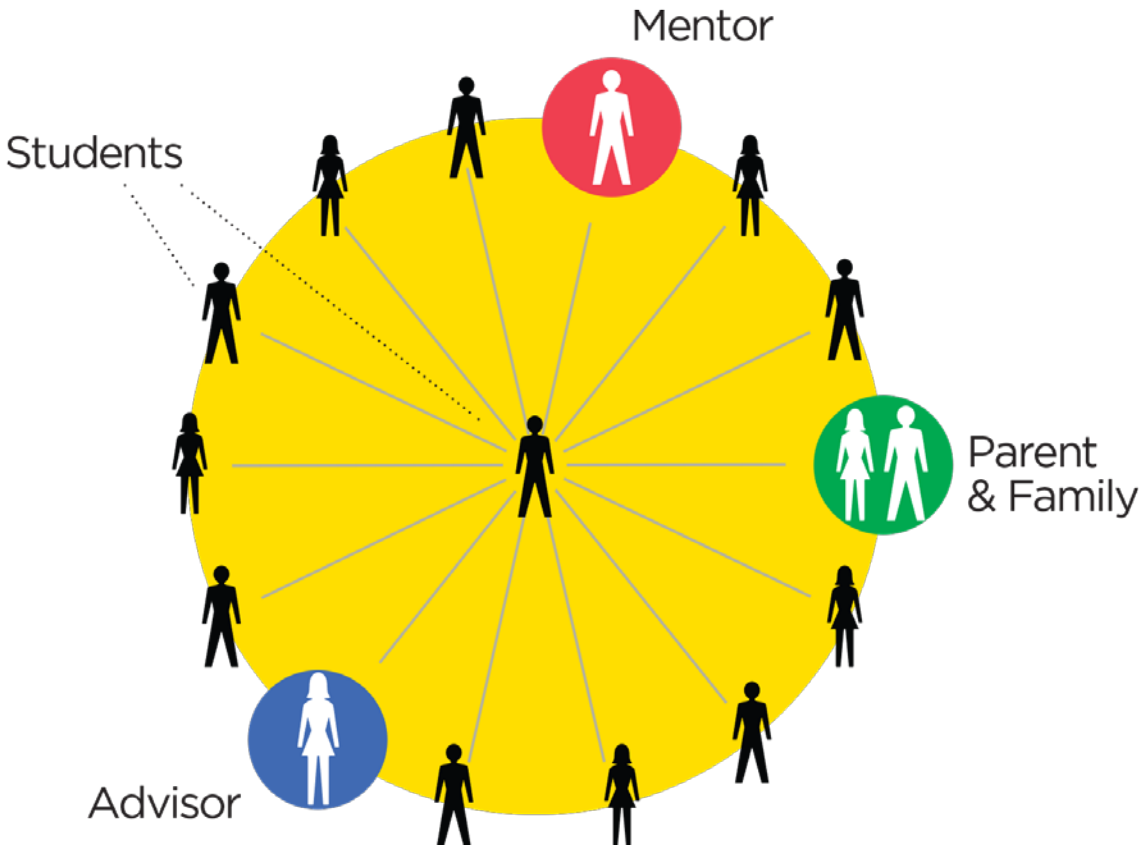
- *Design vs. Maker Spaces*
- *Flexible, Mobile(?) Storage*
- *Updating Classrooms & Existing Science, Arts & Tech Spaces*
- *Dedicated Space for Equipment Requiring Special Safety*
- *Outside Spaces*

Summary: Design for Change

Educational Research and Leadership Informs Designs

Learning Impact of Spaces Correlates to the Instructional & Assessment Practices Used in Those Spaces

