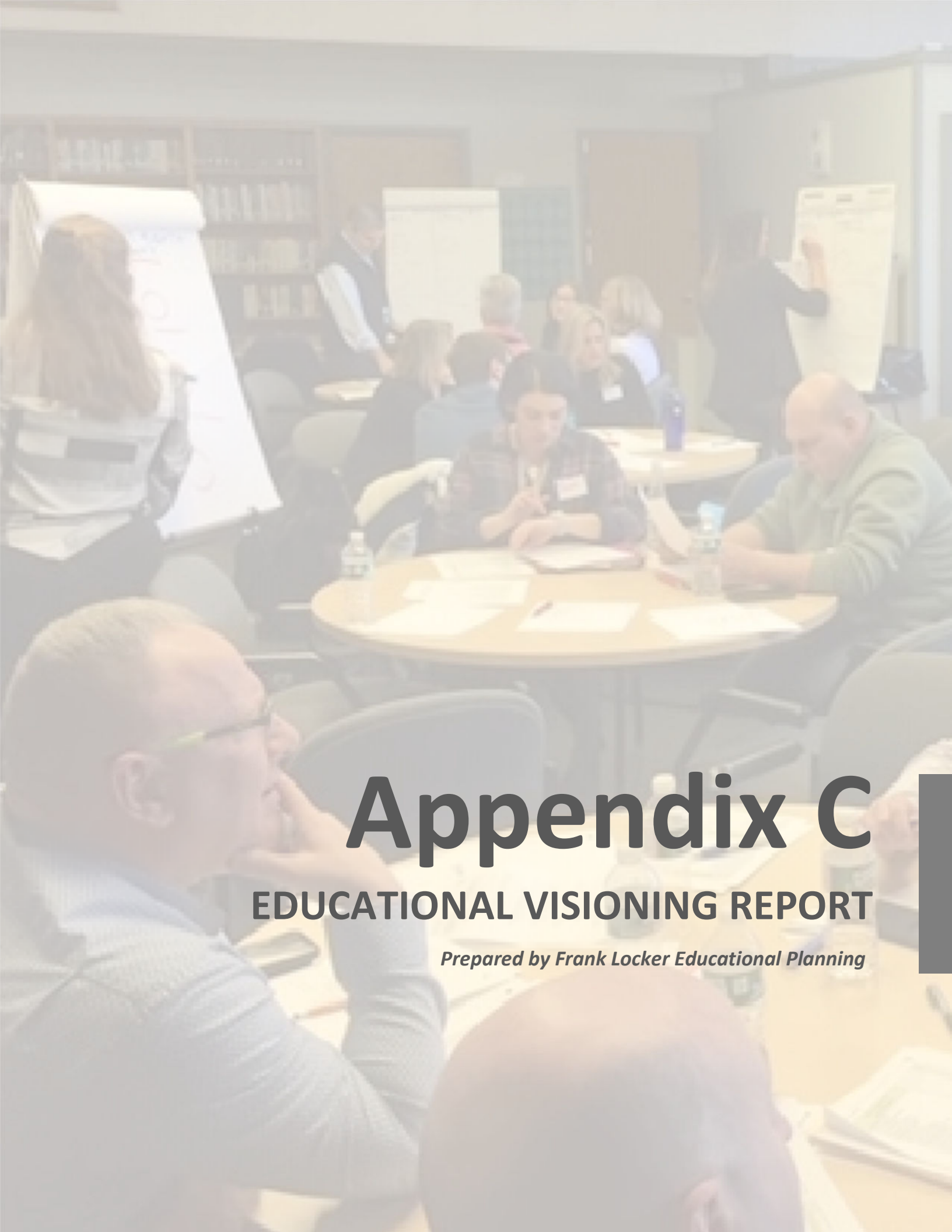




Appendix C

EDUCATIONAL VISIONING REPORT

Prepared by Frank Locker Educational Planning



Best/Next Practices Presentation PART 2 Responses to issues as presented	Very Important	Important	Don't Know	Maybe	Not Important		Scary to Me
24 21st Century Schools	11	10					
25 Safety + Security in 21st Century Schools	20	3					1
26 Flexible, Varied, Brain Based Furniture	14	7	2	1			2
27 21st Century Learning Studios	11	11	1	1			1
28 Extended Learning Areas	16	6	1	1			2
29 Teacher Planning Centers	18	4	1	1			
30 Small Learning Communities	11	10	3				1
31 End of the Library as We Know It Today	10	10		4			
32 End of the Cafeteria as We Know It today	9	7		8			
33a End of Isolated Teaching: Blue Tech	10	6	4	2			
33b End of Isolated Teaching: Forest Ave	8	7	3	4			1

Best/Next Practices Presentation PART 2 RANKING OF RESPONSES	Very Important	Important	Don't Know	Maybe	Not Important	RANK	Scary to Me
25 Safety + Security in 21st Century Schools	20	3				1	
29 Teacher Planning Centers	18	4	1	1		2	
28 Extended Learning Areas	16	6	1	1		3	
26 Flexible, Varied, Brain Based Furniture	14	7	2	1		4	
27 21st Century Learning Studios	11	11	1	1		5	
30 Small Learning Communities	11	10	3			5	
31 End of the Library as We Know It Today	10	10		4		7	
24 21st Century Schools	11	10				8	
33a End of Isolated Teaching: Blue Tech	10	6	4	2		10	
32 End of the Cafeteria as We Know It today	9	7		8		11	
33b End of Isolated Teaching: Forest Ave	8	7	3	4		12	

The responses ranked:

Best/Next Practices Presentation PART 1 RANKING OF RESPONSES	Very Important	Important	Don't Know	Maybe	Not Important	RANK	Scary to Me
20 Project Based Learning	21	6	1			1	1
2 Student Engagement	23	4				2	1
18 21st Century Skills/Competencies	23	3				3	
17 Creating Innovators	18	8	1			4	2
4 20 th + 21 st Century Learning	18	7	1	1		5	
14 Small Group Collaboration	16	10		1		6	1
9 Social/Emotional Learning	12	15				7	1
13 Computers for Learning	18	7		1		7	
6 Learning Pyramid	13	10	4	1		9	
5 Student Talk at Dinner	16	7	2	2		10	
11 Integrated Arts + Academics	13	12	1	1		10	
7 Gardner: Multiple Intelligences	14	11		1		12	
21 Design Thinking, Making Things to Learn	15	8	3			12	
12 STEM/STEAM/Engineering	11	14	1			14	
19 Jerald's Research on 21st Century Education	13	10	2			15	1
10 Relationships: Dunbar's Law, Magic of 150	11	6	7	3		16	
23a School Organization: Academics in Tech	15	7	1			16	1
3 Futurist Thoughts	12	8	3	2		18	4
8 Personalized Learning	9	11	3	3		19	2
22 School Organization	13	8	1	2		19	2
23b School Organization: Thematic SLCs	11	7	5			21	1
23c School Organization: SWAS	11	6	6			22	2
16 Mastery Transcript Coalition	9	9	5			23	
1 History Work + School	8	10	4		3	24	2
15 Class Time	6	10	7	1	1	25	1

Note that the scariest issue was Futurist Thoughts.

Individual Comments

Comments from individual Visioning Team members in response to the presentation issues are as follows:

1 History Work + School

- SAD – let's move past this
- Doesn't apply to current W and A habits
- We need to learn from it
- Need to move from rows
- Success
- Just so different
- Human interaction
- DESE still has (outdated) framework
- School setting should connect to the work setting
- We are not old assembly line any more
- White boards – Google
- Beverly Middle School
- Needs to change
- Round table encourages collaboration

2 Student Engagement

- If students are not engaged, they cannot learn effectively
- I wonder how engaged our students are
- Student will be more ...



Educational Visioning

Northeast Metropolitan Regional Technical High
School
Wakefield, MA
March 2020



DRAFT
Frank Locker Educational Planning



Contents + Acknowledgements

CONTENTS

Ch 1 Contents + Acknowledgements

Ch 2 Executive Summary

- Introduction
- Educational Vision
- Facility Concepts

Ch 3 Educational Vision

- Introduction
- Vision Components
- Guiding Principles
- Most Important Concepts for the Future
- Learning Modalities
- School Organization

Ch 4 Facility Concepts

- Introduction
- Facilities Overview
- Most Important Concepts for the Future
- Places for Learning
- Defined Spaces
- Overall Facility Relationship Diagram

Ch 5 Appendices

- 5.1 Workshop Notes Day 1
- 5.2 Workshop Notes Day 2
- 5.3 Workshop Notes Day 3
- 5.4 21st Century Schools Presentation
- 5.5 Places for Learning Presentation
- 5.6 Integrating the Curriculum
- 5.7 School Snapshot Presentation



ACKNOWLEDGEMENTS

Visioning Team

STUDENTS

Angelo DeBota	Student
Allison Maldonado	Student
Adam Wu	Student

TEACHERS

Michele Bova	Teacher
Mary Bowen	Teacher
Jim Gangi	Teacher
Sal LaFauci	Teacher
Chris Medelinskas	Teacher
Joe Papagni	Teacher
Karen Reucker	Teacher
Erin Selvitella	Teacher
Annemarie Tesora	Teacher

PARENTS

Mark Cheffro	Parent
Michele Doyle	Parent
William Guinasso	Parent
Dan Zeitz	Parent

COMMUNITY

Ted Nickole	Community
-------------	-----------

TRADE COUNCILS

Cynthia Fera	Industry
Don Heres	Industry
John Lynch	Industry
Peggy Pesce	Industry
Chris Schrimpf	Industry

SCHOOL ADMINISTRATION

Dave DiBarri	Superintendent
Dawon Dicks	Guidance
Dave Fabrizio	Administrator

Robera Grutti	Administrative Assistant
Nate Lamar	Administrator
Tracey O'Brien	Administrator
Jay Picone	Administrator
Carla Scuzzarella	Principal

Owner's Project Manager

PMA CONSULTANTS

Joe DeSantis	Senior Associate
Anthony Lopresti	Associate
Kevin Nigro	Project Manager

Architects

DRUMMEY, ROSANE, ANDERSON DRA

Carl Franceschi	Partner
Vladimir Lyubetski	Project Manager
John Tindall-Gibson	Educational Planner

Educational Planner

FRANK LOCKER EDUCATIONAL PLANNING

Dover, NH 03820
617.412.7444
www.franklocker.com

John Kosko	Curriculum Integration Expert Former Superintendent South Shore Vocational Technical High School, President of Massachusetts Association of Vocational Administrators
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Dr. Frank Locker



Executive Summary

INTRODUCTION

This Educational Vision reflects the work of a Visioning Team, approximately 35 teachers, school administrators, school board members, parents, students, trade council members, the owner's project managers, and the architects. Created in three afternoons of intense facilitated workshops it is intended to guide the long-term development of both education and facilities for the Northeast Metropolitan Regional Technical High School (NEMT).

EDUCATIONAL VISION

Guiding Principles

The *Guiding Principles* presented here were created to express the values, beliefs, and concepts developed by the educator and community Visioning Teams which examined educational trends, best practices, and issues affecting the delivery of 21st century education. These *Guiding Principles* present the essence of that inquiry. They are not policy but they address the overarching themes identified by participants. They may serve as a foundation for the future school. As such, they are intended to form the basis of future educational delivery and facilities planning. Staff Professional Development is crucial to the successful implementation of the educational concepts outlined here.

OVERARCHING PRINCIPLES

- This future-oriented Educational Vision articulates of innovative best and next educational practices, some of which are already in operation in some classrooms at NEMT
- Create a common understanding of this Educational Vision among administrators, faculty, parents, and students to continue shifting the educational model from one that is fairly traditional to one that is more transformed
- Prepare students for success in the 21st century, an emerging world of global competition, uncertain employment prospects simultaneous with unheralded workplace opportunities, infinite access to information, and rapid change in technology



Ch 2 Executive Summary

- Teach 21st century skills at the same time as traditional content
- Build relationships with students, families, and communities through school structure and programs
- Aspire beyond the Common Core and beyond the Massachusetts Department of Elementary and Secondary Education and its Chapter 74 guidelines to do what is best for student learning, and to instill a life-long sense of wonder and purpose. Create independent, life-long learners
- Establish a program of staff Professional Development to support the educational deliveries outlined here

The full Guiding Principles are expressed in Ch 3, Educational Vision.

