Modern Instructional Mindsets, Modern Learning Spaces: When Learning Needs Drive Design Decisions

Friday, Oct. 27th, 2pm

Presenters: Jacqueline Abair, Paul Bianchi, Jessica Marchetti, Lauralyn Stewart, Thomas Witmer
Learning Objectives:

1. To understand some research-based instructional practices to be supported by modern learning spaces
2. To learn how these practices are operationalized in a space
3. To compare the timeline and process of modernizing spaces and modernizing teaching and learning across a district
4. To consider barriers to successful collaborations, and possibilities for improvement
Big Picture

"How can the District ensure that all students think deeply, support their thinking, apply problem-solving skills, and actively participate in their learning as they acquire content knowledge?"

- Education in the 21st century
- Project-based (or active) learning
- Advances in school design, architecture, technology and furniture
Application

Teachers and students are currently utilizing innovative spaces to extend current classroom work to further incorporate:

- Creativity, problem solving, and multi-disciplinary projects
- In-depth inquiry
- Formulating questions and researching
- Task-based self-directed learning
- Communicating work to a variety of audiences
- Assessment and feedback of on-going learning

Innovative spaces empower teachers and students by providing the space, resources and technology to foster collaboration and promote active learning.
In the Fall of 2011, the Chappaqua Central School District formed a new committee, the Chappaqua Education for the Future (CEFF).

CEFF identified 3 core values for the school district in the 21st Century: Creativity, Communication and Collaboration, and Social/Emotional/Physical Health.

In the Spring of 2012, the school district commenced a feasibility study to explore collaborative learning spaces and hired architecture firm.

- Excerpted from INNOVATIVE, INSPIRING SPACES FOR 21ST CENTURY LEARNING, Presentation by Eric Byrne, Ed.D for the 2nd International Ohalo Conference for Innovative Education.
iLab

- iLab first piloted in February 2014
  - Supported through Chappaqua Innovation Fellows
  - Focused on exploring the use of time, flexible space and technology – through Project-based learning, interdisciplinary connections, collaboration, and feedback
  - Spread school wide

TIMELINE

2/2014

iLab opened
iLab at Horace Greeley
Guiding Principles
Classroom Community Actionable Feedback

Authentic Audience Big Night Celebration
iLab at Horace Greeley

Video Link
CSF Grant Classrooms

- Classrooms throughout the district were designed with furniture and other features to mimic the iLab in 2016.
STEAM Spaces in Secondary School

Science teachers have traditionally been keenly aware of lab design:

- students working individually, in groups, doing experiments
- storage and distribution of lab equipment
- access to water, electricity, gas, and safety equipment
Good lab design: lessons learned

- Appropriately sized furniture
- Movable furniture for a flexible space
- Large uncluttered table-tops
- Storage and utilities at the perimeter
The Physics lab classroom
Maker spaces

- An extension of the science lab, similar design priorities
- Greater emphasis on direct student access to equipment, safety
- Storage for materials, student project work
HG Maker Space
Bond

- 42 million dollar bond passed and construction began in 2017
- Global learning communities
- Maker Spaces
- STEAM Labs
- Instructional Centers

**TIMELINE**

2/2014: iLab opened
2/2016: CSF Grant classrooms
6/2016: Bond Passed
6/2017: Bond work begins
Professional Learning

*Changing PHYSICAL space and MENTAL space.*

- Just changing the space will not change teaching.
- Time to vision, play, learn, explore
Professional Learning: Collaboration and Inquiry

- Learning Teams, Fellowships, Inquiry Groups
- Student focus groups
- Partnerships with architects and curriculum coaches
- School visits - within and outside the district
## CCSD STEAM - PBL Philosophy and Purpose