Flexible is the New Chic – Learning is About Change and Needs Evolve



School

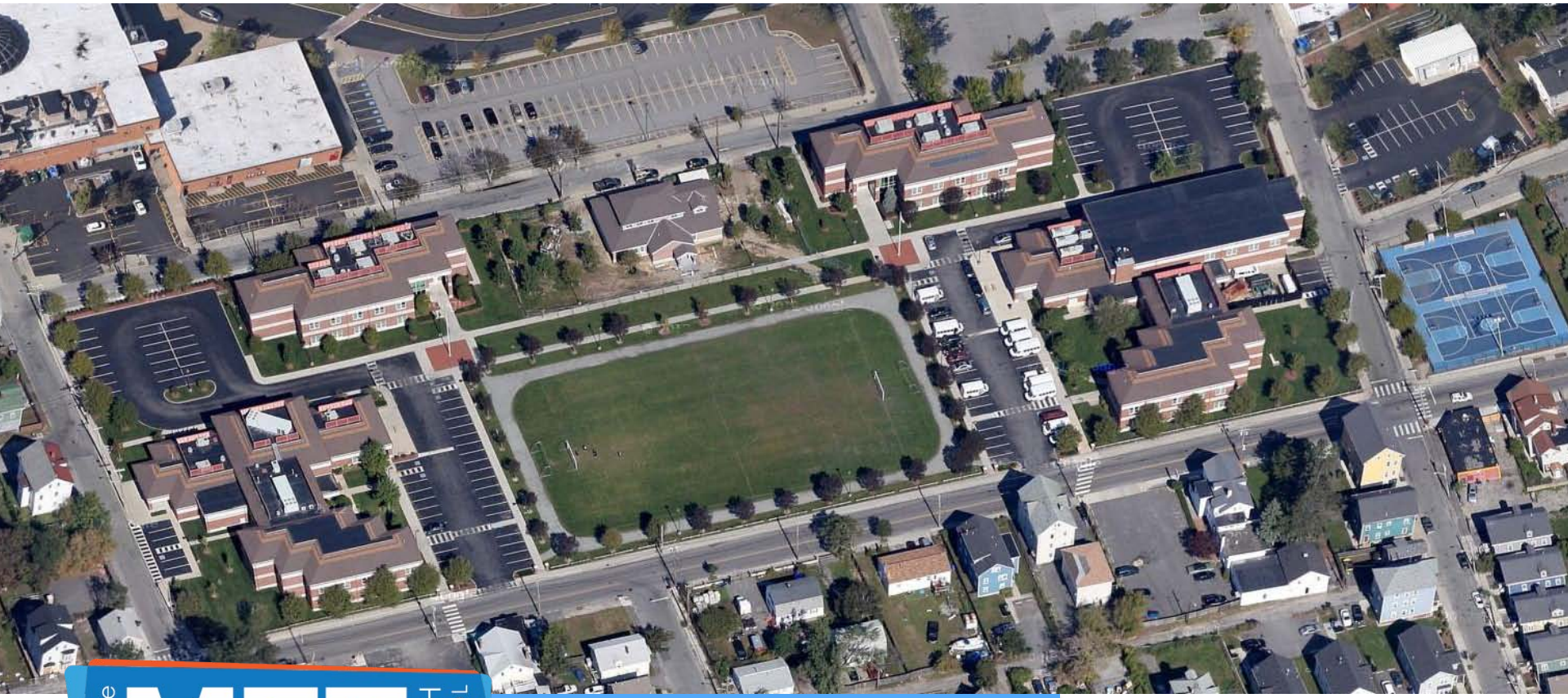
Internship Site

Home

Student Centered

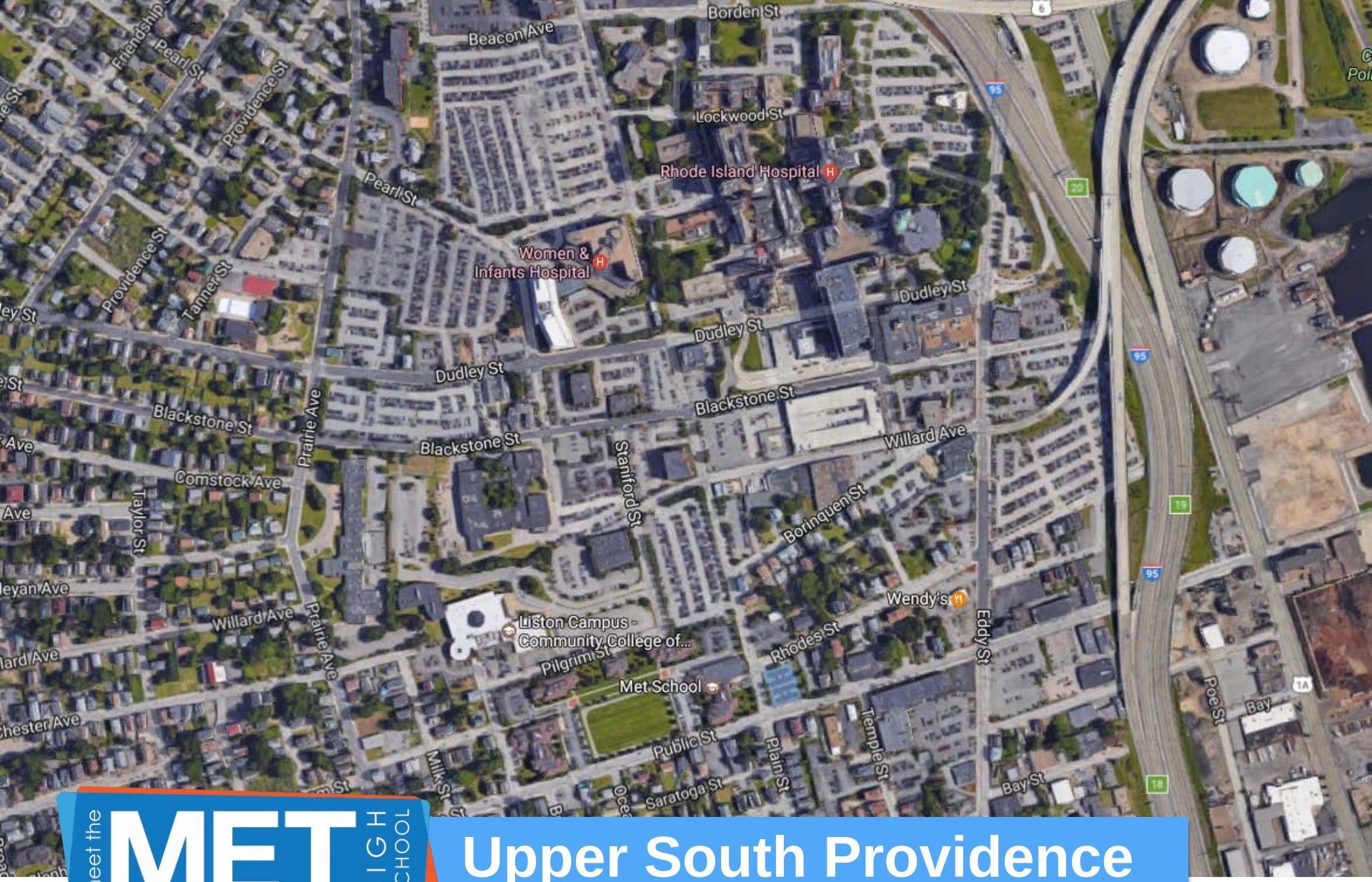
BIG PICTURE LEARNING


BIG
PICTURE
LEARNING
meet the
MET
HIGH
SCHOOL
Providence, RI



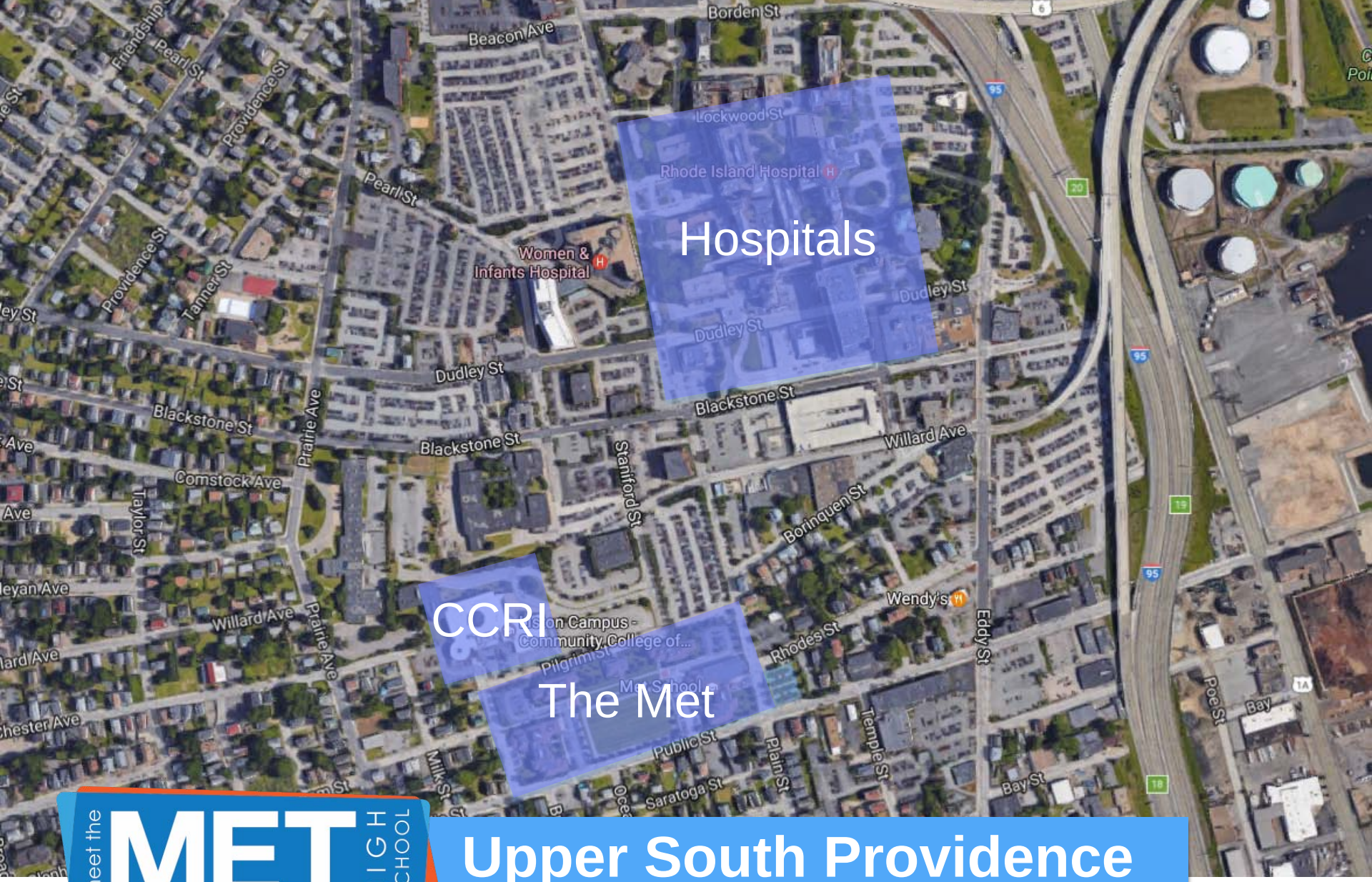
meet the MET HIGH SCHOOL

Providence, RI



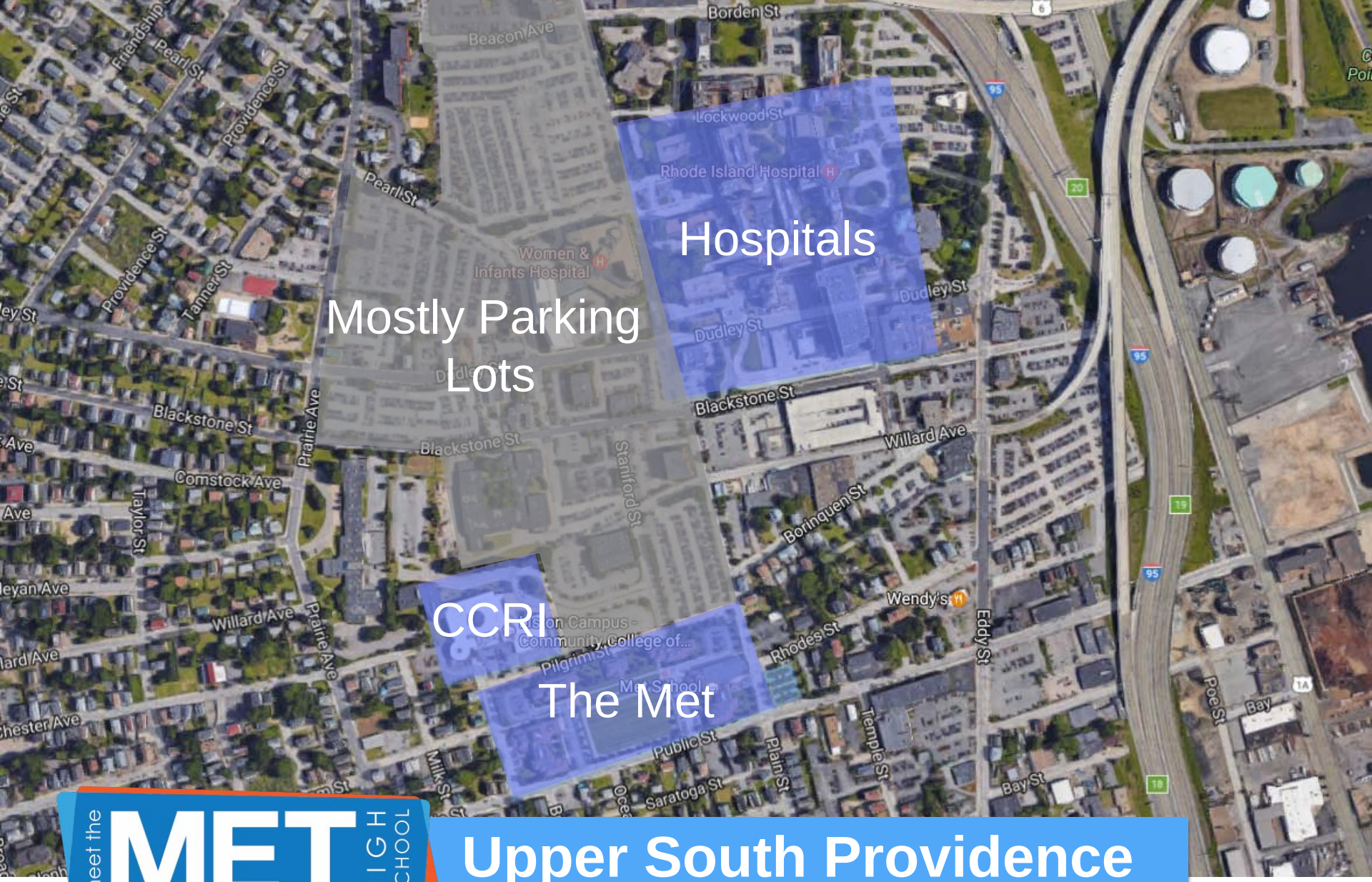
meet the MET HIGH SCHOOL

Upper South Providence



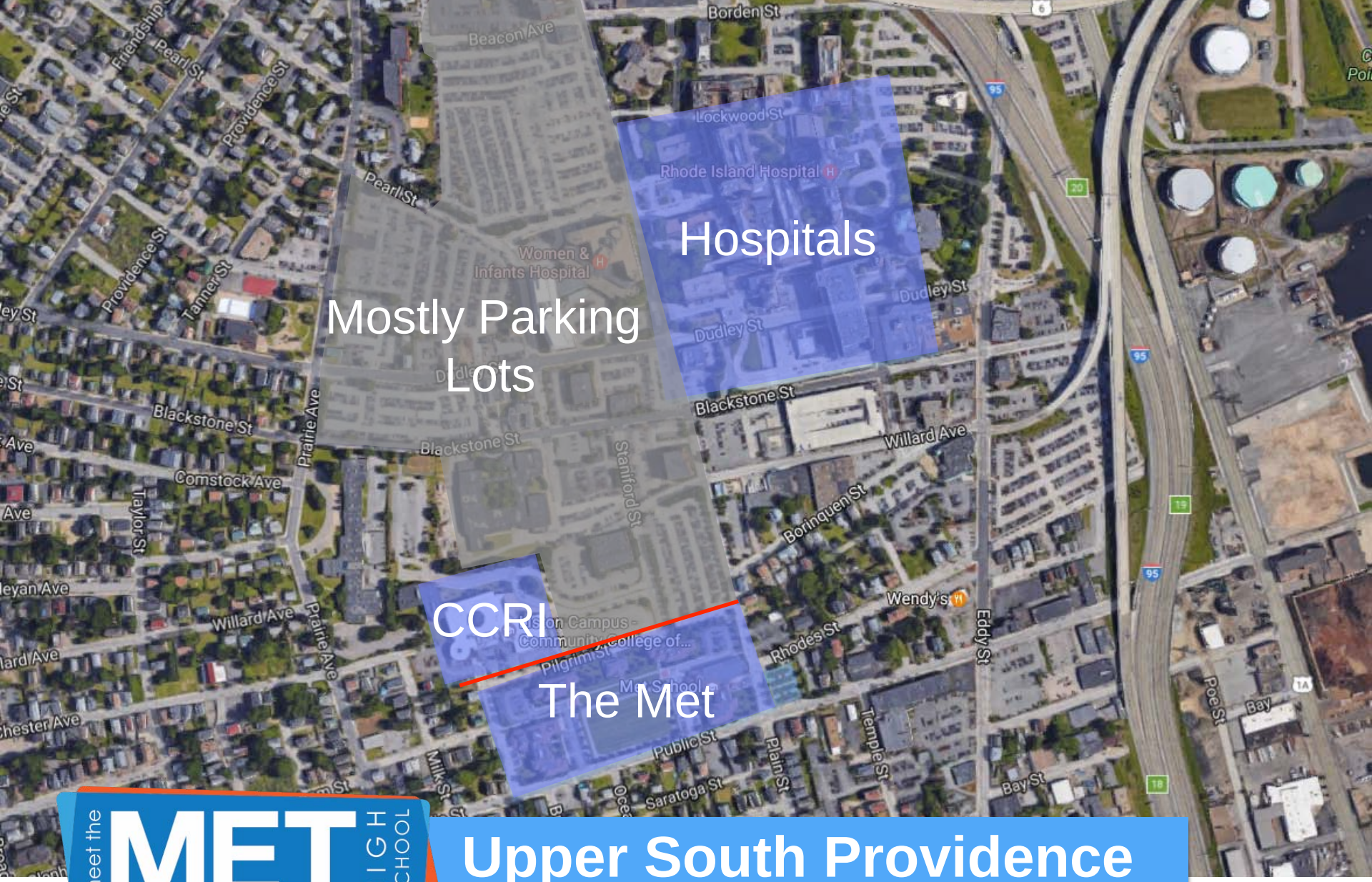
meet the MET HIGH SCHOOL

Upper South Providence



meet the MET HIGH SCHOOL

Upper South Providence



meet the MET HIGH SCHOOL

Upper South Providence

