Innovative Learning Spaces:

Redesigning Classroom Environments for Today's Learners

Dr. Steven M. Garcia, *Assistant Superintendent for Curriculum, Instruction & Personnel*
Mr. Joseph Catania, *Director of Technology*
Dr. Thomas Callahan, *Director of Math & Science*
Dr. Maria Thompson, *Director of Humanities*

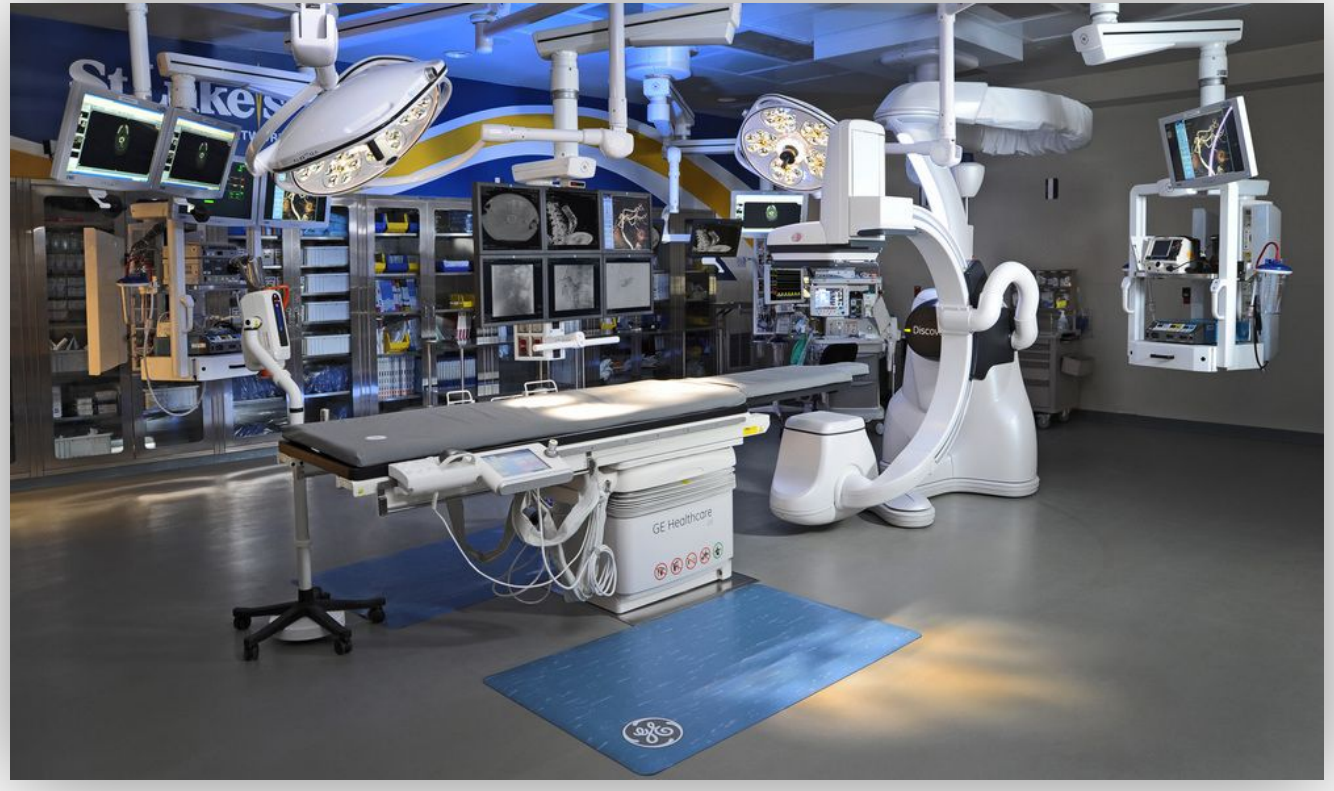
Pelham Public Schools
School Board Work Session
November 28, 2017

Innovative Learning Spaces:

Why? What? How?