Learning Modalities

The Visioning Team members identified these as the most effective ways for students to learn:

- Integrated academic and career technical learning
- Small group work/ student collaboration
- Project-based learning
- Social/ emotional learning/experiences while learning the required curriculum
- Internships
- Integrated arts with core academic subjects

See Appendix Ch 5.2 for the full record.

FACILITY CONCEPTS

Places for Learning

The Visioning Team reviewed 13 exemplar schools from the USA, the United Kingdom, and Australia. Working in Table Teams they ranked the schools for appropriateness for the future teaching and learning at the future school.

Essential characteristics of desired core learning space concepts are:

- Learning spaces arranged as Small Learning Communities
- Classrooms are components of “suites of spaces,” supported by other spaces immediately adjacent
- Circulation to be used for learning
- Career technical learning spaces in each SLC, adjacent to academic learning spaces
- Career technical learning spaces in each SLC, adjacent to academic learning spaces
- Classrooms are to be flexible, interconnected, and supported by auxiliary spaces including Collaboration/Breakout/Commons Spaces/Extended Learning Areas
- Interdisciplinary possibilities
- Open, shared presentation areas
- Variety of furnishings, offering students and teachers more choices in supporting learning
- Possibility of student groups working in multiple places under the guidance of the teacher
- Teacher collaboration supported by the facilities, through double sized Classrooms, connections between Classrooms and strategic placement of related functions
- Teacher Planning Centers to support teacher collaboration and sense of community

For a full description of the most appropriate, and least appropriate exemplars, with illustrations, see Ch 4 Facility Concepts and Appendix Ch 5.3.

Overall Facility Relationship Diagram

Workshop participants created concepts for a future new or renovated school. Major functions were drawn as circles, in relative size, and in relative positioning. The concept featured the following essential characteristics:

ESSENTIAL PLANNING CONCEPTS

The design should be organized as follows:

- Integrated (academic and CTE) Small Learning Communities (SLCs) based on National Career Cluster model
- A “kid magnet” spatial concept:

Ch 2 Executive Summary



- The place to go for all students
- Media Center/Learning Commons and Cafeteria at the epicenter of the school
- To be determined whether either or both are “go to” or “go through” spaces
- Administration, Guidance and Nurse at the Entry
- Art and Music near SLCs and an Auditorium
- Inclusive Special Education
- Within each SLC:
 - Academic and CTE learning spaces
 - Extended Learning area shared by all
 - Integrated Teacher Planning Center
 - Learning Stair
 - Special Education Resource Room

PUBLIC ZONE

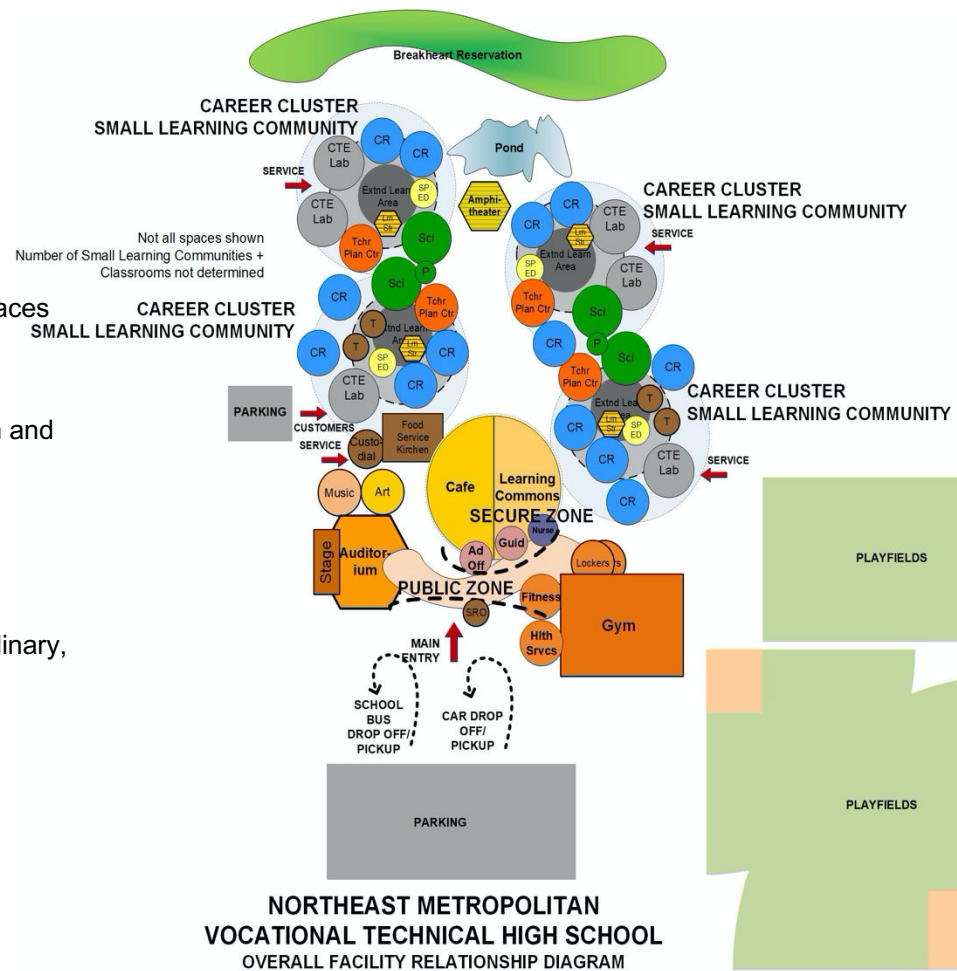
- Public zone with most commonly used community spaces
 - Gymnasium
 - Cafeteria
 - Media Center/Learning Commons
- Ideally giving indoor access to the existing Auditorium and Community Recreation Center
- Security control to rest of the building

OUTDOOR FUNTIONS

- Access to Breakheart Reservation
- Amphitheater
- Parking and access for customers to CTE service: culinary, comitology, auto tech, more
- Service areas for Food Service, Custodial, and CTE programs
- Pond
- Separate bus and car drop-off/pick-up lanes
- Parking for different users:
 - Visitors
 - Faculty and staff
 - Students
 - Customers

The whole group guided the development of the diagram shown on the next page.

The full description of the planning concept is in Ch 4 Facility Concepts.





Educational Vision

INTRODUCTION

This Educational Vision reflects the work of a Visioning Team, approximately 35 teachers, school administrators, school board members, parents, students, trade council members, the owner's project managers, and the architects. Created in three afternoons of intense facilitated workshops it is intended to guide the long-term development of both education and facilities for the Northeast Metropolitan Regional Technical High School (NEMT).

Much of the work was conducted by Table Teams, small groupings of six participants each. They brainstormed, debated, and attempted to reach consensus on most of the defining issues. Each Table Team had the diverse stakeholders evenly distributed to the greatest extent possible.

VISION COMPONENTS

The Educational Vision for future schools is described here through several components:

- **Guiding Principles** establish broad parameters for educational delivery, school structure, and facilities
- **Most Important Concepts for the Future** identifies the best and next practices most important for future teaching and learning
- **Learning Modalities** identifies the most effective and appropriate ways for teachers to reach students with curriculum delivery

GUIDING PRINCIPLES

The *Guiding Principles* presented here were created to express the values, beliefs, and concepts developed by the educator and community Visioning Teams which examined educational trends, best practices, and issues affecting the delivery of 21st century education. These *Guiding Principles* present the essence of that inquiry. They are not policy but they address the overarching themes



Ch 3 Educational Vision

identified by participants. They may serve as a foundation for the future school. As such, they are intended to form the basis of future educational delivery and facilities planning. Staff Professional Development is crucial to the successful implementation of the educational concepts outlined here.

The Guiding Principles are:

Overarching Principles

- This future-oriented Educational Vision articulates of innovative best and next educational practices, some of which are already in operation in some classrooms at NEMT
- Create a common understanding of this Educational Vision among administrators, faculty, parents, and students to continue shifting the educational model from one that is fairly traditional to one that is more transformed
- Prepare students for success in the 21st century, an emerging world of global competition, uncertain employment prospects simultaneous with unheralded workplace opportunities, infinite access to information, and rapid change in technology
- Teach 21st century skills at the same time as traditional content
- Build relationships with students, families, and communities through school structure and programs
- Aspire beyond the Common Core and beyond the Massachusetts Department of Elementary and Secondary Education and its Chapter 74 guidelines to do what is best for student learning, and to instill a life-long sense of wonder and purpose. Create independent, life-long learners
- Establish a program of staff Professional Development to support the educational deliveries outlined here

Educational Delivery

Educational Delivery addresses overarching themes required to provide a 21st century high-performing educational experience for all students at our future school.

INSTRUCTIONAL MODELS

- Develop a social/emotional learning initiative

- Increase student engagement by shifting the teaching model to more active, student centered learning, with opportunities for student voice in their learning
- Employ project-based learning (PBL) on a regular basis
- Group students in small learning teams to differentiate instruction and foster communication, collaboration, and improved social skills, and foster differentiated instruction
- Create a school and community cultures that values flexibility for change
- Position students to learn 21st century skills, especially the “four C’s”, collaboration, communication, creativity, and critical thinking, while simultaneously meeting standard curriculum goals
- Pilot innovative deliveries such as PBL, social/emotional programs, and making things to learn for planned future large-scale implementation

TECHNOLOGY INTEGRATION

Our world is dependent on technology implementation in all aspects of life. Students must be provided with the technological skills and knowledge which will enable them to function successfully in a global context. Technology should include:

- Wireless capability in all spaces in the school building
- Engage computers as part of best, next educational practices when their use gives students more choice in their learning
- Deploy mobile devices but not mobile phones in lieu of desktop devices

Technology must not be viewed as a curriculum add-on, but, rather as an effective tool to be utilized in meaningful instruction that is relevant and rigorous.

Educational Structure

Educational Structure establishes the organizational patterns necessary to group students and teachers in the most effective ways.

ORGANIZATION



Ch 3 Educational Vision

- Position educators to build relationships to better know their students through the strategic placement of learning spaces
- Expand internships with local businesses and institutions for all students
- Encourage and develop team teaching to achieve an integrated curriculum, both synchronously and sequentially

RELATIONSHIPS

- Organize school as Small Learning Communities to support formation of relationships
- Include career technical learning and academic learning in each of those SLCs
- Reference the National Career Cluster framework to organize the SLCs
- Foster student collaboration to build social and communication skills, and the ability to work with others
- Create opportunities for students to grow socially and emotionally while working with others in classroom assignments

CURRICULUM

- Build 21st century skills while meeting traditional curriculum goals
- Create regular opportunities for students to improve their oral communication skills
- Shift from one-subject curriculum delivery to integrated, interdisciplinary curriculum delivery, including career technical with academic
- Integrate arts with academics

SCHEDULES

- Create common planning time for all teachers

Facility Implications

- Support Safety and Security as an integral planning component, not as an “add on” as it has been in the past
 - Create a building plan that offer security and safety despite constant visitors, many of whom will be

customers for student services and active participants in student learning

- Develop overall and learning space planning concepts as flexible platforms for continued change, giving future generations of educators and students the power to easily change the educational model
- Develop Small Learning Communities, learning spaces arranged in National career Cluster Framework-based clusters
- Select furniture that supports collaboration, student decision-making, different learning modalities, and is substantiated by brain research
- Create Teacher Planning Centers to foster collaboration, interdisciplinary teaching, and greater knowing of students by teachers
- Integrate outdoor learning spaces such as an amphitheater and pond
- Create presentation spaces to honor and encourage frequent student and expert visitor presentations
- Minimize circulation spaces that do not also offer opportunities for learning, such as in Extended Learning Areas, Breakout/ Collaboration/Small Group spaces
- Position the Art and Music Studios as close to the core learning areas as possible

MOST IMPORTANT CONCEPTS FOR THE FUTURE

Visioning Team members, working in Table Teams, were asked to identify the most important issues for education and facilities in the future.