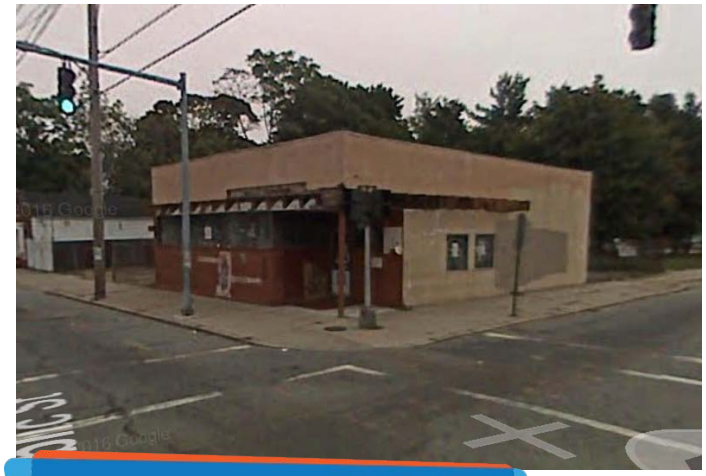
meet the MET HIGH SCHOOL

The Met Campus


THE CENTER FOR INNOVATION AND ENTREPRENEURSHIP
BIG PICTURE LEARNING
meet the MET HIGH SCHOOL
Bogman Street

2005

2017



meet the MET HIGH SCHOOL

Surrounding Community

2005

2017

meet the MET HIGH SCHOOL

Surrounding Community


Whole School
BIG
PICTURE
LEARNING

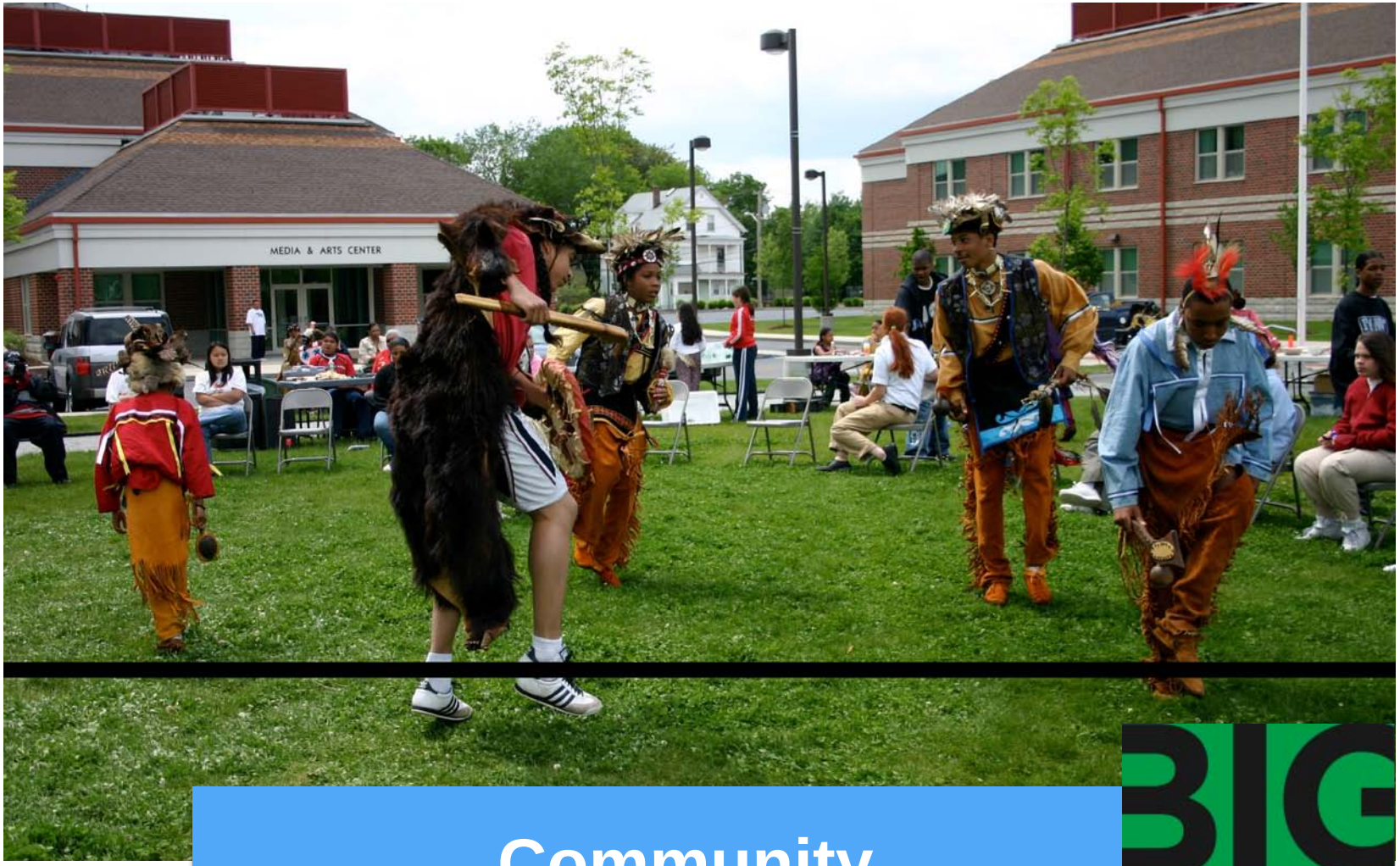

Advisory
BIG
PICTURE
LEARNING

Collaborative Space

BIG PICTURE LEARNING

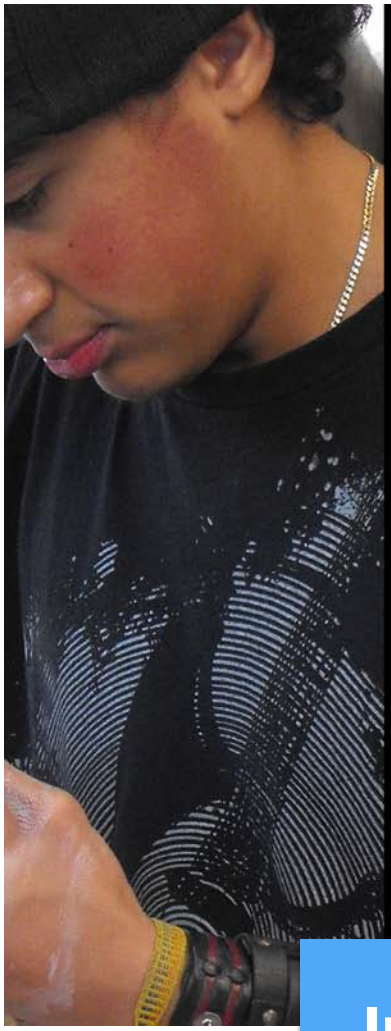
Independent Workspace

BIG PICTURE LEARNING



Community

BIG PICTURE LEARNING



Internship Learning Environments

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Resources