Operating Room 1930

Operating Room 2017

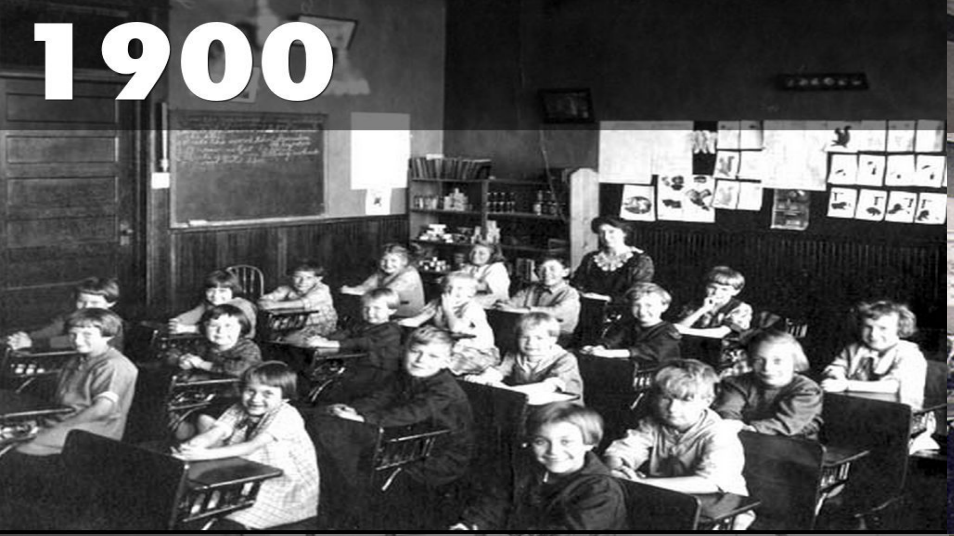


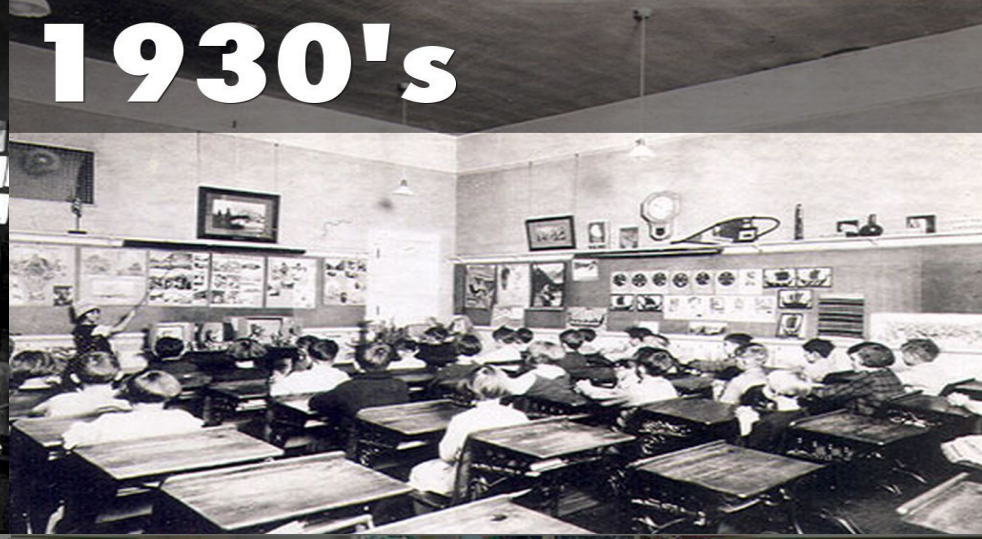
Assembly Line 1930s

Assembly Line 2017

Workplace 1950s

Workplace 2017

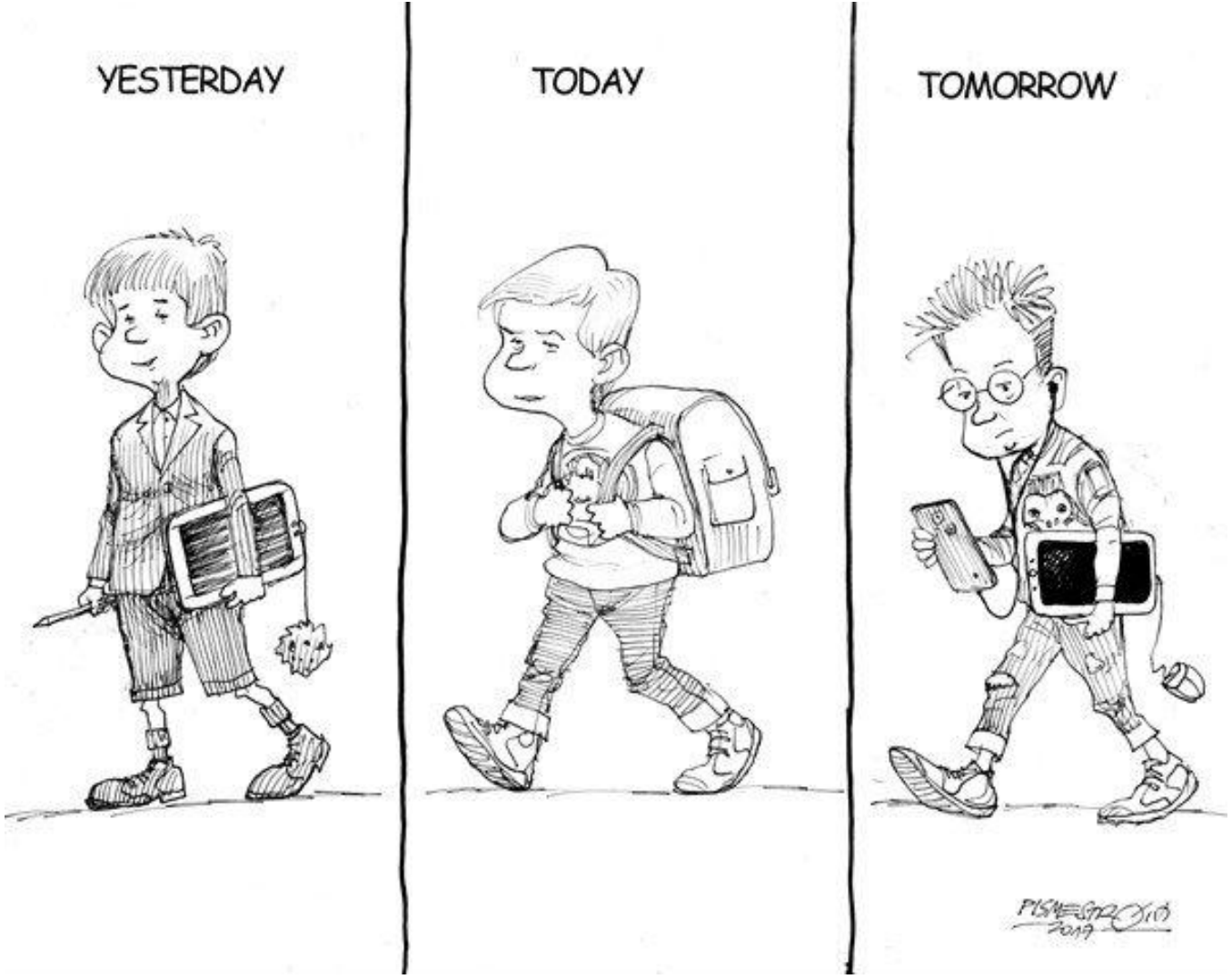

1900


1930's


1950's


1990's

How have we changed?


YESTERDAY
TODAY
TOMORROW