The results are outlined here, in order of importance based on frequency of citing in Table Team discussions:

EDUCATION

- Social/Emotional Learning
- Student Engagement
- Project Based Learning



Ch 3 Educational Vision

- Creating Innovators
- Safety + Security in 21st Century Schools

Note that these concepts, collectively, call for a major shift in both educational deliveries and the facilities that support them. Curriculum requirements and standards will remain, but the nature of teacher roles and student activities will change.

See Appendix Ch 5.1 and 5.2 for all responses.

LEARNING MODALITIES

Visioning Team members each individually considered 24 learning modalities, ranging from traditional lecturing and direct teaching to independent study, and ranked them in order of appropriateness.

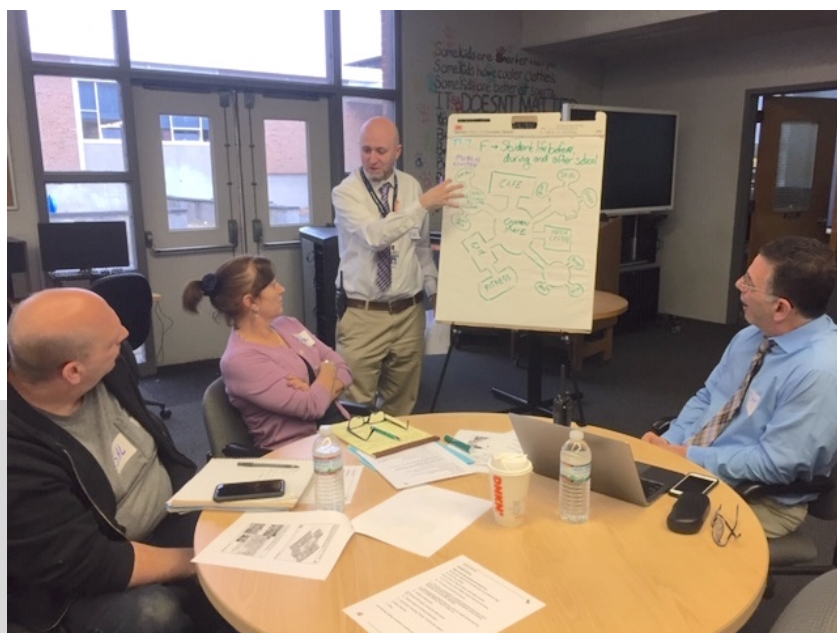
The most commonly cited most effective modalities, in order of importance, are:

- Integrated academic and career technical learning
- Small group work/ student collaboration
- Project-based learning
- Social/ emotional learning/experiences while learning the required curriculum
- Internships
- Integrated arts with core academic subjects

See Appendix Ch 5.2 for the full record.

The whole group guided the development of the diagram shown on the next page.

The full description of the planning concept is in Ch 4 Facility Concepts.



Facility Concepts

AGENDA

The Visioning Team developed concepts for the Northeast Metropolitan Regional Technical High School's (NEMT) future school facility. The concepts are defined through:

- **Most Important Facility Concepts for the Future** identifies the key concepts for NEMT's future facilities
- **Places for Learning**, detailed descriptions of the core learning environments
- **Defined Spaces**, expressing desired characteristics of the most important non-classroom spaces
- **Overall Facility Relationship Diagram**, capturing essential relationship concepts for an ideal school planning concept

MOST IMPORTANT FACILITY CONCEPTS FOR THE FUTURE

Visioning Team members, working in Table Teams, were asked to identify the most important issues for education and facilities in the future.

The results are outlined here, in order of importance based on frequency of citing in Table Team discussions:

FACILITIES

- Small Learning Communities
- Flexible, Varied, Brain Based Furniture

Note that these concepts represent a completely different, non-traditional approach to facility design.

See Appendix Ch 5.2 for all responses.

PLACES FOR LEARNING

The Visioning Team reviewed 13 exemplar schools from the USA, the United Kingdom, and Australia. Working in Table Teams they



Ch 4 Facility Concepts

ranked the schools for appropriateness for the future teaching and learning at the future school.

The results were:

Most Appropriate:

- Ipswich Middle School (Cited by 2 of 4 Table Teams)
- Cristo Rey High School (2 of 4)
- Mt Blue HS/Foster Tech Center (2 of 4)
- New Tech High (2 of 4)

Least Appropriate

- Southampton High School (Cited by 3 of 4 Table Teams)

Most Appropriate Planning Concepts

Essential characteristics of desired core learning space concepts are:

- Learning spaces arranged as Small Learning Communities
- Classrooms are components of “suites of spaces,” supported by other spaces immediately adjacent
- Circulation to be used for learning
- Career technical learning spaces in each SLC, adjacent to academic learning spaces
- Classrooms are to be flexible, interconnected, and supported by auxiliary spaces including Collaboration/Breakout/Commons Spaces/Extended Learning Areas
- Interdisciplinary possibilities
- Open, shared presentation areas
- Variety of furnishings, offering students and teachers more choices in supporting learning
- Possibility of student groups working in multiple places under the guidance of the teacher
- Teacher collaboration supported by the facilities, through double sized Classrooms, connections between Classrooms and strategic placement of related functions
- Teacher Planning Centers to support teacher collaboration and sense of community

Here are representative photos, descriptions, and Table Team comments for the most commonly cited exemplar schools.

IPSWICH MIDDLE SCHOOL

Cited by 2 of 4 Table Teams

Featuring:

- Arranged in “pods” or “clusters” with eight classrooms, a Teacher Planning Center, and a Special Education Resource Room in each
- Each pod is centered around a shared Commons/breakout space
- Classrooms are arranged in pairs
 - Math and science
 - English and social studies
- Paired Classrooms have communicating double doors between them
- Commons/breakout space designed as multi-media presentation space

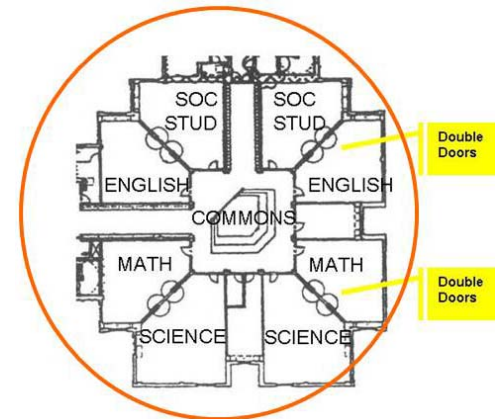


Table Team comments included:

- Connected studios with commons
- Cluster shops with academics – encourages integration

Note: One Table Team cited Ipswich Middle School as “Least Appropriate,” over concern that the design segregated the Small Learning Communities too much



CRISTO REY HIGH SCHOOL

Cited by 2 of 4 Table Teams

Featuring:

- Thematic Small Learning Communities, each for 125 students
- Flowing Circulation/ Collaboration/ Breakout Zone with a variety of furniture
- Garage doors at each classroom



Table Team comments included:

- Flex walls/garage doors
- Allows for flexibility in both presentation of instruction and varying learning styles/modalities

MT BLUE HS/FOSTER TECHNICAL CENTER

Cited by 2 of 4 Table Teams

Featuring:

- Renovated 1960s building with highly separated academic and career tech learning areas reorganized through additions and renovations
- Now features integrated Small Learning Communities, with academic and career tech learning in each SLC

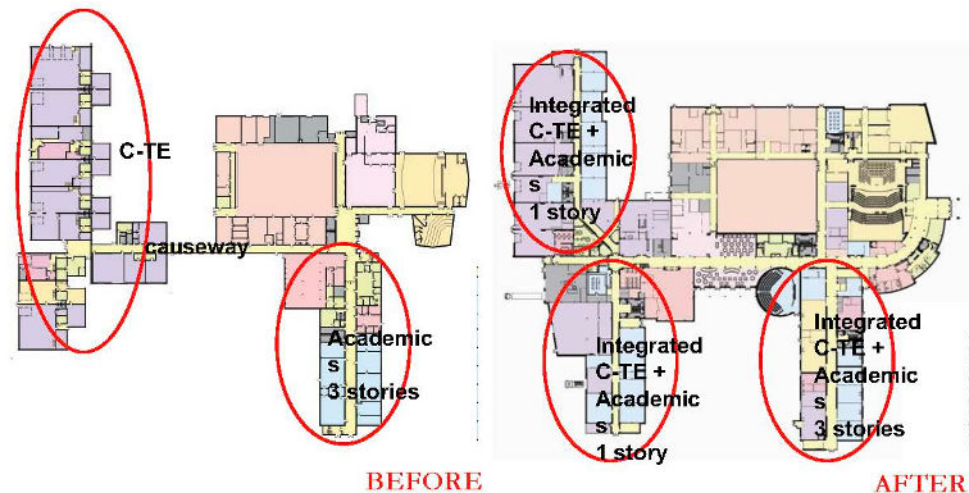


Table Team comments:

- Integrating Academics and CTE
- Fully integrated academics and CTE

NEW TECH HIGH

Cited by 2 of 4 Table Teams

Featuring:

- Double sized classrooms for teachers working in pairs
- Cyber Café at center of the school
- Well-developed outdoor learning spaces
- Each classroom has small group discussion area

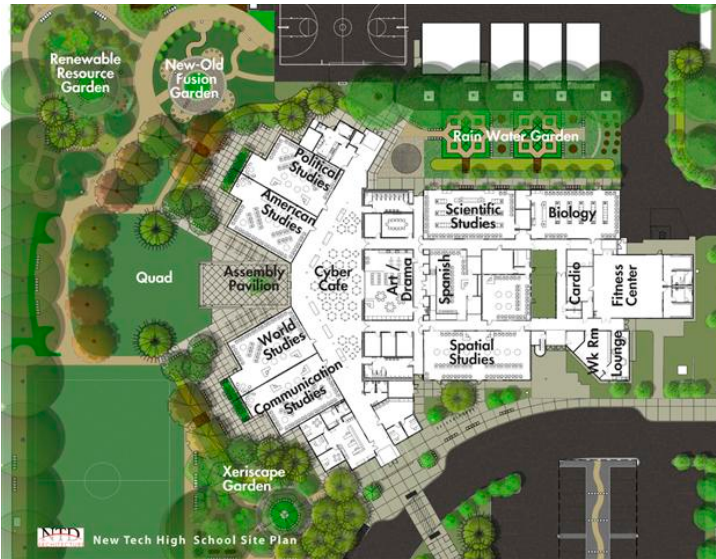


Table Team comments included:

- Cybercafé!
- Outdoor spaces
- Break out space
- Flexibility
- Lounge/presentations
- Communal areas

Least Appropriate Planning Concept

SOUTHAMPTON HIGH SCHOOL

Cited by 3 of 4 Table Teams

Featuring:

- Challenging separations between learning spaces
- Isolated classrooms
- No central focus

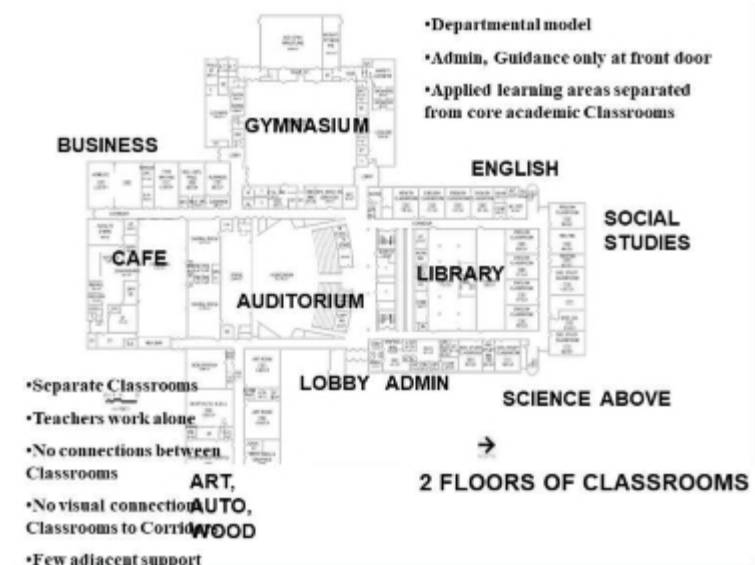


Table Team comments:

- Obviously, we don't like A
- Looks like what we have now
- Traditional – does not encourage collaboration
- Segregated
- Isolated classrooms

Full details of all Table Team responses are in Appendix Ch 5.3.