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Typical academic building on right

School of St. Jude – Arusha, TZ High School Campus

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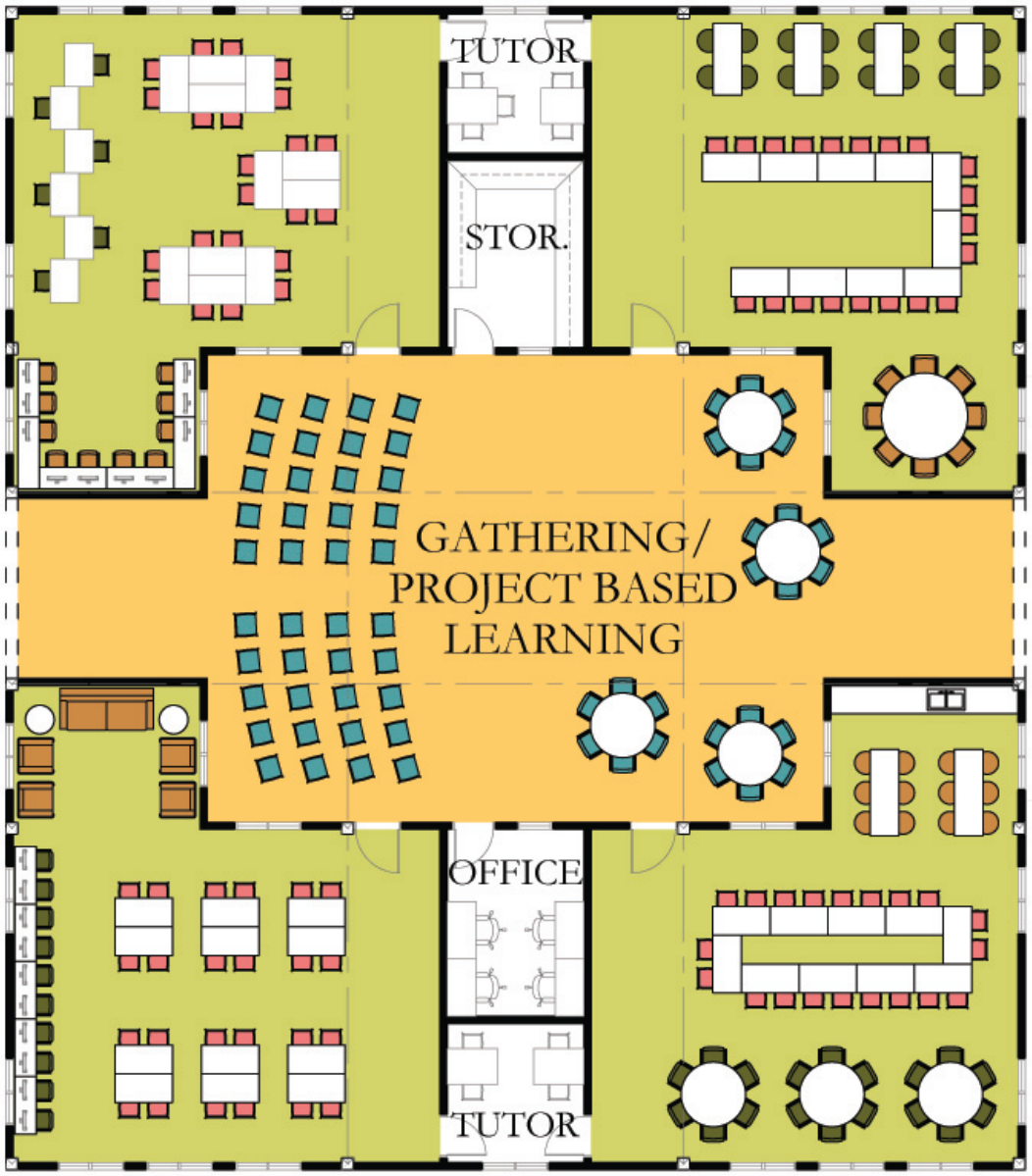

School of St. Jude – Arusha, TZ Typical academic pod

b|g|a

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Collaboration space

School of St. Jude – Arusha, TZ

b|g|a

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Typical L-shaped classroom

School of St. Jude – Arusha, TZ

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Three identical 4-story connected academic buildings on right.