Innovative Learning Spaces:

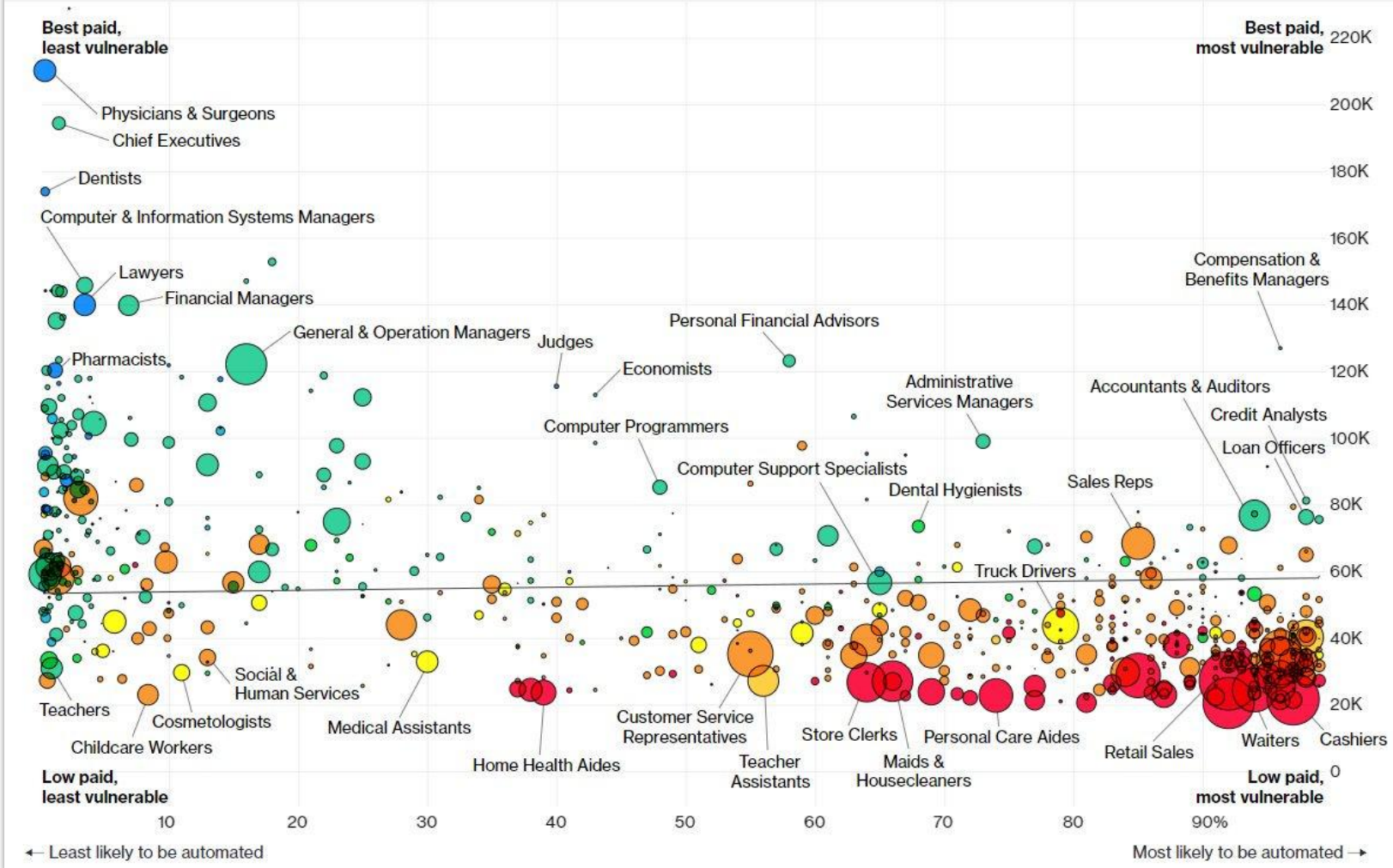
Why? What? How?

Innovative Learning Spaces: *Why?*

Strategic Plan Pillar I: Systematically integrate the principles and content of 21st Century learning into academic and co-curricular programs to prepare all students to **meet current and future challenges**.