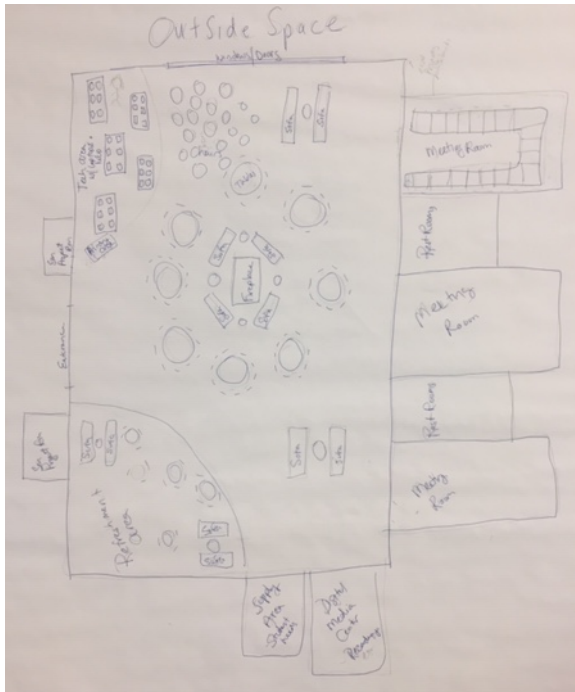
Ch 4 Facility Concepts

DEFINED SPACES

Essential non-classroom spaces were given consideration by the Table Teams. The outlines below represent the most salient concepts.

21st CENTURY LIBRARY/MEDIA CENTER/LEARNING COMMONS

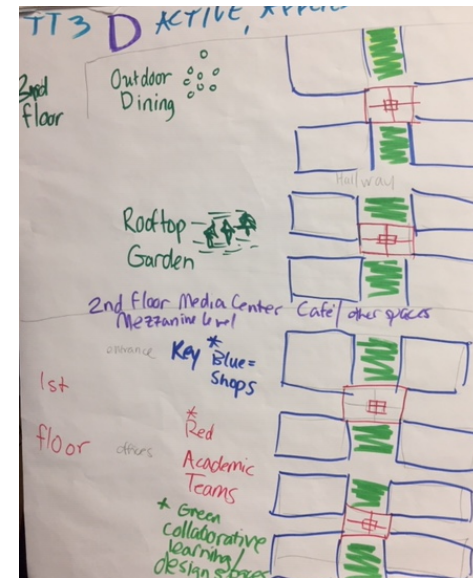
- Windows
- Starbucks



- Computers
- Tables
- Couches
- Comfy chairs
- High top tables and chairs
 - Varied seating arrangement
- Fireplace
- Central hub of building to walk through

- Bathrooms
- Private rooms for quiet study/tutoring
- Meeting rooms (w/phones) set up for presentations
- Presentation space
- Media hub
 - Someone for student tech help
- Access to outside
 - Courtyard
 - Garden
- Digital ticker

SUPPORTING APPLIED/ACTIVE LEARNING, SUCH AS PROJECT-BASED LEARNING, STEM, STEAM, MAKING THINGS TO LEARN, ETC



Drawing Key

- Blue = Shops
- Red = Academic teams
- Green = collaborative learning/design spaces
- 3rd floor
 - Outdoor dining



Ch 4 Facility Concepts

- Rooftop garden
- 2nd floor
 - Media center
 - Café/other spaces
 - Mezzanine level
- 1st floor
 - Entrance
 - others

STUDENT LIFE BEFORE, DURING AND AFTER SCHOOL

Table Team 7

- Public cluster
 - Cosmo
 - Early child care
 - DV
 - Culinary
 - Eating
 - Social
 - Quiet area
- Café
- Common space
- 2 other clusters with eat, social, quiet
- Media center
- Common space
- Gym
- Fitness

- Integrated (academic and CTE) Small Learning Communities (SLCs) based on National Career Cluster model
- A “kid magnet” spatial concept:
 - The place to go for all students
 - Media Center/Learning Commons and Cafeteria at the epicenter of the school
 - To be determined whether either or both are “go to” or “go through” spaces
- Administration, Guidance and Nurse at the Entry
- Art and Music near SLCs and an Auditorium
- Inclusive Special Education
- Within each SLC:
 - Academic and CTE learning spaces
 - Extended Learning area shared by all
 - Integrated Teacher Planning Center
 - Learning Stair
 - Special Education Resource Room

PUBLIC ZONE

- Public zone with most commonly used community spaces
 - Gymnasium
 - Cafeteria
 - Media Center/Learning Commons
- Ideally giving indoor access to the existing Auditorium and Community Recreation Center
- Security control to rest of the building

OUTDOOR FUNTIONS

- Access to Breakheart Reservation
- Amphitheater
- Parking and access for customers to CTE service: culinary, comitology, auto tech, more
- Service areas for Food Service, Custodial, and CTE programs
- Pond
- Separate bus and car drop-off/pick-up lanes
- Parking for different users:
 - Visitors
 - Faculty and staff

OVERALL FACILITY RELATIONSHIP DIAGRAM

Workshop participants guided Frank Locker in drawing an overall school organization diagram. Major functions were shown as circles, in relative size, and in relative positioning.

ESSENTIAL PLANNING CONCEPTS

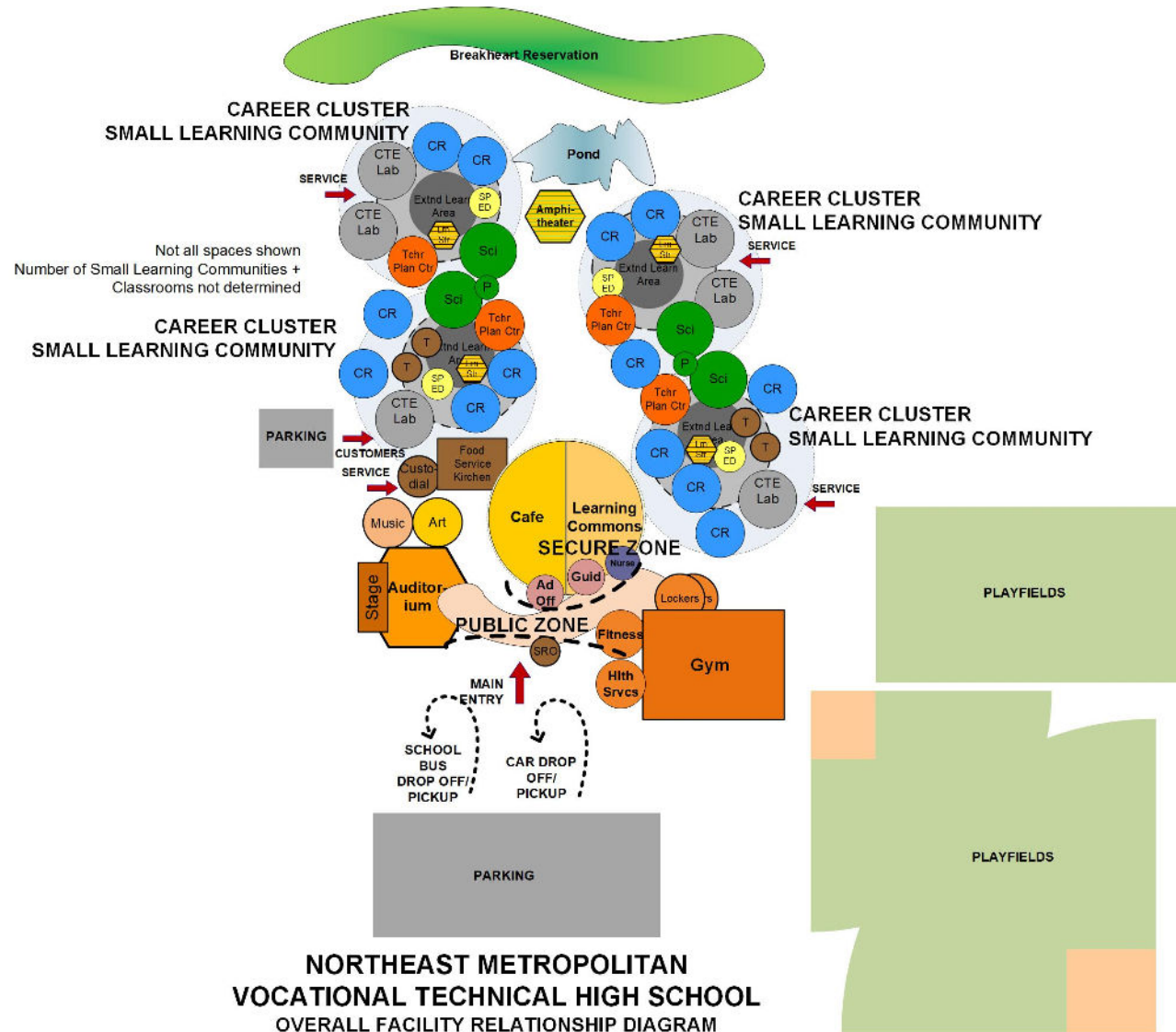
The design should be organized as follows:



Ch 4 Facility Concepts

- Students
- Customers

The whole group guided the development of the diagram shown here:





Workshop Notes Day 1

AGENDA

The first Visioning Workshop was held on 13th February 2020. Notes of all activities follow:

- Discussion of Pre-Workshop Videos
- School Snapshot
- Best + Next Practices

DISCUSSION OF PRE-WORKSHOP VIDEOS

Workshop participants had watched many videos and read one article before coming together, in the spirit of blended learning.

The article was *Wired Magazine*, *How a Radical New Teaching Method Could Unleash a Generation of Geniuses*.

The videos included:

- Ken Robinson, *Why do Schools Kill Creativity?*
- Tony Wagner, *Creating Innovators*
- *Humans Need Not Apply*

Comments from the Visioning Team included:

Ken Robinson, *How Schools Kill Creativity*

- As important as literacy
 - Hierarchy of subject
 - ✓ Arts at bottom
- OK to be wrong
 - Use this in shop
 - Academics too
- The video was done in 2006
 - Disappointment
 - How slow we move in education
- Jillian Lynn, choreographer, dancer
 - Psych said she is dancer
- Not about what you learn but what you do

Tony Wagner, *Creating Innovators*



Ch 5.1 Workshop Notes Day 1

- Teach kids how to solve problems
- Grades don't tell all
- Kids need safety to be innovative

Humans Need Not Apply

- Jobs will shift to service
- Jobs will wane
- Lots jobs in automation
- Low level repetitive jobs decrease
- Average age of plumber in MA – 55
 - Essential jobs
 - High skills, locally based
- Not 1 size fits all
- Academics
 - Focused on common core
 - Should learn more
 - Entrepreneurship in English
- Soft skills for kids needed
 - Entrepreneurship
 - How business is run

Wired Magazine article, *How a Radical New Teaching Method Could Unleash a Generation of Geniuses*

- Paloma was disinterested
 - When self-guided she caught on fire

SCHOOL SNAPSHOT

Superintendent/Director Dave DiBarri outlined key characteristics of learning and teaching as well as history at Northeast Metropolitan Technical High School (NEMT). It included:

- Vocational education was started in Massachusetts in 1906
- In the 1960's there was a wave of regionalization
- In 1967 Northeast Tech was founded
- Early successes
- There were early limitations in cultural attitudes about vocational learning
- Our identity has developed

- We are both alternative to college and road to college
- Difficulties with some high schools in member communities because they see us as competition
 - ✓ Alternative? Choice?
- Important to balance academics and vocational learning
 - ✓ Integration
- NEMT in the Brady/Belichick era
- We have about 1/3 special needs and 504 students
 - At NEMT we have lots success with students on IEPs
- Our graduation rate is high

See Appendix Ch 5.7 for the Snapshot presentation.