Robert College - Istanbul, Turkey (Grades 8-12)

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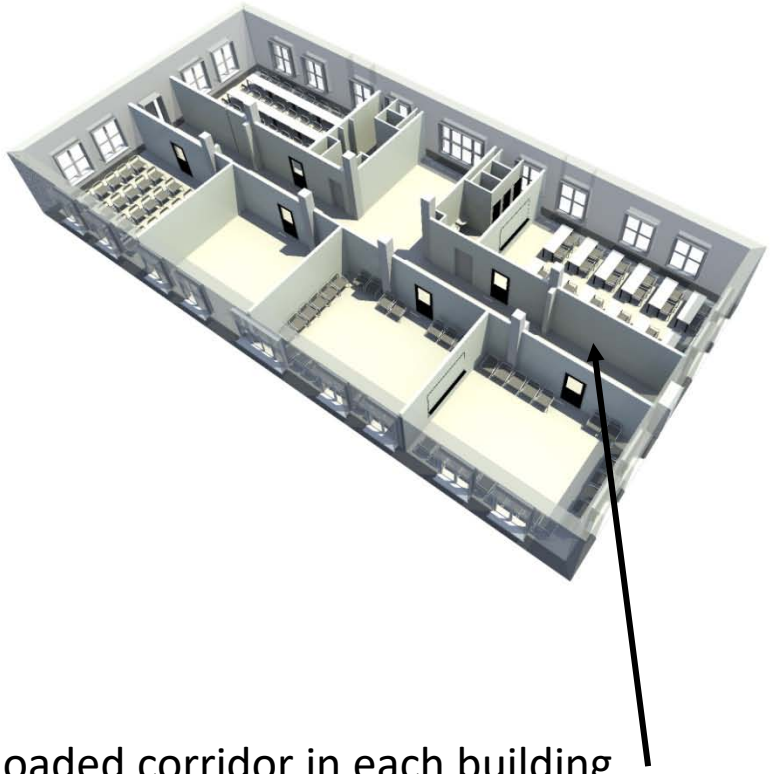

Typical double-loaded corridor in each building

Robert College – Istanbul, Turkey

b|g|a

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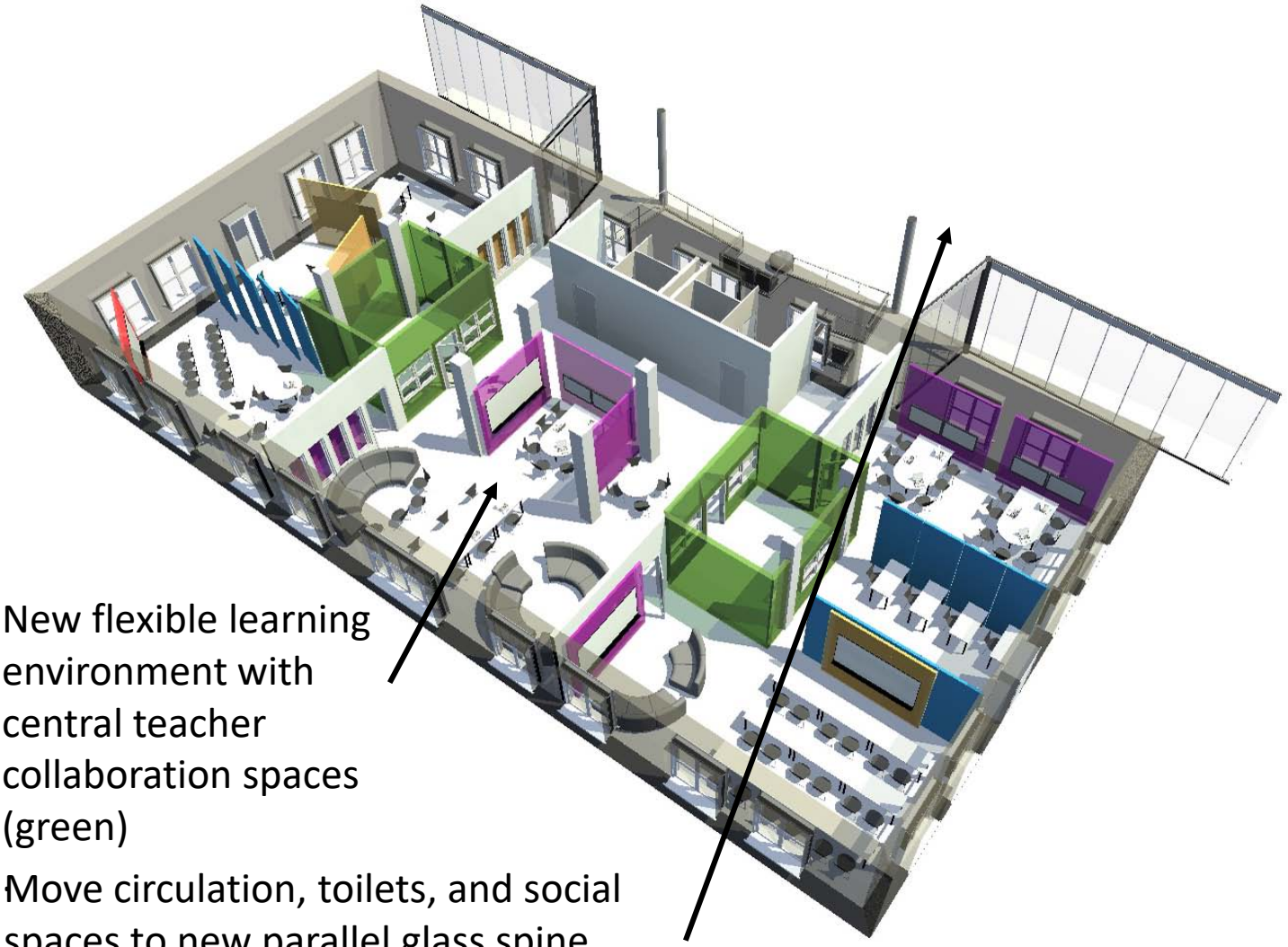

New flexible learning environment with central teacher collaboration spaces (green)

Move circulation, toilets, and social spaces to new parallel glass spine connecting all academic buildings.

Robert College – Istanbul, Turkey (Grades 8-12)

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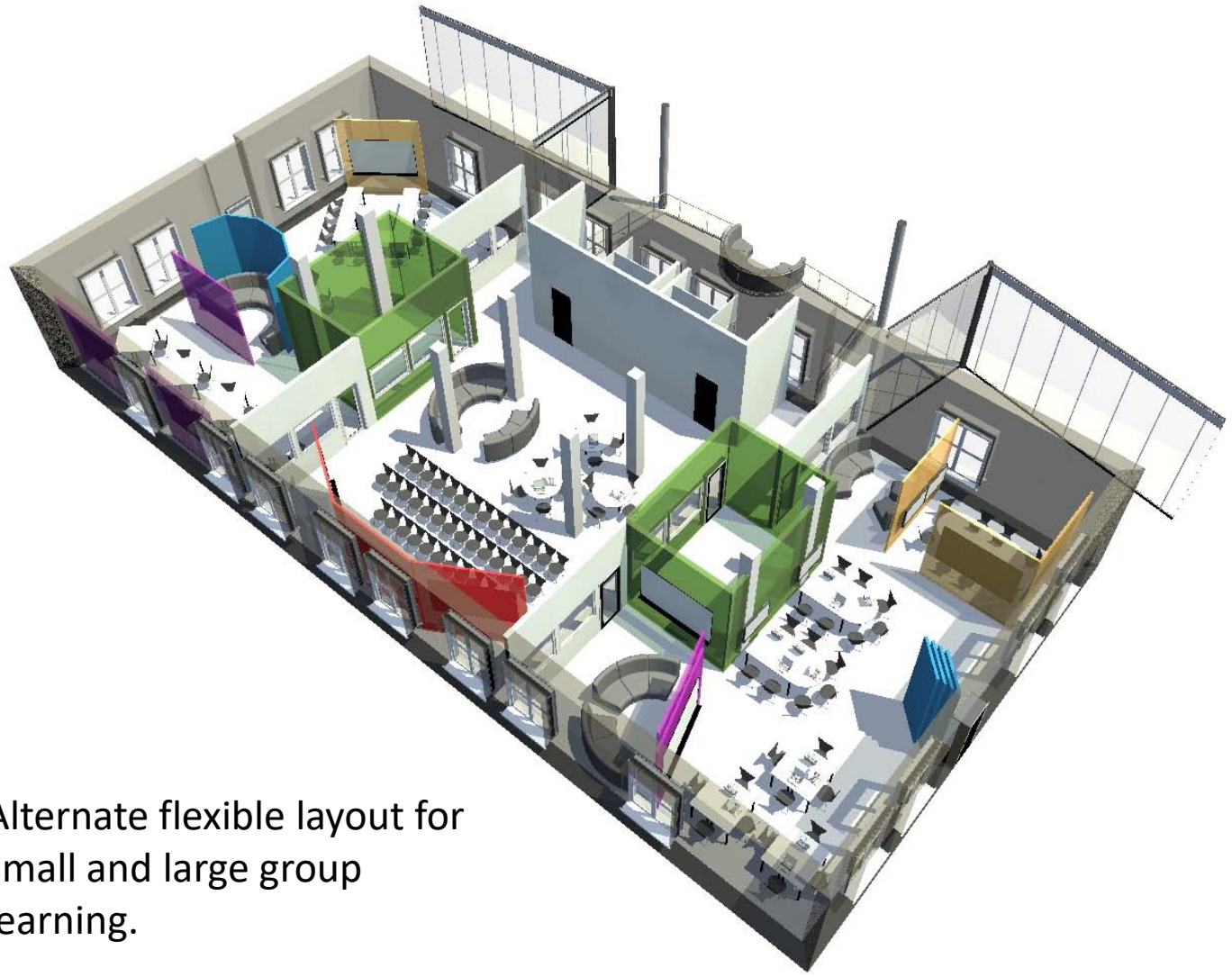
A4LE