<table>
<thead>
<tr>
<th>Principles</th>
<th>Outcomes</th>
<th>Assessment</th>
<th>Methods &amp; Practices</th>
<th>Structures &amp; Systems</th>
<th>Educational Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>We believe in learning experiences which are...</td>
<td>We believe in a curriculum that fosters the development of...</td>
<td>We believe in anchoring assessment in the design process, with emphasis on...</td>
<td>We believe in a PBL model of instruction that focuses on...</td>
<td>We believe in facilitating learning for students and staff by incorporating...</td>
<td>We believe that spaces should...</td>
</tr>
<tr>
<td>learner led</td>
<td>design process skills</td>
<td>creative problem solving</td>
<td>iterative problem solving</td>
<td>professional development</td>
<td>support divergent thinking and processes</td>
</tr>
<tr>
<td>inclusive</td>
<td>intrinsically motivated, self-directed and independent thinkers</td>
<td>alignment to project goals</td>
<td>student choice and passion</td>
<td>flexible use of time</td>
<td>allow for dynamic scheduling</td>
</tr>
<tr>
<td>authentic</td>
<td>intellectual empowerment</td>
<td>self reflection</td>
<td>relevant and rigorous content and application</td>
<td>interdisciplinary teaching and collaboration</td>
<td>support a variety of cognitive processes</td>
</tr>
<tr>
<td>interdisciplinary</td>
<td>metacognition</td>
<td>feedback</td>
<td>student or teacher facilitation</td>
<td>collaborative decision making</td>
<td>support both student and teacher collaboration</td>
</tr>
<tr>
<td>inquiry driven</td>
<td>flexibility</td>
<td>application and transfer of knowledge</td>
<td>exploration and play</td>
<td>equity</td>
<td>allow for exhibition and demonstration</td>
</tr>
<tr>
<td>collaborative</td>
<td>confidence and resilience</td>
<td>communication of ideas</td>
<td>growth mindset and intellectual risk-taking</td>
<td>community and industry collaboration</td>
<td>accessible and safe for all</td>
</tr>
<tr>
<td>active</td>
<td>empathy for people and respect for space</td>
<td>development of new insights and skills</td>
<td>multiple opportunities for communication and presentation</td>
<td>K-12 collaboration</td>
<td>have dedicated areas for design and application</td>
</tr>
<tr>
<td>rooted in rich content</td>
<td>innovative ideas</td>
<td>clear connection to curriculum</td>
<td>open ended tasks with multiple outcomes or processes</td>
<td>actionable feedback</td>
<td>have areas that are reconfigurable</td>
</tr>
<tr>
<td>constructivist</td>
<td>communication and collaboration skills</td>
<td>accuracy and precision</td>
<td>virtual or physical product construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>problem based</td>
<td></td>
<td>ethical design</td>
<td>actionable feedback</td>
<td></td>
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<tr>
<td>grounded in the CCSD design process</td>
<td></td>
<td>form and function</td>
<td></td>
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</tbody>
</table>

- learner led
- inclusive
- authentic
- interdisciplinary
- inquiry driven
- collaborative
- active
- rooted in rich content
- constructivist
- problem based
- grounded in the CCSD design process
Elementary School Maker Spaces
Professional Learning: Community Involvement

- Board presentations
- Knowledge Cafes
- Learning Symposiums
- Panel presentations with parents
- Faculty proposal reviews
- Small Learning Communities
Middle School STEAM Centers

**Upper Level**

1) Design Commons
2) Design Studio
3) 3D Lab
4) CNC Room
5) Presentation Area
6) Art Studio
7) Fabrication Lab
8) Maker Space/Robotics Lab
9) Storage

**Lower Level**

1) Presentation/Critique Space
2) Design Studio
3) Fabrication Lab
4) 3D Lab
5) Fabrication Shop
6) CNC Room
7) Project and Material Storage
8) Electrical/Storage
9) Storage
High School

Global Learning Center -- Library

Present

Proposed
Instructional Centers -- L Building (200s)

Present

Proposed

Learning Area A

Learning Area B