21st CENTURY SCHOOLS PRESENTATION

Frank Locker presented on the changing values, goals, and deliveries that characterize the most progressive thinking about schools in the United States, and worldwide, today. Key points included:

- 20th vs 21st century schools:
 - The 20th century was a century of creating efficient schools; the 21st century has been a century of looking for effectiveness in schools
 - 20th century was the century of the teacher; 21st century is the century of the learner
 - The teacher used to hold all the information; now the teacher is the guide
- Research in learning informs us of many effective educational practices
 - Some are gaining popularity
 - Others are not yet in general practice
- Learning is more effective when students apply their learning immediately
- The Multiple Intelligence Theory explains why different students learn best in different ways



- 21st Century Skills Framework offers a clear concept of skills students need for success in our rapidly changing global economy. It establishes:
 - Core, subject-based learning is not sufficient any more
 - Learning relevant 21st century survival skills is just as important, perhaps more important. These include:
 - ✓ Learning and innovation skills
 - ✓ Life and career skills
 - ✓ Information, media, and technology skills
- Craig Jerald was cited as researching the most important traits that business and industry really want – professionalism/work ethic
- Learning should be interdisciplinary, bridging the gaps between subject areas
- Learning should be infused with 21st century themes. These include:
 - Global awareness
 - Financial, economic, business and entrepreneurial literacy
 - Civic literacy
 - Health literacy
- Learning is a social activity. Students learn better when they are in strong relationships with teachers and peers
- The Relevance and Rigor Framework of the International Center for Leadership in Education correlated Bloom's Taxonomy with application, offering a concise understanding of effective learning
- Google's Futurist has identified future new job titles
 - University Dismantler
 - Urban Agriculturalist
- Teachers' work is supported through strong relationships with other professionals
- Schools are looking for more community connections to improve student learning
- Flexible furniture is needed to bring the student the support to learn in a variety of modalities

Individual Responses

Visioning Team members scored the importance of the different issues outlined while Frank was presenting. This page starts a compilation of their scores. Individual comments follow:

Best/Next Practices Presentation PART 1 Responses to issues as presented	Very Important	Important	Don't Know	Maybe	Not Important	Scary to Me
1 History Work + School	8	10	4		3	2
2 Student Engagement	23	4				1
3 Futurist Thoughts	12	8	3	2		4
4 20 th + 21 st Century Learning	18	7	1	1		
5 Student Talk at Dinner	16	7	2	2		
6 Learning Pyramid	13	10	4	1		
7 Gardner: Multiple Intelligences	14	11		1		
8 Personalized Learning	9	11	3	3		2
9 Social/Emotional Learning	12	15				1
10 Relationships: Dunbar's Law, Magic of 150	11	6	7	3		
11 Integrated Arts + Academics	13	12	1	1		
12 STEM/STEAM/Engineering	11	14	1			
13 Computers for Learning	18	7		1		
14 Small Group Collaboration	16	10		1		1
15 Class Time	6	10	7	1	1	1
16 Mastery Transcript Coalition	9	9	5			
17 Creating Innovators	18	8	1			2
18 21st Century Skills/Competencies	23	3				
19 Jerald's Research on 21st Century Education	13	10	2			1
20 Project based learning	21	6	1			1
21 Design Thinking, Making Things to Learn	15	8	3			
22 School Organization	13	8	1	2		2
23a School Organization: Academics in Tech	15	7	1			1
23b School Organization: Thematic SLC's	11	7	5			1
23c School Organization: SWAS	11	6	6			2



- If we lose engagement, we lose the students
- Engagement is the ingredient that presses students beyond the “easy”
- Students are all different
- Engagement will drop in the work force longevity
- Students should want to be here
- Important to generate positive mindset
- Life-long learning
- Students should be excited about learning
- Instant gratification
- Hands on – Merrimack College
- We want kids to come to school

3 Futurist Thoughts

- Concerning
- Loss of jobs
- Not knowing where we will be
- Very important – but I don’t know if this is ultimately what we focus on
 - It is a result
- Where the future jobs are
- Where are the core trades
- Thinking outside the box
- We don’t know what can happen, but it will happen
- Not sure how SPED fits in
- Need problem-solvers and critical thinkers
- What direction do we head to prepare our students?
- Reorganize set up
- SHOMS
- Hard to know what to do with this info

4 20th vs 21st Century Learning

- We have to shift our thinking to match the need
- Need more student-centered learning
- Wow!!! Awesome
- Shift thinking to STUDENT
- Student centered learning
 - Growth mindset
- Schools need to be more focused on students
- Social/emotional?

- Must be student-centered
- Project-based learning (gets academic side to be mirror of career tech side)
- Collaborative learning
 - Teams
 - Groups
- Sense of pride/shame
- System will not adjust
- Where we have been -> going
- We definitely need to embrace this
- Integrated/interdisciplinary learning

5 Student Talk at Dinner

- If/when parents are engaged, students engagement increases
- Early family dynamics
- Will help us in teaching
- This is engagement realized
- It’s what stokes the fire
- Help parents learn how to do this
- What are students learning
- What are students interested in?
- Mostly voc.
- A great challenge even here where kids can talk about career tech
- Parents aren’t home
 - Phones at the table
- What students value
- Can reveal level of engagement
- More importantly is family unit together for dinner!!!

6 Learning Pyramid

- Pyramid might call to change
- Engagement and doing go hand-in-hand
- Keep students engaged
- Not all learn the same
- Move more to CTE teaching methods
- CTE uses these methods
- Our strengths fall in different places



- Again, need to move academic side to the lower end of pyramid
- Old but so important
- We are emphasizing the higher retention methods

7 Gardner: Multiple Intelligences

- Increases student engagement if given opportunity to use their natural instincts
- Nice to have an understand of each
- Good to think about but Gardner's understanding isn't the only way of looking at intelligence
- Utilize and integrate student strengths
- Combine to enhance
- Need to understand how this works and how to provide a building that supports it
- Learning strategies
- Mixed results
- Reach all students

8 Personalized Learning

- Everyone learns differently
- Students would have a vested interest in learning
- So important but this is something that would require ALL teachers to change ALL that they do
- Personal growth and creativity
- Individualized learning should be goal for every student
- How do you do this in bigger scale?
- Could evoke new ideas
- We all learn differently
- Not sure realistic?
- Lack of initiative/responsibility
- Work towards independence

9 Social/Emotional Learning

- Cannot learn if you are not in a psychologically safe space, also very important soft skills
- Good to measure success other than the...
- Self-regulation and grit are essential!
- It defines who you are
- Social skills are a lost art

- SEL in schools is critical to student success outside classroom
- 100% agree
- Society has changed
- Be able to understand yourself
- School has to be a place where this is recognized and supported
- Lack of self-awareness
- Relationships with others

10 Relationships: Dunbar's Law, Magic of 150

- Relationships are important, just don't know how it applies
- Students would feel more comfortable
- I'd need more of an understanding of why this is important
- Interesting – need to learn more
- There are studies that show the importance of building relationships
- Happens on the career tech side – how to make it work on academic side?
- How do I have my school of 1200-1600 feel like a school of 200?
- Should be
- Build relationships – stop punishing everyone
- Little too different
- Preps student for relationships/work place
- Seems to make sense

11 Integrated Arts + Academics

- Love this!
- How can I use space to move, sit, think and collaborate
- Some students learn differently
- Should have room for teaching
- Collaborative learning and teaching are essential
- Student and teachers need space
- Help students understand learning from multiple modes
- Provides diversity and acceptance
- Being able to express and be active
- Shop (I.P.O. Art)/with academics
- Much needed but typically not part of vocational education
 - What this new school to have this component



- Create space to do so
- Maybe difficult here – little music or arts
- Outdoor classroom and naturalistic learning

12 STEM/STEAM/Engineering

- Prepare students for the work force
- Needed in our schools
- So connected to all we do!

13 Computers for Learning

- How students learn today
- Or whatever the technology of the future is necessary to prepare our students for the world they will move into after high school
- 21st Century skills

14 Small Group Collaboration

- Need to do this in shop
- How do you group kids – best
- Preparing for collaborative work force
- Learn from each other
- Moving from rows
- Students help learn together
- Collaboration is essential
- Develop ideas
- Class size?
- Necessary skill for future
- Most employers want employees who can collaborate and work together
- Can't do it now

15 Class Time

- Prefer a longer time in CTE
- Would love shared/collaborative learning time with academics and shop
- We have to change our approval to have...
- I don't think longer classes help learning
- Class time is irrelevant – it's what is done in the class that matters
- Attention span

- We have been in multiple transitions and need the right answer
- Depends on what's being taught and how it's being taught
- 70+ minutes?
- Career tech time is 5 1/2 hours
 - Where does academic time fit in this picture?
- Inconsistencies?
- Open ended
- We have full-day shop time

16 Mastery Transcript Coalition

- Multidimensional tools would be great
- This will help increase student achievement for the future
- Need time to see if it is really being accepted
- Critical thinking imperative to real world
- Love the idea!
- Key elements to student success
 - How we approach
- Alternative to SAT
- Would love to move away from standardized testing
- SAT is not good enough
- Yes please!

17 Creating Innovators

- Yes! Let's find synergy in CTE and academics – project work
- Important to create a work force for the future
- This seems incredibly hard to do in the face of the DESE
- Learning through doing
- What we can do and accomplish
- Learn to apply/use what we learn
- Teacher delivery
- Makes future leaders
- Very different to ignore curriculum

18 1st Century Skills/Competencies

- Resilient! Life-long learner! Critical thinking!!! Thumbs up!
- Focus on skills students need
- 4 C's are still not being taught!
- Life skills and creativity



- Make better citizens
- Students require these concepts
 - Communication #1
- It's what the future is all about
- But need to be fluid as we move forward into the century
 - 4 C's are most important
- Future centered
- Problem solving skills/life a must
- Emphasis on skills (vs. knowledge)
- Deeper learning

19 Jerald's Research on 21st Century Education

- Professionalism
- Reinforces what skills students need
- Literacy, literacy, literacy!
- Vital to student success
 - Integrate CTE
- We need to integrate some views
- Portrait of a graduate
- Important to our graduate
- 21st century THEMES!

20 Project Based Learning

- Would love to do more collaborations with other shops too!
- Students utilize critical thinking skills and innovation
- Promotes learning and thinking about plans
- Same concerns as with personalized learning – ALL teachers would have to change ALL they do
- It's both – I think it's essential but it has to be in moderation
- Personal happiness for students
- Teach work very important in workforce
- Importance of career/academic integrated projects
- CTE requirement
- There's more to learn than it may actually seem. Remember it
- NEED
- Oral communication is written communication
- Creativity and innovation
- Collaboration and professionalism
- Real world experience

- Especially appropriate for N.E.M.T.
- Learning and innovation skills

21 Design Thinking, Making Things to Learn

- 5 Dangerous Things Kids Should Do
- Making projects
- Synergistic
- Design methods
- Students have a chance to be creative
- Very good idea
- Need time to see if it is really being accepted – moderation
- Exposure to different things
- Students pay attention to things one usually wouldn't
- "Tinkering school"
- Experience?
- Exposure in Fr. Exploratory/CTE
- Can be effective here

22 School Organization

- Think it depends on the organization (resources? space?)
- As we shift to...we need to restructure school
- Increased collective efficacy!
- Impacts student achievement
- Want to get more info on the examples presented
 - Intrigued
- What does this look like?
- Adjacencies matter
- Unity!

23a School Organization: Academics in Tech

- Yes!
- Nice to align academic teachers with tech
- Good idea for shops
- Incredible but seems very daunting!
- Communication and collaboration between teachers
- Love this!

23b School Organization: Thematic SLCs

- Would be nice to set up schools to enhance collaboration
- Incredible but seems very daunting!



- Needed in a school like this
- Builds relationship between teachers
- Want a lot more info
- Important for building relationships

23c School Organization: SWAS

- Changing the school structure may have some push back...
- It is very important to locate things together
- Incredible but seems very daunting!
- Want a lot more info

24 21st Century Schools

- Sizes = relationships
- Cluster classrooms with CTE shops
- Design school to support new concepts

25 Safety + Security in 21st Century Schools

- Clusters allows for better success to stairs and halls
- As time goes on safety and safeness is harder
- Students will learn better if they are safe
- Vital
- Yes!