Alternate flexible layout for small and large group learning.

Robert College – Istanbul, Turkey

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A4LE

Flint Hill Middle School – Oakton, VA

b|g|a

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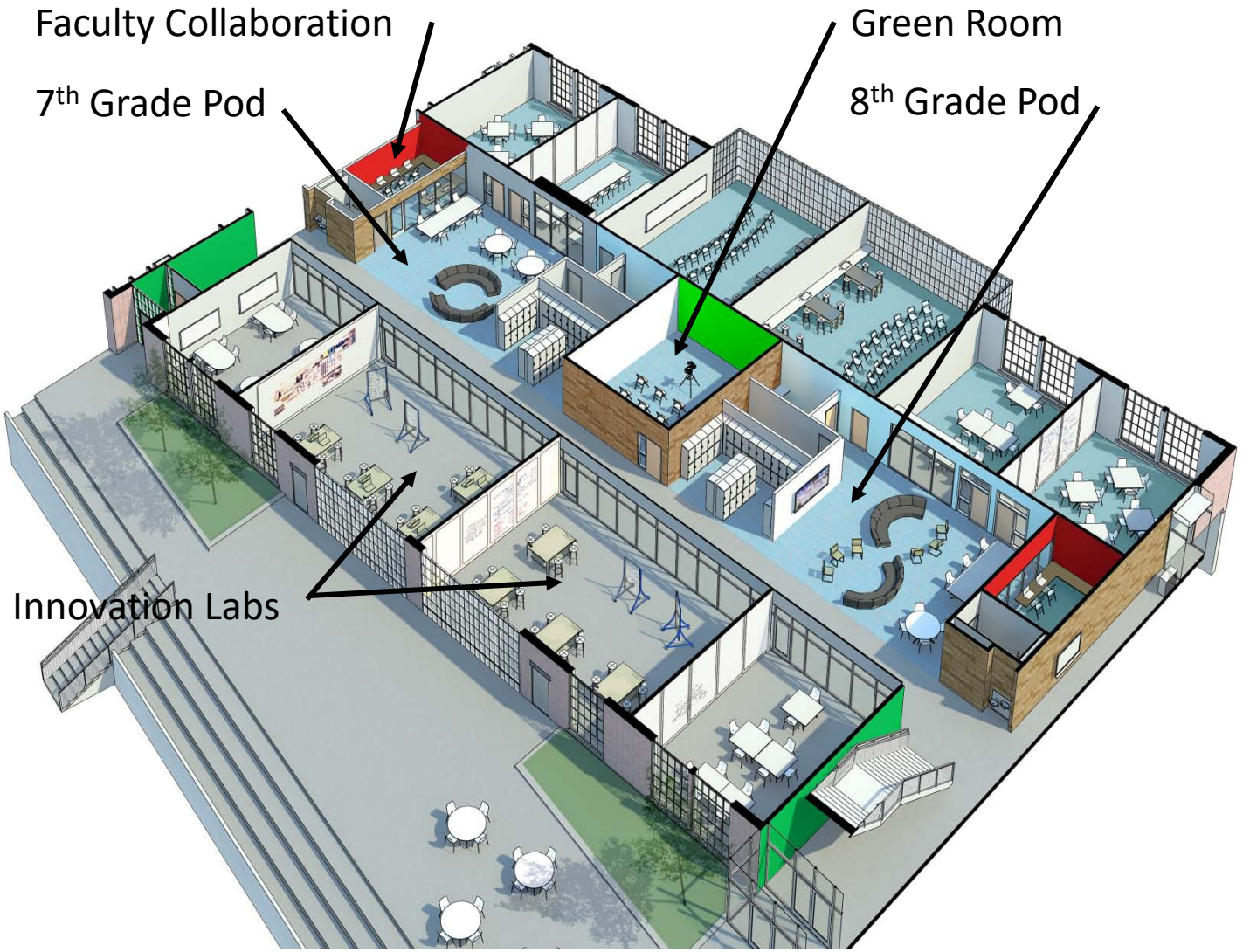
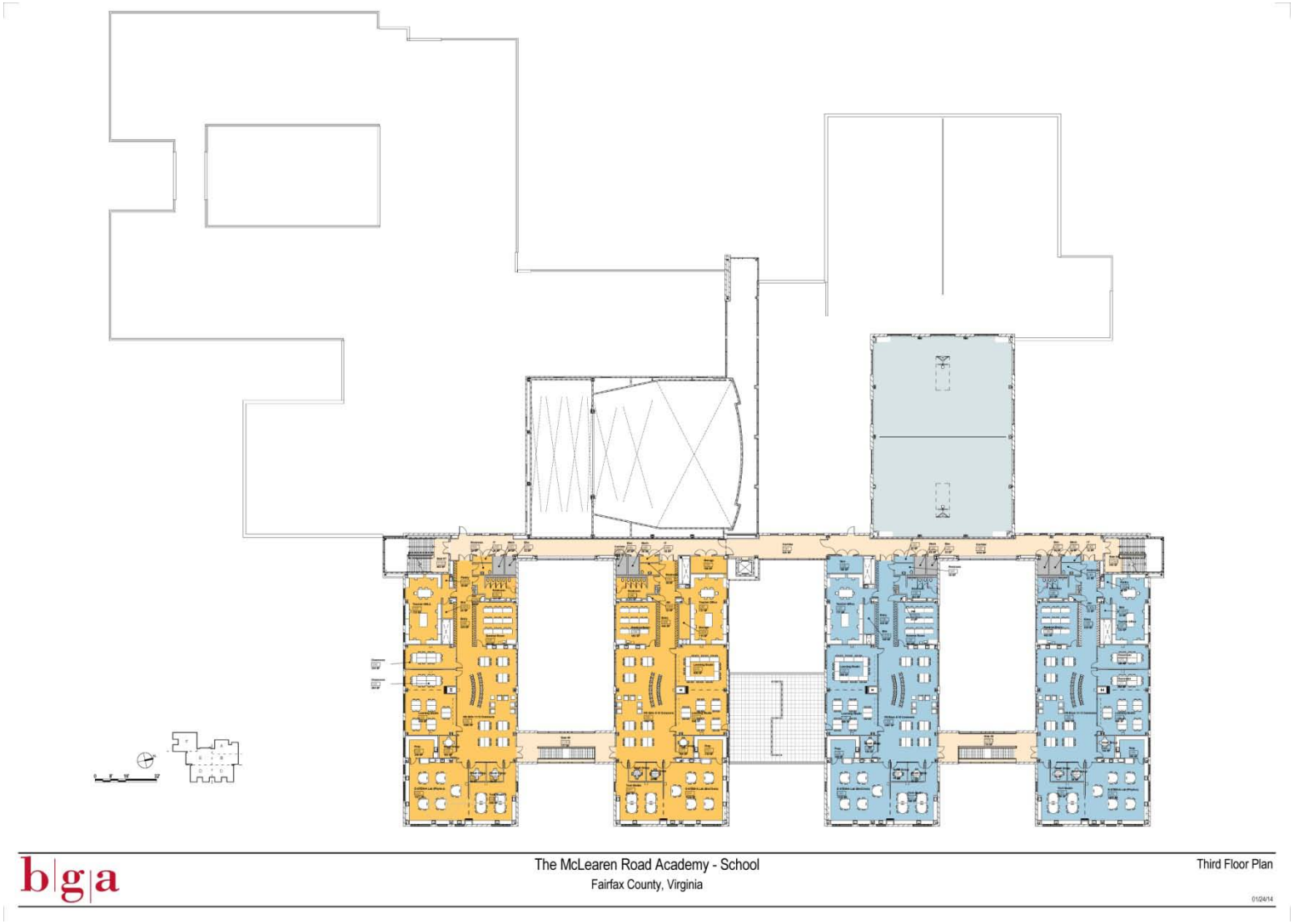


Flint Hill Middle School – Oakton, VA

b|g|a

A4LE



1,200-student K-12 co-ed private school.