In order to **meet current and future challenges of the 21st Century**, all Pelham students will:

1. **Think critically and creatively to solve problems** with multiple literacies
2. **Collaborate and communicate** effectively as self-directed learners
3. **Integrate technologies** seamlessly to enhance excellence in learning
4. Become productive members of a **diverse global community**


Best paid, least vulnerable
Best paid, most vulnerable
Physicians & Surgeons
Chief Executives
Dentists
Computer & Information Systems Managers
Lawyers
Financial Managers
General & Operation Managers
Pharmacists
Judges
Economists
Personal Financial Advisors
Compensation & Benefits Managers
Administrative Services Managers
Accountants & Auditors
Credit Analysts
Loan Officers
Computer Programmers
Computer Support Specialists
Dental Hygienists
Sales Reps
Truck Drivers
Social & Human Services
Teachers
Cosmetologists
Childcare Workers
Medical Assistants
Home Health Aides
Customer Service Representatives
Teacher Assistants
Store Clerks
Maids & Housecleaners
Personal Care Aides
Retail Sales
Waiters
Cashiers
Low paid, least vulnerable
Low paid, most vulnerable
220K
200K
180K
160K
140K
120K
100K
80K
60K
40K
20K
0
10
20
30
40
50
60
70
80
90%
Least likely to be automated
Most likely to be automated

THE FUTURE OF EMPLOYMENT?

Automation could wipe out millions of jobs

In 2013, Oxford University researchers Carl Benedikt Frey and Michael A. Osborne published an influential study estimating that 47 percent of U.S. jobs were at high risk of automation in the coming two decades. For this analysis, independent information designer Henrik Lindberg applied Frey and Osborne's projections to 2016 data from the U.S. Bureau of Labor Statistics. The chart shows how many Americans currently work in a wide range of occupations, and how likely Frey and Osborne believed each occupation is to be automated.

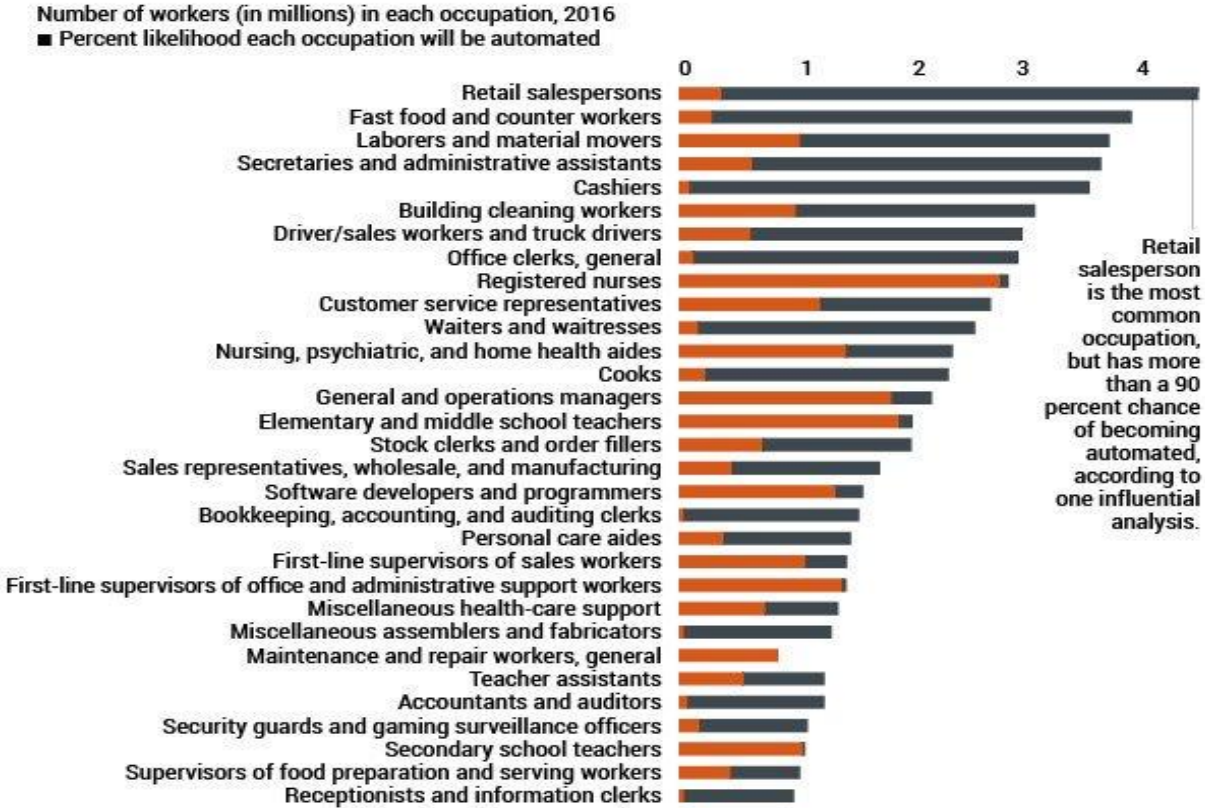
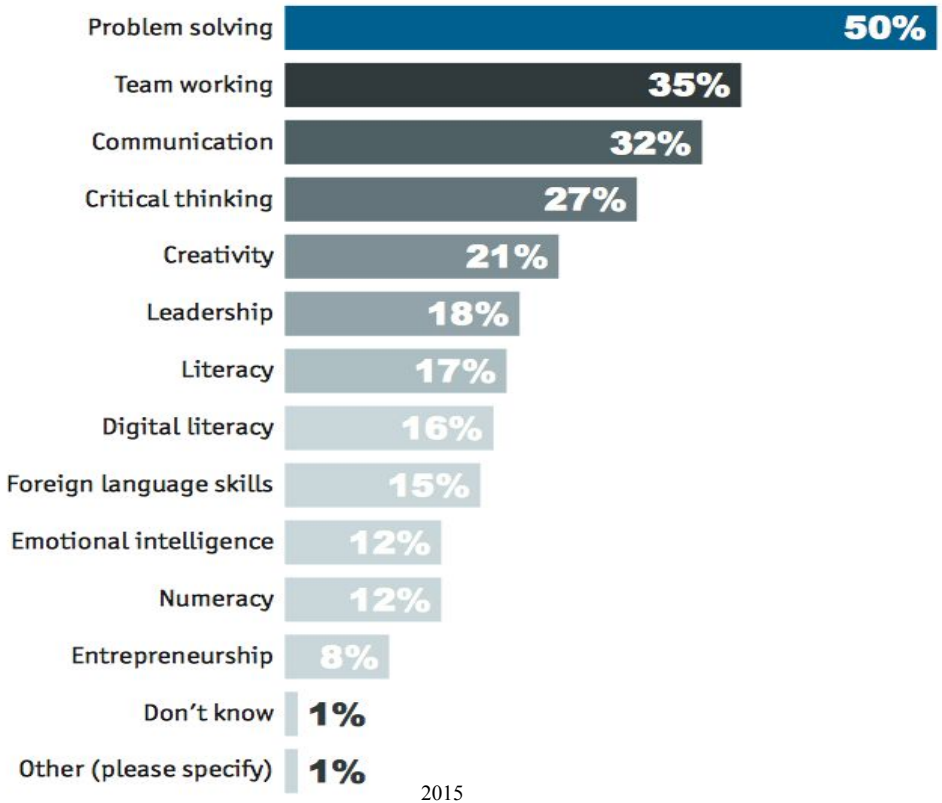