26 Flexible, Varied, Brain Based Furniture

- Allow for room to move without disturbing
- Comfort = learning
- These spaces would require a complete overhaul of the curriculum we currently use!
 - Interdisciplinary becomes essential!
- Students should be comfortable

27 21st Century Learning Studios

- ? Classroom management
- Different areas for different purposes
- These spaces would require a complete overhaul of the curriculum we currently use!
 - Interdisciplinary becomes essential!
- Classrooms should reflect modern work places

28 Extended Learning Areas

- Good for out of class purposes
- These spaces would require a complete overhaul of the curriculum we currently use!
 - Interdisciplinary becomes essential!
- Teaching and learning in different spaces
- Useful

29 Teacher Planning Centers

- We have one but not too used
- Allows teachers to socialize and discuss
- Staff is molding the future
- Content and student planning
- Collective efficacy!
- Teachers need a place to work and collaborate
- Space needed for collaboration

30 Small Learning Communities

- I like example
- Love presentation area
- Relationships, communities
- Promotes collaboration but will teachers feel comfortable
- Not sure how it would work

31 End of the Library as We Know It Today

- No more hall passes/class disruptions
- Library is outdated – most evolve
- Nice concept
- Teachers and students will extend their classroom
- Internet took over
- Would make sense

32 End of the Cafeteria as We Know It Today

- We do presentations in café
- Students don't tend to respect
- Promote socializing
- Something different
- This is really important!
- I like the café connected to building



33a End of Isolated Teaching: Blue Pont

- We teach in collaboration in shop
- These spaces would require a complete overhaul of the curriculum we currently use!
 - Interdisciplinary becomes essential!
- Modeling collaboration will be a good example to students
- Makes sense
- Schedule issues?
- Global studies (language arts and world history) Yes!!!
- American studies (language arts and US history)

33b End of Isolated Teaching: New Tech Network

- Want more collaboration with academics
- “Interdisciplinary”
- ALL great ideas
 - Not certain how to apply to CTE H.S.
- Might be hard to sustain
- Global studies (language arts and world history) Yes!!!
- American studies (language arts and US history)

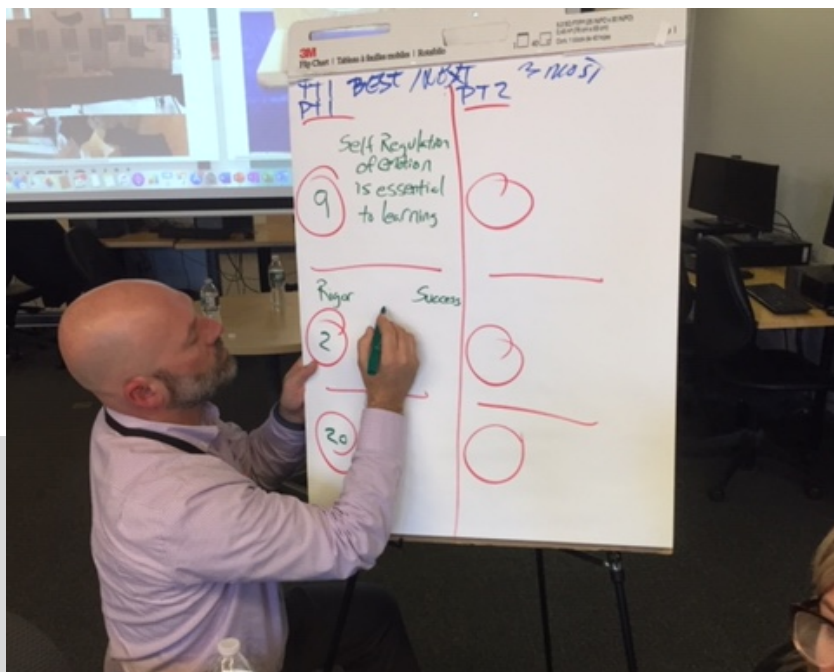
33b End of the Classroom as We Know it Today:

Wooranna Park + Milan Center for Innovative Studies

- Design based on learning activities in a collaborative teaching environment
- Like glass walls
- ALL great ideas
 - Not certain how to apply to CTE H.S.
- Not a bad concept
- Interesting concept
- Nice variety of spaces
- Global studies (language arts and world history) Yes!!!
- American studies (language arts and US history)

Additional notes

- Shift Ed – David Houle



Workshop Notes Day 2

AGENDA

The second Visioning Workshop was held on 24th February 2020.

Notes of all activities follow:

- Best/Next Practices
- School in 2040
- Student Success in Life
- Learning Modalities
- Integrating the Curriculum
- Who is in Charge Here?

BEST/NEXT PRACTICES

Visioning Team participants worked in Table Teams to discuss the ranked individual responses to the presentation on Day 1, and determined these to be the most important issues for NEMT:

BEST/NEXT

3 Most Important

Table Team 1

- Part 1
 - # 9 Social/Emotional Learning
 - ✓ Self-regulation of emotion is essential to learning
 - #2 Student Engagement
 - ✓ Rigor <->Engagement->Success = Learning
 - #20 Project Based Learning
 - ✓ Hands-on success
- Part 2
 - #26 Flexible, Varied, Brain Based Furniture
 - ✓ Variety allows for variety in teaching
 - #30 Small Learning Communities
 - ✓ Facilitates 21st Century Learning
 - #25 Safety + Security in 21st Century Schools
 - ✓ Of course

BEST/NEXT

3 Most Important

Table Team 2

- Part 1
 - #21 Design Thinking, Making Things to Learn



- ✓ Encourages:
 - Creativity
 - Problem-solving
 - Critical Thinking
- #18 21st Century Skills Competencies
 - ✓ Encourages:
 - Creativity
 - Problem-solving
 - Critical Thinking
- #20 Project Based Learning
 - ✓ Increase student engagement
 - ✓ Cross-curriculum
- Part 2
 - #28 Extended Learning Areas
 - ✓ Variety of space for diverse activities
 - #26 Flexible, Varied, Brain Based Furniture
 - ✓ Flexibility
 - #30 Small Learning Communities
 - ✓ SLC = Shop
 - ✓ Better adult-student ratio
 - ✓ Allows learning at own pace

BEST/NEXT **3 Most Important** **Table Team 3**

- Part 1
 - #18 21st Century Skills/Competencies
 - # 17 Creating Innovators
 - #20 Project Based Learning
- Part 2
 - #30 Small Learning Communities
 - #26 Flexible, Varied, Brain based furniture
 - #29 Teacher Planning Centers

BEST/NEXT **3 Most Important** **Table Team 4**

- Part 1
 - #17 Creating Innovators
 - ✓ Need thinkers and problem solvers

- #20 Project Based Learning
 - ✓ Collaboration
 - Need to work together on projects
- #9 Social/Emotional Learning
 - ✓ Need to be able to function SE when entering world – increase in anxiety
 - ✓ Get out of isolation
- Part 2
 - #25 Safety + Security in 21st Century Schools
 - ✓ Connecting with Social/Emotional Learning
 - Need to feel safe to learn
 - #30 Small Learning Communities
 - ✓ Collaboration
 - #33a End of Isolated Teaching: Blue Tech and #33b End of Isolated Teaching: Forest Ave
 - ✓ Get out of isolation

BEST/NEXT **3 Most Important** **Table Team 5**

- Part 1
 - #2 Student Engagement
 - ✓ Create excitement in learning
 - ✓ Buy in/motivation
 - #17 Creating Innovators
 - ✓ Problem solving
 - ✓ Higher order thinking
 - ✓ Create students that can step out of their comfort zone
 - # 9 Social/Emotional Learning
 - ✓ Students can't learn if they don't feel safe
- Part 2
 - #25 Safety + Security in 21st Century Schools
 - ✓ Safe space
 - Students
 - Staff
 - Parents
 - #26 Flexible, Varied, Brain-Based Furniture
 - ✓ Comfortable area to learn
 - ✓ Flexibility to vary groups



- #30 Small Learning Communities
 - ✓ Opportunities for students to work collaboratively
 - ✓ Create/strengthen relationships

BEST/NEXT

3 Most Important

Table Team 6

- Part 1
 - #2 Student Engagement
 - ✓ Student engagement needed
 - #9 Social/Emotional Learning
 - ✓ Self-awareness
 - ✓ Empathy
 - #14 Small Group Collaboration
 - ✓ Retention
 - ✓ Collaboration
- Part 2
 - #28 Extended Learning Areas
 - ✓ Promote collaboration
 - ✓ Remove space restrictions
 - #30 Small Learning Communities
 - ✓ Social interaction
 - #27 21st Century Learning Studios
 - ✓ Ability to learn abroad
 - ✓ Technically based, tech driven

BEST/NEXT

3 Most Important

Table Team 7

- Part 1
 - #2 Student Engagement
 - ✓ Coach-ability
 - ✓ Their attention and focus
 - #9 Social/Emotional Learning
 - ✓ Thrive, despite the feelings
 - #17 Creating Innovators
 - ✓ "there is no box"
- Part 2
 - #28 Extended Learning Areas
 - ✓ The environment conducive to success

- #26 Flexible, Varied Brain Based Furniture
 - ✓ Change the body language
- #30 Small Learning Communities
 - ✓ More depth from smaller numbers

SUMMARY

The visioning team sanctioned these issues as most important for the future of NEMT

Part 1

- #9 Social/Emotional Learning (cited by 5 of 7 Table Teams)
- #2 Student Engagement (4 of 7)
- #20 Project Based Learning (4 of 7)
- #17 Creating Innovators (4 of 7)
- #25 Safety + Security in 21st Century Schools (3 of 7)

Part 2

- #30 Small Learning Communities (cited by 7 of 7 Table teams)
- #26 Flexible, Varied, Brain Based Furniture (5 of 7)

SCHOOL IN 2040

Visioning Team participants had looked into the long-term future as homework. This was the challenge:

DEFINE SCHOOL IN 20 YEARS

Answer as many of these questions as needed to create your concept of future school.

1. What will students at our school be doing in 20 years?
 - a. What is "a day in the life of a student?"
 - b. If they can learn content through the internet, why come to school?
2. What will faculty/staff at our school be doing in 20 years?
 - a. What is "a day in the life of a teacher?"



- b. What is the teacher role?
- 3. Community?
 - a. How will the community be involved in our school? How will community use our school?
 - b. How will our school be involved in the community? Will learning happen there? How?
- 4. Facilities: What does this imply for facilities?

Visioning Team members shared their thoughts about school in 20 years in a whole group discussion.