King Abdullah Academy – Fairfax, VA

b|g|a

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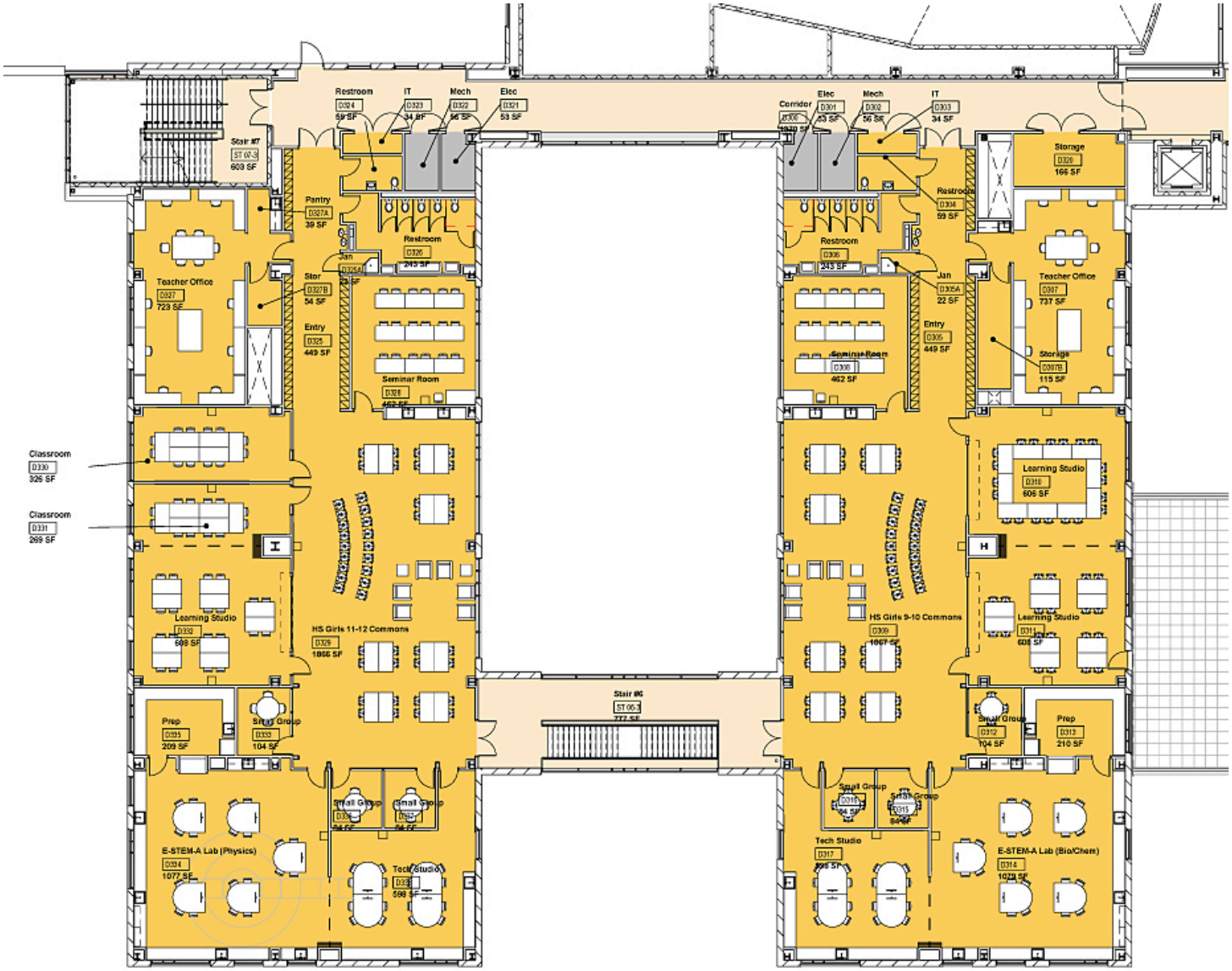

9-10th Grade Pods & 11-12th Grade Pods for Girls

King Abdullah Academy – Fairfax, VA

b|g|a

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Collaboration Commons

King Abdullah Academy – Fairfax, VA

b|g|a

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Collaboration Commons

King Abdullah Academy – Fairfax, VA

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Collaboration Commons

King Abdullah Academy – Fairfax, VA

b|g|a

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Middle School FabLab

Lowell School – Washington, DC

b|g|a

A4LE

Middle School FabLab

Lowell School – Washington, DC

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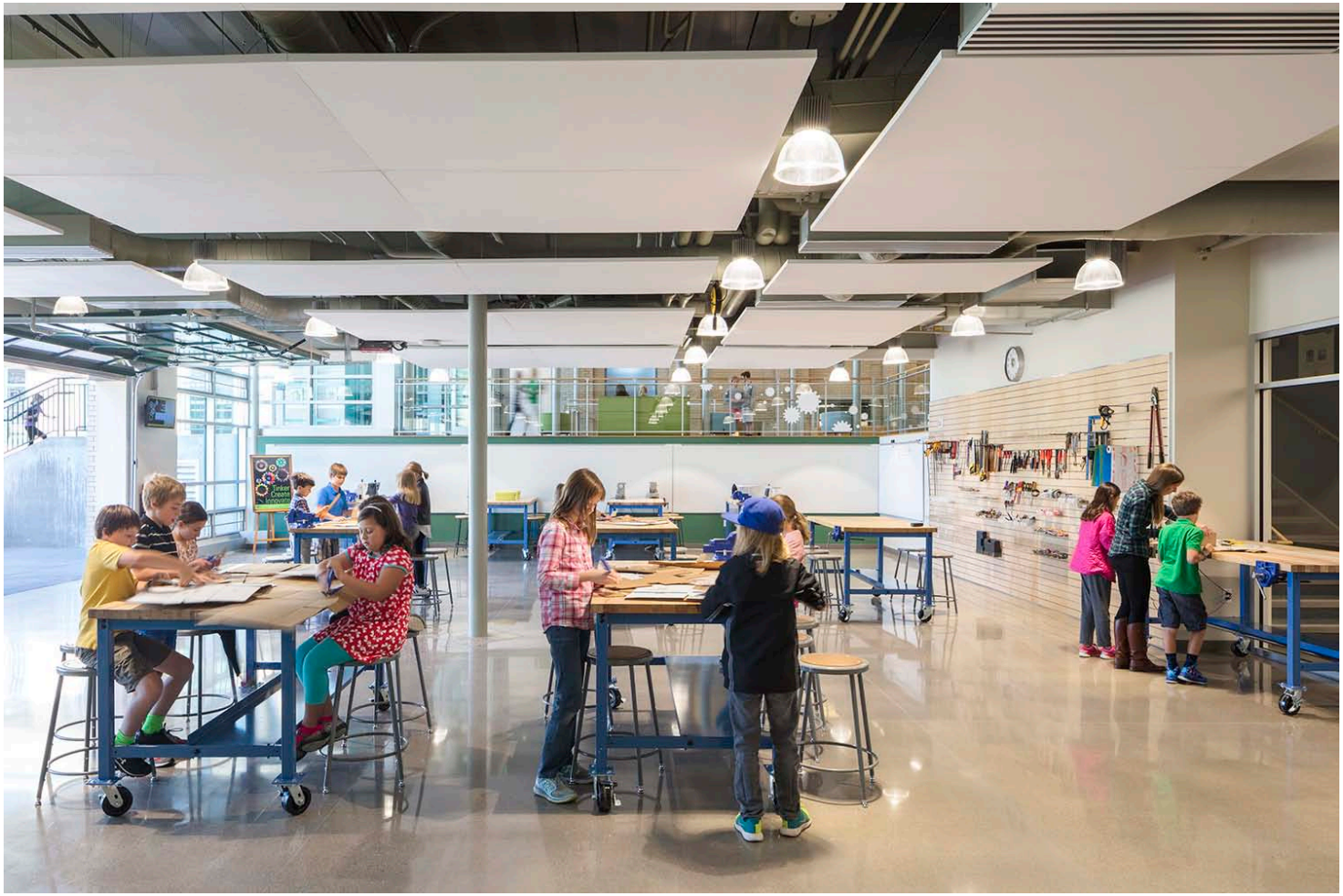