Chart 2 (business survey)

Q **Which of the following would you say are the most critical skills for employees in your organisation to possess today?**
Select up to three
(% of respondents)



2015

Source: The Economist Intelligence Unit.

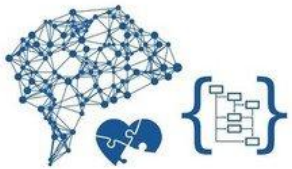
Top 10 skills

in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity

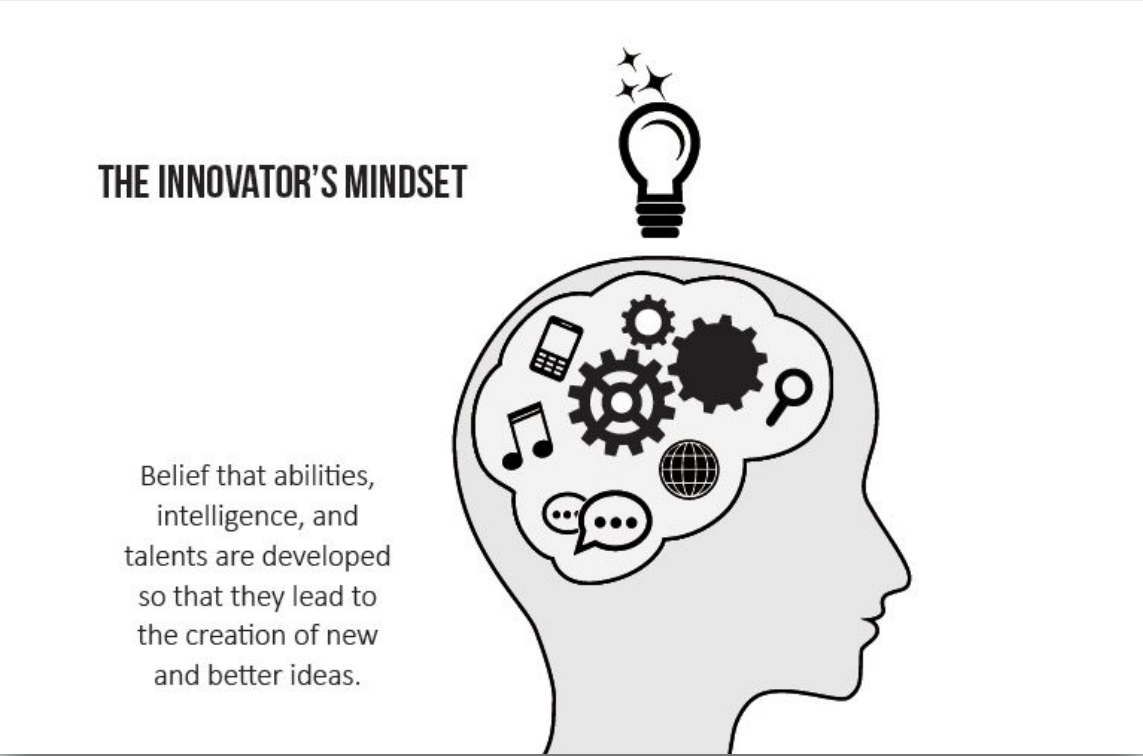


Source: Future of Jobs Report, World Economic Forum

“Our job is NOT to prepare students for something. Our job IS to help students prepare themselves for ANYTHING.”