2040 Group Discussion

- MS and HS – more like college
 - Less classroom times
 - Less traditional classroom activities
- Students
 - Self-directed
 - Self-governing
 - PBL
 - Collaboration with local alums
- Students greater voice
 - Interests and learning projects
 - Choice of tech curriculums
- More augmented reality
 - Virtual reality
- UR will be norm
 - Field trips
 - ✓ Easier – cost less quick
- Teaching online
 - Could alter student-teacher ratios
 - But collaborative needed
 - ✓ Skype
- Well-rounded students
 - Community of school
 - ✓ Socializing
- On-line – Head Start
 - But cutting is physical

Here is a record of their individual thoughts:

1. WHAT WILL STUDENTS AT OUR SCHOOL BE DOING IN 20 YEARS?

A. WHAT IS “A DAY IN THE LIFE OF A STUDENT?”

- As digital/tech natives – work as tech savvy, demanding, confident employees able to collaborate, have a voice, and adjust to any situation
- Working half day
- Group discussion based on interests
- Using mentor rather than a teacher
- Much more hands-on technical with touch screen TV's
- Many small to medium-sized groups of kids learning, teaching, building, and not just busy but productive
- I believe we will have a lot of internet included in our classrooms
- Students will be able to look up most of the assignments and information needed to learn the needed materials
- Learning to learn, to hone skills
- Being challenged by and motivated to learn their academic and vocational curriculum
- I think grade, middle and H.S. will resemble more of a college model, less “classroom” time, more individual learning, peer groups, collaboration
- Working using 21st century skills, hybrid type of learning
- Similar to today with a difference in educational delivery. Delivery will be modified/individualized by increased assessment date. Students education will be centered on where they are at (much like elementary is now)
- Well it starts later for starters
- Project based learning
- Collaborating with their peers, face to face, or using some type of social media platform
- Current – this needs to look more like the CTE classrooms
 - ✓ Academic week



- (6) 58 min. classes
- A lot of sitting in rows
- Note-taking
- Testing (traditional)
- ✓ CTE week
 - Hands-on work
 - Some outside building work
 - Collaborative work
- Probably flexible schedules, not everyone in school building at same time
- More group activities, fewer “classes”
- Students in smaller cohorts (teams)
- Working independently and collaboratively on projects
- Teacher aligned as supervisors
- Students will be self-governing and directing course work. They will take ownership of their work and work closely with alumni to transition from HS to lifelong job training

B. IF THEY CAN LEARN CONTENT THROUGH THE INTERNET, WHY COME TO SCHOOL?

- Collaboration
- Technical education – students will want their learning experience to meet their interests
- Want to have a greater voice in their education
- Social interaction
- Modeling of social norms
- So the teacher can help to give real world examples and relatable notions
- The beauty is in learning together and building community, which is missing more and more
- In out tech environment and with trades we will need to learn the information and perform projects and live work to see how well students are retaining the information given
- Personal relationships
- Some students could learn some content via internet however the majority of our students are kinesthetic

learners and need to participate in hands-on active instruction and practice

- Vocational students need mentors/instructors to build and refine skills
- So they can develop social skills, friendship and have a safe place to grow as a learner and future leader
- Face to face, human connection
- The rich conversation and collaboration are as essential to learning as taking in data
- For human engagement
- To learn empathy
- There is always a need for a qualified expert in a particular subject
- Need to do something with content, not just rote memorization
- Need guidance and correction, explanations for the “whys”
- Work collaboratively to problem-solve and think critically
- For socialization, collaboration
- For access to resources
- To collaborate with other students and teachers
- Socialization in person helps to build good communication skills and promotes collaboration
- Students will learn from others (peers, teachers (modeling)) and have a safe place to practice for future trade skills

2. WHAT WILL FACULTY/STAFF AT OUR SCHOOL BE DOING IN 20 YEARS?

A. WHAT IS “A DAY IN THE LIFE OF A TEACHER?”

- Small group collaboration
- Teach in a flexible, personalized format.
- Since higher levels of thinking and learning require more student ownership, education will become more project-based learning to foster higher levels of thinking and learning
- Facilitating, challenging/probing questions, looking how to engage



- Giving more feedback and assurance instead of actual teaching
- Younger LOL!
- More diverse
- Happier
- Most of the information given on the internet is just that – information
- We will need to observe students doing projects, not much different in today's role
- Demonstrating a strong work ethic to our students
- Providing experiences needed for student growth
- Providing instruction and practice to utilize the latest technology and techniques
- I think teacher's will become more of a facilitator, there to guide and mentor, and help problem solve
- Engaging with communities and providing support for job opportunities
- More of a facilitator of data and examiner of assessments than currently
- Flexible schedule
- Team teaching
- I would think that the curriculum planning piece would be more stream live with the use of computers
- Academic week
 - ✓ Teachers working with classes of students in major subject areas
- CTE week
 - ✓ Teachers teaching students the skills necessary for the particular technical area and students practicing and applying those skills
- Coaching
- Guiding often remotely, electronically
- Not 8-3pm schedule
- Morning sessions
- Supervision

- Wrap-up
- Teachers will help curate student work and guide students like librarians to help them validate resources
- Teachers will greet students and assist them to their workgroups, facilitate group work and provide opportunities to take a different perspective

B. WHAT IS THE TEACHER ROLE?

- Mentorship
- More entrepreneurial, collaborative, creative, innovative teaching environment
- Having more technology-focused classroom
- Stay up to speed on latest digital/technology trends
- Possibly allow students to choose what they learn, how they learn, and what projects they participate in
- Connect/engage with students via social media, online communities
- More social/emotional
- To guide the students and challenge them into doing work that enhances their knowledge
- To facilitate and lead ONLY when needed
- Our role will be the same for performance but the students will have 24-hour access to the information
- Creating an environment that students are able to learn, motivated to learn and proud of their accomplishments
- To be a role model
- To inspire, mentor, coach, motivate, guide and teach
- Social/emotional support
- Teachers will be more like a "tutor" as seen in British colleges
- Examine data
- Set student schedules/learning plan daily
 - ✓ Adjust according to motivational needs



- Academic role model, coach
- Experts in field
- The teacher will be more of a moderator, sing self-paced instruction
- Facilitator, guide
- Guide, editor, reviewer of student performance
- Facilitator
- Mentor
- Consultant
- A guide to help students navigate and apply information available to them
- Teachers will help curate student work and guide students like librarians to help them validate resources
- Teachers will greet students and assist them to their workgroups, facilitate group work and provide opportunities to take a different perspective

3. COMMUNITY?

a. HOW WILL THE COMMUNITY BE INVOLVED IN OUR SCHOOL?

- Intern at companies, mentor marginalized youth or collaborate in large groups
- Create more opportunities for students to gain useful technical skills through real-world application
- On the job training
- Real world examples
- Industry standards and application
- Education will be more out of school; the classrooms and more real-life learning
- They will be represented through the projects to tackle throughout the school year
- Hopefully this will mean community will be involved more between employers, night classes, and wanting to be involved in our young students education
- I hope they will be able to visit the school to participate in shop/academic projects such as blood

pressure clinics, table clinics, theater performances, to provide services for

- ✓ Community members
- ✓ Lunch
- ✓ Beauty treatments
- ✓ Auto care
- ✓ Dental care...

- Go out into the community to schools and provide education to students, community service with populations in need
- Support facilities
- Support students
- Co-op
- Less active than today
- Vocational opportunities
- Volunteer opportunities
- I don't know if this will change much?
- Continue to give students real-world experience
- Hiring interns
- Serving on advisory committees
- Businesses more involved
- Parents continue to be involved
- Stakeholders more involved
- Community will be able to access and benefit from vocational shops
- The community will have invested stakeholders that directly tie into the jobs we train for

b. HOW WILL OUR SCHOOL BE INVOLVED IN THE COMMUNITY?

- Simulate real world and then experience real world
- The school will be out in the community
- Our co-op program is growing now and I think this will be much larger in the future
- I hope they will be able to visit the school to participate in shop/academic projects such as blood pressure clinics, table clinics, theater performances, to provide services for
 - ✓ Community members
 - ✓ Lunch



- ✓ Beauty treatments
- ✓ Auto care
- ✓ Dental care...
- Go out into the community to schools and provide education to students, community service with populations in need
- Have students working on and with the public with our services
- Co-op and alumni connections
- More active with increased learning/job training happening in the community
- Vocational opportunities
- Volunteer opportunities
- Doing more community-based projects (CTE)
- Life-long learning center
- More community projects
- More contact with the community for information
- Through various projects – throughout the district students will gain real hands-on experience
- Our school will work in tandem with the community to fill gaps that industry does not have

4. FACILITIES: WHAT DOES THIS IMPLY FOR FACILITIES?

- Revolutionize classroom space to inspire most impactful work (like WeWork, Staples Connect) – build a better community with smaller coworking spaces. Redefining success
- Not needed for 7-3 classrooms, more as a resource center and drop-in center to collaborate
- More open more windows
- More connection to the elements of seasons
- More inviting – less walls
- We should have state-of-the-art facilities and I hope we can gauge what the jobs of the future will be 20 years from now
- Clinic facilities that can accommodate community members
- Technology that is current in industry with an eye to the future

- Safety – an environment that can maintain the safety of all students and staff at all times
- Enough parking for staff, students and members of the community
- Student restrooms in common areas/visible areas (ex: café)
- Outdoor student areas
- Classrooms labs that will be used to challenge students
- Facilities will need to support community coming into building almost like a mall entrance
- Updated classrooms and shops
- Must press increased collaboration/community to offset the ability to access information so easily and call it learning
- They must be adaptable for what is unknown
- More openness
- Inter-disciplinary
- Not sure
- Academic classrooms need to allow for collaborative space, learning space etc – flexibility
- CTE space needs to also be flexible, but constantly updating to newest in the technical field
- Flexible
- Durable – able to be used intensively around the clock, around the calendar
- Flexible, accessible, safe
- The new facility should be set up in a way to promote collaboration and hands-on not only for shops, also academics
- Communities have an outstretched hand in the work we do. They may even need us to be more present in their schools?



STUDENT SUCCESS IN LIFE

Workshop participants also completed this challenge as homework:

DEFINE STUDENT SUCCESS IN LIFE

- A. Define success in life for our students
- B. Identify the competencies and attributes our students will need to achieve that success

ACTION

- C. What do our students need from us to be in successful in life?
- D. Identify what students educators be doing in school
- E. Identify what students should be doing in school
- F. And out of school
- G. What should parents be doing?

They discussed the issues as a whole group. Here are their thoughts:

- Problem solving is critical
- Kids need collaboration skills
- Need healthy routines for body, mind, spirit
 - During gym
 - ✓ Non-traditional PE
 - Classroom – meditation
 - In shops
 - ✓ Ad hoc advisor advisee
- Exposure and diversity at NEMT
- Students need to understand own strengths
 - Mindfulness

Their individual responses follow.

SUCCESS

A Define success in life for our students

- Understanding strengths
- Kind and productive citizen
- Financial freedom
- Life-long learners
- Graduation

- To be contributing citizens and provide a good life for themselves (family)
- Autonomy
- Ability/desire to self-sustain
- Handling hardship and learning how to thrive
- Retention of information
- Positive placement
- Economic freedom
- Economic independence
- Self-sufficient/independent/productive members of society

B Identify the competencies and attributes our students will need to achieve that success?

- Competencies
 - ✓ Communicate competence
 - ✓ Technology
 - ✓ Literacy
 - ✓ Creativity
 - ✓ Mastery in vocational shops
- Attributes
 - ✓ Critical thinkers
 - ✓ Open-minded, open-hearted
 - ✓ Curiosity
 - ✓ Self-discipline
 - ✓ Collaborative
- Take responsibility for their learning
- Prioritize responsibilities – time management
- Develop healthy routine for body, mind, and spirit – discipline
- Develop grit and “stick-to-it-ivness”
- Develop good communication and problem-solving tools
- Be tolerant of others
- Manage their emotions
- Take risks
- Embrace failure
- Give back
- Create a healthy mindset



- Learn in common sense
- Adaptability with specialization and connection to multiple disciplines
- Critical thinking
- Creative problem-solving
- Ask good questions, have a good background knowledge of the subject, respect other people's point of view
- They will need to retain and master the information needed to perform their jobs daily
- Problem solvers, motivation
- Strong work ethic confidence, knowledge, soft skills, relationships
- More opportunities to connect to each other
- More real-life experiences to learn, to fail and to better know who they are and who they're not
- Social skills, empathy, common sense, self-awareness
- Resilience
- Grit
- Resourcefulness
- Passion
- Curiosity
- Drive
- Thoughtfulness
- Tenacity
- Problem solving
- Inventiveness
- "If there is a will there is a way"
- Pride, commitment

C What do our students need from us to be successful in life?

- A safe environment to take learning risks, ponder new concepts, be exposed to a different point of view
- Emotional support
- Direction
- Guidance
- Opportunity

- Mentoring/coaching
- Encouragement
- To understand that we need to learn from our mistakes
- Solid base!
- To model the above attributes
- Wisdom, love, kindness
- Modeling of soft skills
- Students need our confidence in them
- Showing, not telling

D Identify what educators should be doing

- Trying new approaches to teaching and learning
- Examining student work together
- Collaborating with other teachers
- Expanding (improving) curriculum
- Question grading practices
- Allow redemption after failure
- Educators are with their student more than they are with their parents...we are raising them, they need support, kindness and empathy from us
- Working to become more facilitators of learning than direct instructors
- Mentoring/coaching
- Encouragement
- Use a lot of formative assessments
- Making sure students are mastering skills
- Hold students accountable
- Being compassionate to the struggles and patient in our approach to help them
- Learn useful information
- Directing
- Facilitating
- Curating
- Showing, not telling

E Identify what students should be doing in school

- Engaging with teachers, peers, administrators
- Testing new theories of learning
- Reading (is always good homework)



- Be exposed to art, music
- Students should be preparing for life. They need more practical skills, collaboration
- Struggling with engaging/rigorous content in multiple disciplines
- Collaborating
- Hands-on, project-based learning
- Relevant, real-world applications
- Mastering skills through practice and application
- Learning to collaborate, critically think and problem-solve
- Participating, putting forth effort, responsible learners
- Learning and sharing with others
- Listening, engaged, asking questions
- Collaborating
- Testing/failing (trialing)
- Demonstrating
- Verbalizing
- Showing up, knowing the value of education

F And out of school

- Fresh air
- Exercise
- Sleep
- Reading
- (Meaningful employment)
 - ✓ Also a definition of success
- Out of school they should be developing healthy interests, applying themselves to their studies and developing good friendships
- Struggling with engaging/rigorous content in multiple disciplines
- Internships
- Extra-curricular
- Applying the skills they've learned'
- Applying what they're learning
- House chores, empathetic listening/talking
- Active community members
- Responsibility, work, care taking, exercise

G What should parents be doing?