Invention Lab

Graland Country Day School – Denver, CO

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Invention Lab

Graland Country Day School – Denver, CO

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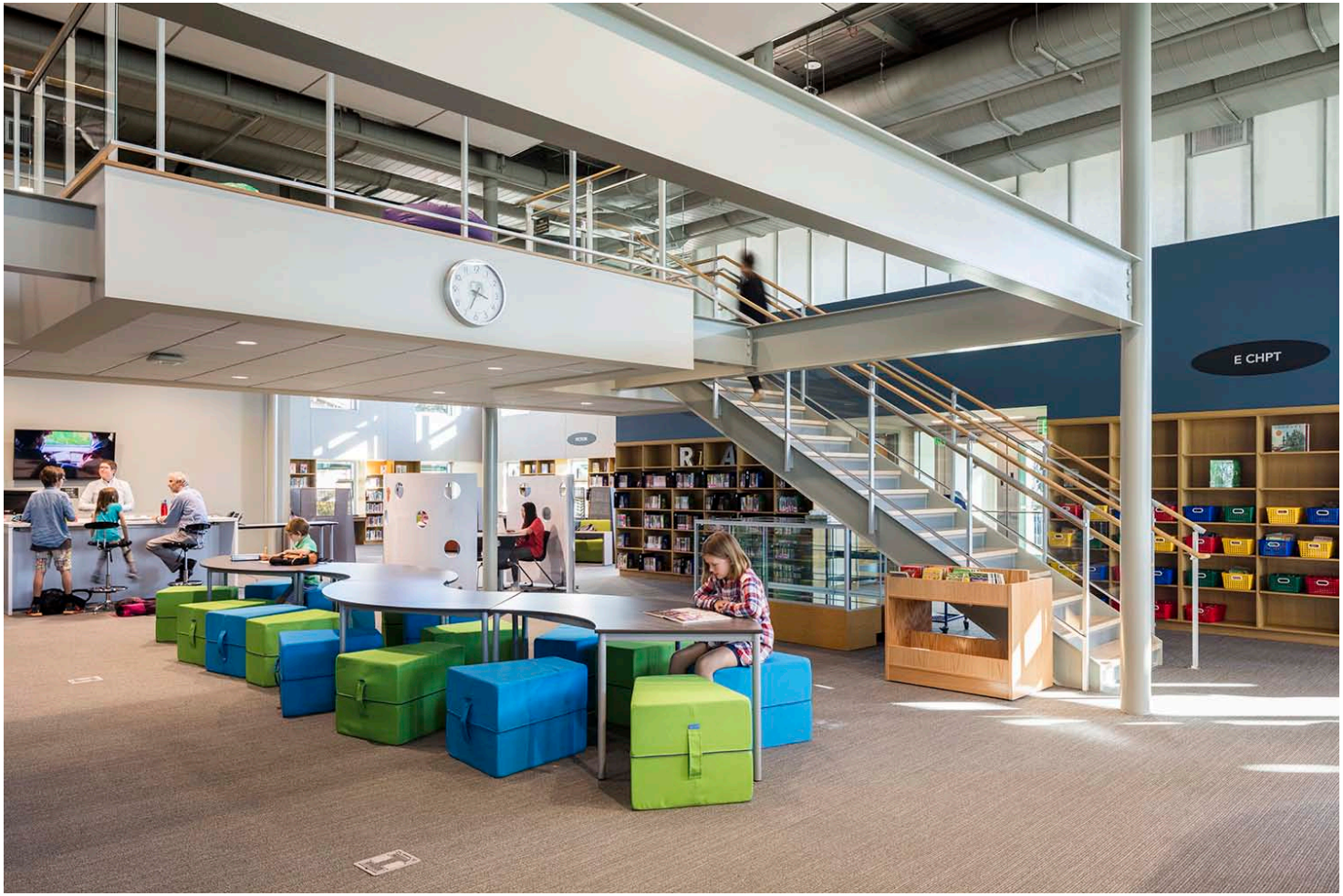

Collaboration Commons

Graland Country Day School – Denver, CO

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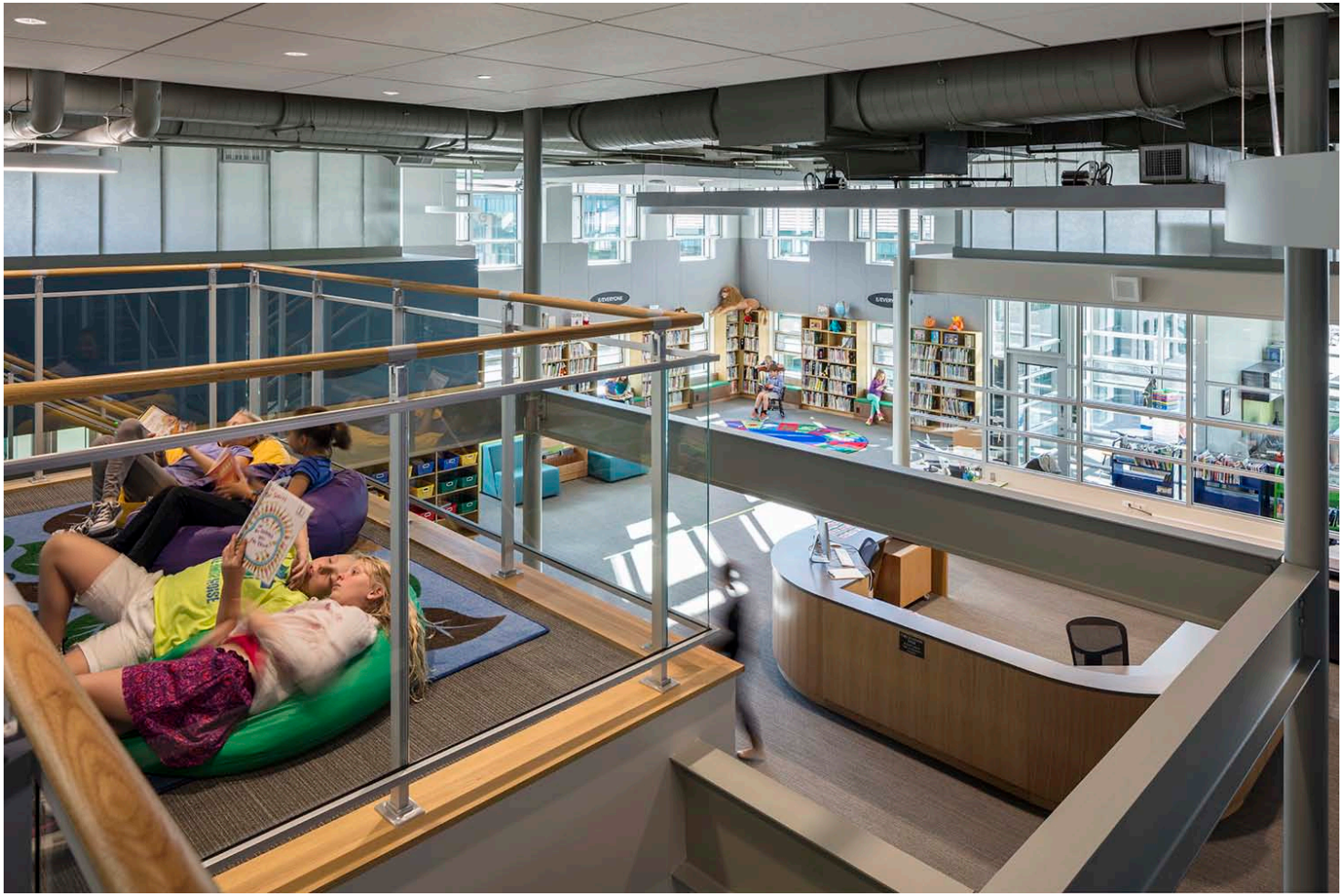

Collaboration Commons

Graland Country Day School – Denver, CO

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Flint Hill Upper School – Oakton, VA Collaboration Commons

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Flint Hill Upper School – Oakton, VA Study in Commons

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Association for Learning Environments
Northeast Regional Conference

DEEPER LEARNING

Leon Chatelain, AIA, *Bowie Gridley Architects*
lchatelain@bowiegridley.com

Catherine Saldutti, *EduChange*
catherine@educhange.com

Xenia Cox, *Archademia*
xenia@educhange.com

Brian Mills, *The Met School*
bmills@metmail.org

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b|g|a