A.J. Juliani

Innovative Learning Spaces: *What*?



Today’s Classrooms Should Support Active Student-Centered Learning Experiences.

Student-Centered Learning

1. *Individualized*
2. *Community-based*
3. *Experiential*
4. *Collaborative*

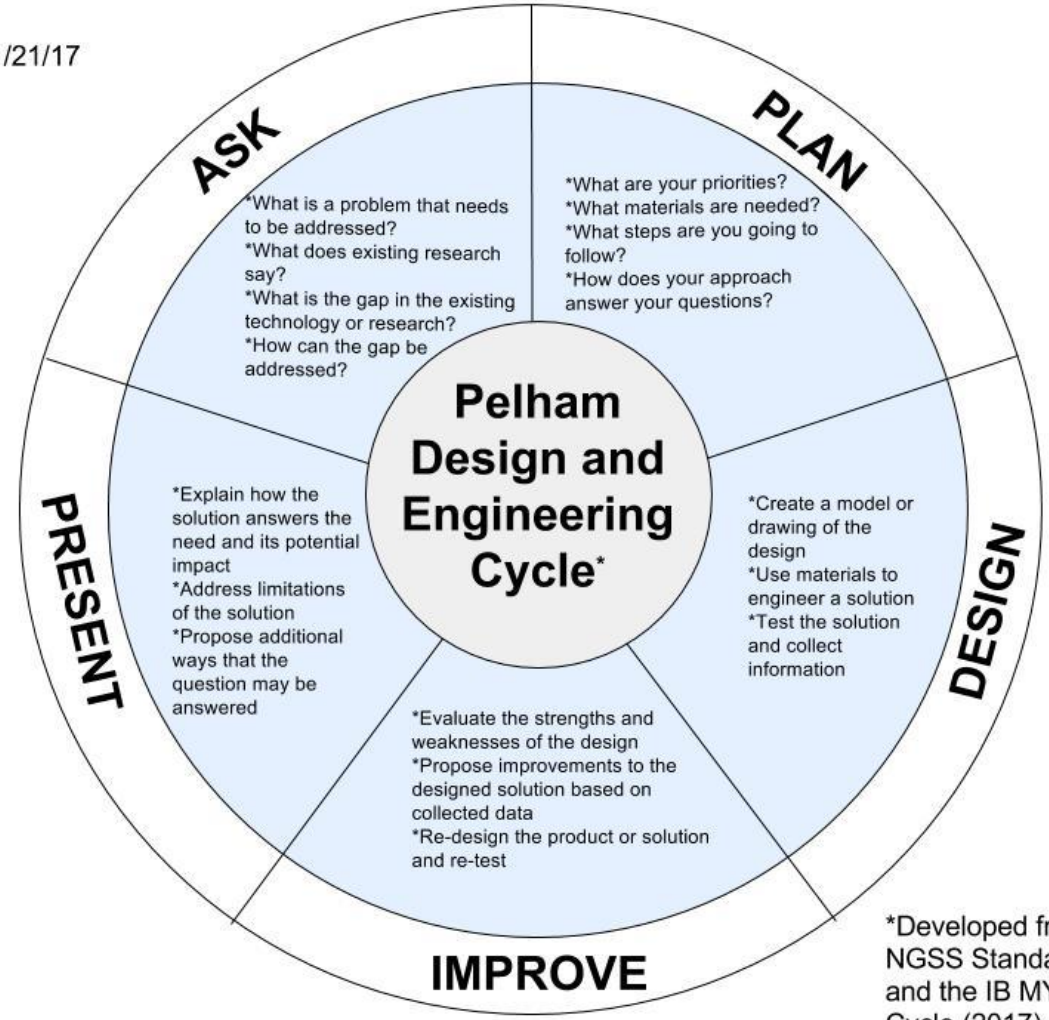
Blueprint for Tomorrow: Redesigning Schools for Student-Centered Learning (Nair, 2014)

Twenty Modalities of Learning

1. Independent study
2. Peer-to-peer tutoring
3. Team collaboration
4. One-on-one learning with a teacher
5. Teacher lecture
6. Project-based learning
7. Learning with mobile technology
8. Distance learning
9. Internet-based research
10. Student presentations
11. Performance-based learning
12. Seminar / roundtable discussions
13. Interdisciplinary learning
14. Naturalist learning
15. Social / Emotional learning
16. Art-based learning
17. Storytelling
18. Design-based learning (Maker)
19. Team teaching and learning
20. Play- and movement-based learning

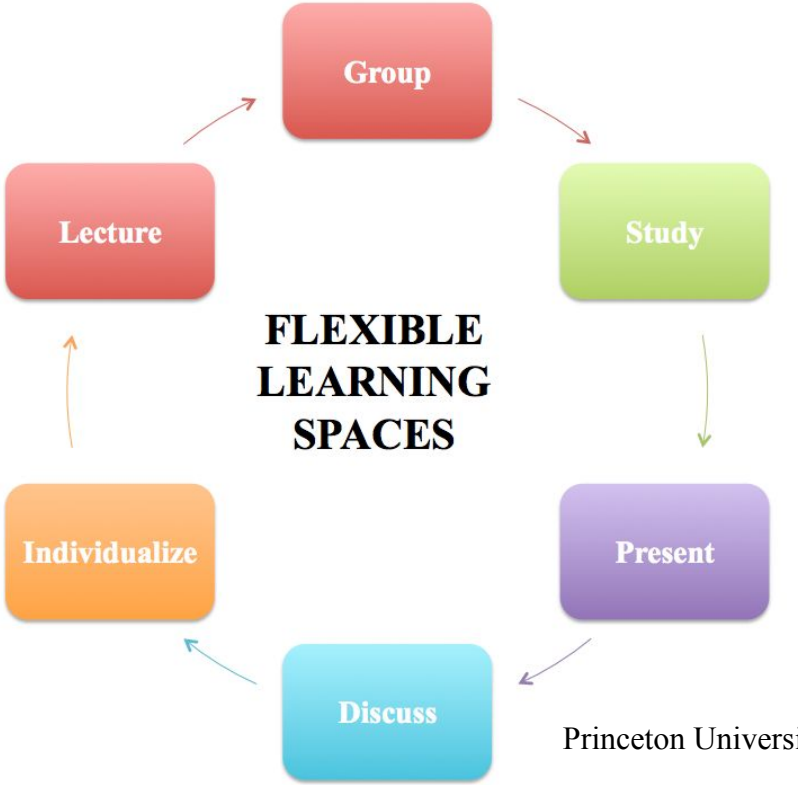
Blueprint for Tomorrow: Redesigning Schools for Student-Centered Learning (Nair, 2014)

DRAFT 11/21/17



*Developed from the NGSS Standards (2017) and the IB MYP Design Cycle (2017)

Innovative Learning Spaces: *How*?



Princeton University (2013)

The **Four School Design Principles**

1. Be **welcoming** (safe, nurturing, encouraging good citizenship)
2. Be **versatile / flexible** (agile and personalized)
3. Support **varying and specific learning** activities (multiple learning settings)
4. Send **positive messages** (about identity and behavior)

Blueprint for Tomorrow: Redesigning Schools for Student-Centered Learning (Nair, 2014)

What differentiates an *Innovative* from a *Traditional* Learning Space?

Traditional

- Limited Writing Surfaces
- Immobile
- Structured
- Defined
- Limited Personal Space
- Disconnected
- Desks

Innovative

- Versatile Writing Surfaces
- Mobile
- Flexible
- Open-ended
- Varied Spaces (group & individual work)
- Wi-fi, hot spots, outlets, devices
- Tables, stations, hubs

https://www.edtechteam.com/inspiringspaces/

Elements of 21st Century Classroom Design

Whiteboards & bulletin boards lowered for students to reach & work together.

Organize supplies within students' reach. Assign class jobs to share the responsibilities for resources.

ABSENT: sticker charts, card-turning pockets, names on whiteboard, & other unnecessary extrinsic motivators.

Designate a place for students to gather as a whole group for mini-lessons & wrap-ups, separate from their work space. Keep a mobile cart nearby to easily project from your laptop.

Add a touch of MakerSpace with a Maker zone in the back of the room. A shelf, a pegboard, & a workbench make a great start!

Carefully curate your classroom library. Include picture books (even for older students!) & a variety of levels & genres. Read as much of it as possible!

Kidney desk + your desk = space efficiency. Maintain your office space by decking out shelves & cabinets behind you with all your supplies.

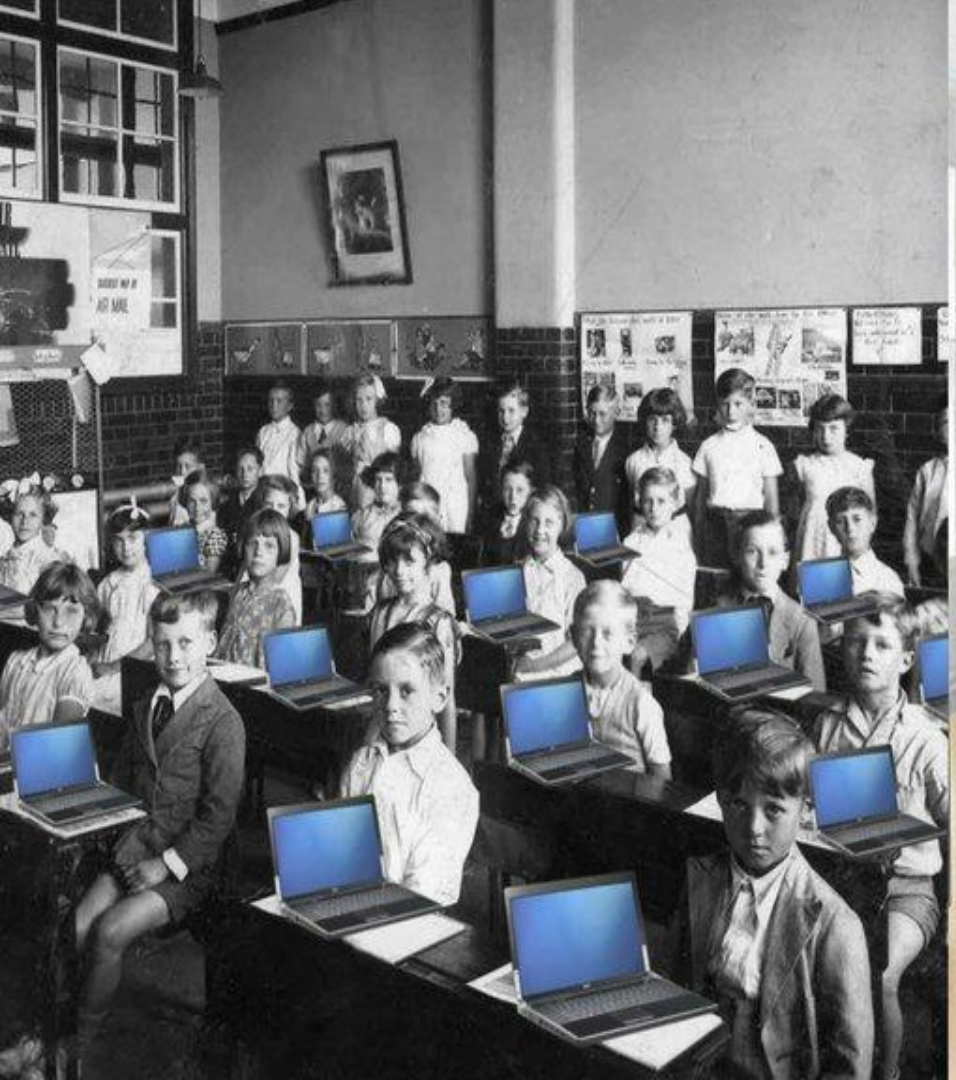
Add casters to student chairs & tables to give them flexibility in where they choose to work.

With throw pillows, bean bags, video game chairs, etc. make comfortable places for students to work & think independently or in cozier groups.

Design a tech station where students can check out tablets for research, projects, & blogging


iDare


1789
1914
1945
1991
PELHAM MEMORIAL HIGH SCHOOL
DAILY ANNOUNCEMENTS
WEDNESDAY – SEPTEMBER 27, 2017 – DAY 1
"SCHOOLWIDE"
128



K-12 Innovative Committee Leaders

Jeanette Golkowski (1st Grade) at Colonial

Emily Kaiser (3rd Grade) at Prospect Hill

Gail Sider (4th Grade) at Hutchinson

Adele Reynolds (5th Grade) at Siwanoy

Nicole Starvatow (6th Grade math) at PMS

Neil Schleifer (English / Journalism) Room 235 at PMHS

Jeanette Connolly (Bridge Academy) Room at PMHS

Marc Sirico & Megan Rice (Social Studies) Room 128 at PMHS

Steve Beltecas (Science Research) Room at PMHS

References

Baepler, P., and Walker, J. D. (2014). “Active Learning Classrooms and Educational Alliances: Changing Relationships to Improve Learning.” *New Directions for Teaching and Learning* no. 137: 27-40.

Barrett, P., Davies, F., Zhang, Y., & Barrett, L. (2015). The impact of classroom design on pupils’ learning: Final results of a holistic, multi-level analysis. *Building & Environment,* 89, 118-133.

Brown, M., & P. Long. (2006). Chapter 9: Philip Long Trends in Learning Space Design. In D. G. Oblinger (Ed), *Learning Spaces*. Washington, DC: EDUCAUSE.

Chiang, F.-K., & Sun Mingze (2014). The feature analysis and construction of future classroom (in Chinese). *The Elementary and Middle Schools Information and Technology Education, 9*, 29-32.

Chism, N. (2006). Challenging Traditional Assumptions and Rethinking Learning Spaces. In D. G. Oblinger (Ed), *Learning Spaces*. Washington, DC: EDUCAUSE.

Couros, G. (2015). *The innovator’s mindset: empower learning, unleash talent, and lead a culture of creativity*. San Diego, CA: Dave Burgess Consulting.

Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Random House.

Nair, P. (2014). *Blueprint for tomorrow: Redesigning schools for student-centered learning*. Cambridge, MA: Harvard University Press.

Schwartz, K. (2017). What teachers must consider when moving to flexible seating. Retrieved from https://ww2.kqed.org/mindshift/2017/11/27/what-teachers-must-consider-when-moving-to-flexible-seating/ on November 28, 2017.

Strauss, V. (2015). Answer sheet: American schools are modeled after factories and treat students like widgets. Right? Wrong. *The Washington Post*. Retrieved from https://www.washingtonpost.com/news/answer-sheet/wp/2015/10/10/american-schools-are-modeled-after-factories-and-treat-students-like-widgets-right-wrong on October 12, 2017

Wulsin, Jr., L.R. (2013). “Classroom Design – Literature Review.” Paper prepared for the Special Committee on Classroom Design at Princeton University. August 8, 2013. Retrieved from https://www.princeton.edu/provost/space-programming plannin/SCCD_Final_Report_Appendix_B.pdf on August 25, 2017.

Resources

Articles:

- Infographic: The Science of Classroom Design
- Edutopia Visualizing 21st-Century Classroom Design
- Architecture's Pivotal Role in the Future of K-12 Learning
- Learning Zones

Furniture:

- Steelecase
- Virco