- Providing a safe, stable homelife allowing kids to follow their own paths, allow kids to make mistakes and support them as they seek to amend their mistakes
- Parents should be:
 - ✓ Monitoring friends, phones, and online habits
 - ✓ Making sure their child gets 8 hours of sleep
 - ✓ Eat meals together
 - ✓ Ask them about their day
 - ✓ Keep in touch with teachers
 - ✓ Check portal for missed assignments
 - ✓ Tell them you love and believe in them
- Enforcing and reinforcing the necessity for diversity and specialization at the same time in learning
- Supporting, nurturing
- Allowing students to experiment, trying (and failing) new things

LEARNING MODALITIES

This was the challenge:

LEARNING MODALITIES

Here is a list of learning modalities. Which are most appropriate for **core learning**? Which ones should we be using most at our future school? Which ones the least?

Individual reflection:

- Personally rank them in order of appropriateness for learning
- Focus on the 4 most and the 2 least appropriate

Shout out/straw poll:



- We will take a quick sampling of the whole group responses

Then turn in this worksheet.

4 Most 2 Least

- A. Direct teaching _____
- B. Lecture (sustained direct teaching) _____
- C. Carnegie unit 47 minute class periods _____
- D. Longer class periods for deeper learning _____
- E. Seminar instruction _____
- F. Teacher teaming/synchronous collaboration, same time/same place larger student cohort _____
- G. Independent study _____
- H. Small group work/student collaboration _____
- I. Peer tutoring/teaching _____
- J. Internships _____
- K. Service learning _____
- L. Project-based learning _____
- M. Making things, prototyping, STEM, STEAM in core academic courses _____

N. Interdisciplinary academic teaching/learning _____

O. Integrated academic + C-TE learning _____

P. Integrated arts with core academic subjects _____

Q. Social/emotional learning/experiences while learning required curriculum _____

R. Student presentations _____

S. Computer-based: games, learning programs _____

T. Blended learning/flipped classroom _____

U. Skype conversations, distance learning _____

V. Technology with any mobile devices _____

W. Technology with desktop devices _____

X. Other _____

The ranked responses are shown to the right:



Learning Modalities Responses	SCORE	RANK
O. Integrated academic + C-TE Learning	17	1
H. Small group work/student collaboration	14	2
L. Project-based learning	14	2
Q. Social/emotional learning/experiences while learning required curriculum	13	4
J. Internships	11	5
P. Integrated arts with core academic subject	6	6
R. Student presentations	6	6
K. Service learning	4	8
T. Blended learning/flipped classroom	4	8
I. Peer tutoring/teaching	3	10
M. Making things, prototyping, STEM, STEAM in core academic courses	3	10
A. Direct teaching	2	12
N. Interdisciplinary academic teaching/learning	2	12
F. Teacher teaming/synchronous collaboration, same time/same place larger student cohort	1	14
S. Computer-based: games, learning program	1	14
X. Other	1	14
D. Longer class periods for deeper learning	0	17
V. Technology with any mobile devices	0	17
G. Independent study	-1	19
U. Skype conversations, distance learning	-1	19
W. Technology with desktop devices	-2	21
E. Seminar instruction	-8	22
C. Carnegie unit 47 minute class periods	-11	23
B. Lecture (sustained direct teaching)	-25	24

INTEGRATING THE CURRICULUM

John Kosko, former Superintendent of South Shore Vocational Technical High School and former President of the Massachusetts Association of Vocational Administrators, gave a short presentation on integration in career-technical schools in Massachusetts. See Appendix Ch 5.6.

Workshop participants responded, using the framework of this challenge:

An integrated curriculum has interdisciplinary/cross-curricular teaching and learning.

1. Is interdisciplinary/cross-curricular teaching and learning important for the future? YES NO
2. Why?
3. Here are some examples of integrated programs:
 - Integrated core academics: ELA, social studies, math, and/or science
 - STEM (Science, Technology, Engineering, Math)
 - STEAM (Science, Technology, Engineering, Arts, Math)
 - Arts with core
 - Carpentry with math
 - Auto Tech with physics
 - Wellness program integrating PE, Science, and Health Technology
 - Others?
4. Pick one or more. For each develop a scenario:
 - Characterize how teaching and learning like that would work, what it looks like
 - How many teachers are involved?
 - i. What are they doing?
 - How many students are involved?
 - i. What are they doing?



- How do students express their learning?
- Do you have to change the schedule to make it work?
 - i. If so, how?
- 5. What does this mean for facilities?
- 6. Do you think NEMT should support integrating the curriculum on a regular basis?
YES or NO. Why?

Spaces

John asked the Table Teams to identify the kinds of spaces the new building should have to better support integrating the curriculum. Their responses were as follows. **Bold indicates concepts they shared with the whole group.**

The responses were:

1st Team Response:

1. Is interdisciplinary/cross-curricular teaching and learning important for the future? YES NO
 - Yes
2. Why?
 - No response
3. Here are some examples of integrated programs:
 - a. Integrated core academics: ELA, social studies, math, and/or science
 - b. STEM (Science, Technology, Engineering, Math)
 - c. STEAM (Science, Technology, Engineering, Arts, Math)
 - d. Arts with core
 - e. Carpentry with math
 - f. Auto Tech with physics**
 - g. Wellness program integrating PE, Science, and Health Technology
 - h. Others?
4. Pick one or more. For each develop a scenario:
 - a. Characterize how teaching and learning like that would work, what it looks like
 - Common teaching time

- b. How many teachers are involved? 4 – 2 auto/2 physics
 - What are they doing? Co-teaching periodically
- c. How many students are involved? 30-40 in groups of 5 +/-
 - What are they doing? No response
- d. How do students express their learning? Graphic and oral presentations
- e. Do you have to change the schedule to make it work?
 - If so, how? No response
5. What does this mean for facilities? Closer relation
6. Do you think NEMT should support integrating the curriculum on a regular basis?
YES or NO. Why?
 - Formal/informal meeting
 - Senior projects
 - Presentation spaces within shops, within school. Sharing currently
 - Flex within shop
 - Teacher planning

2nd Team Response:

1. Is interdisciplinary/cross-curricular teaching and learning important for the future? YES NO
 - Yes
2. Why?
 - Collaboration
 - Community building
 - Improved health and wellness of staff
 - Expand opportunities for practice
3. Here are some examples of integrated programs:
 - a. Integrated core academics: ELA, social studies, math, and/or science
 - b. STEM (Science, Technology, Engineering, Math)
 - c. STEAM (Science, Technology, Engineering, Arts, Math)
 - d. Arts with core
 - e. Carpentry with math
 - f. Auto Tech with physics



g. Wellness program integrating PE, Science, and Health Technology

h. Others?

4. Pick one or more. For each develop a scenario:
 - a. Characterize how teaching and learning like that would work, what it looks like
 - o Health/exercise/nutrition
 - b. How many teachers are involved? 2
 - o What are they doing? Tests heart rate monitors
 - c. How many students are involved?
 - o What are they doing? No response
 - d. How do students express their learning? No response
 - e. Do you have to change the schedule to make it work?
 - o If so, how? No response
5. What does this mean for facilities? No response
6. Do you think NEMT should support integrating the curriculum on a regular basis?
YES or NO. Why?
 - o Sports teaching – performance field, gym, track

3rd Team Response:

1. Is interdisciplinary/cross-curricular teaching and learning important for the future? YES NO
 - Yes
2. Why?
 - It teaches collaboration, expands student and teachers experiences
3. Here are some examples of integrated programs:
 - a. Integrated core academics: ELA, social studies, math, and/or science
 - b. STEM (Science, Technology, Engineering, Math)
 - c. STEAM (Science, Technology, Engineering, Arts, Math)
 - d. Arts with core
 - e. Carpentry with math
 - f. Auto Tech with physics - Selected
 - g. Wellness program integrating PE, Science, and Health Technology

h. Others?

4. Pick one or more. For each develop a scenario:
 - a. Characterize how teaching and learning like that would work, what it looks like
 - o Common teaching time
 - b. How many teachers are involved? Cosmetology
 - o What are they doing? Business tech – business plan – design and visual – business cards
 - c. How many students are involved?
 - o What are they doing? No response
 - d. How do students express their learning?
 - e. Do you have to change the schedule to make it work?
 - o If so, how? No response
5. What does this mean for facilities? No response
6. Do you think NEMT should support integrating the curriculum on a regular basis?
YES or NO. Why?
 - o It creates a more cohesive learning experience for the students!

4th Team Response:

1. Is interdisciplinary/cross-curricular teaching and learning important for the future? YES NO
 - Yes
2. Why?
 - World is much more connected
3. Here are some examples of integrated programs:
 - a. Integrated core academics: ELA, social studies, math, and/or science
 - b. **STEM (Science, Technology, Engineering, Math) - selected**
 - c. STEAM (Science, Technology, Engineering, Arts, Math)
 - d. Arts with core
 - e. Carpentry with math
 - f. Auto Tech with physics - Selected
 - g. Wellness program integrating PE, Science, and Health Technology
 - h. Others?



4. Pick one or more. For each develop a scenario:
 - a. Characterize how teaching and learning like that would work, what it looks like
 - Problem – automated watering system to water plants in science class
 - b. How many teachers are involved? Cosmetology
 - What are they doing? STEM and Science
 - c. How many students are involved?
 - What are they doing? STEM building system – science using it. Data reporting
 - d. How do students express their learning?
 - e. Do you have to change the schedule to make it work?
 - If so, how? Depends on how integrated you want it
5. What does this mean for facilities? No response
6. Do you think NEMT should support integrating the curriculum on a regular basis?
YES or NO. Why?
 - Carpentry with science – building many models

5th Team Response:

1. Is interdisciplinary/cross-curricular teaching and learning important for the future? YES NO
 - Yes
2. Why?
 - Connecting school with life
3. Here are some examples of integrated programs:
 - a. Integrated core academics: ELA, social studies, math, and/or science
 - b. STEM (Science, Technology, Engineering, Math)
 - c. STEAM (Science, Technology, Engineering, Arts, Math)
 - d. Arts with core
 - e. **Carpentry with math - selected**
 - f. Auto Tech with physics - Selected
 - g. Wellness program integrating PE, Science, and Health Technology
 - h. Others?
4. Pick one or more. For each develop a scenario:

- a. Characterize how teaching and learning like that would work, what it looks like
 - Integration with what you would use in carpentry
- b. How many teachers are involved? 5
 - What are they doing? Teaching carpenters and math
- c. How many students are involved? 30
 - What are they doing? learning
- d. How do students express their learning?
 - Making things using math/carpentry
- e. Do you have to change the schedule to make it work?
 - If so, how? No because it's integrated to the math class
5. What does this mean for facilities? Have to have math classes at carpentry shop
6. Do you think NEMT should support integrating the curriculum on a regular basis?
YES or NO. Why?
 - We already are in shops. Just put what we do in shop and relate it to the things taught in classroom

Table Team Discussion + Report Out

TABLE TEAM 1

Integrating the Curriculum

- Yes

TABLE TEAM 2

Integrating the Curriculum

- What we need:
 - Auditorium
 - Visitors – experts
 - ✓ Talk with students
 - Make a learning stair at the Cafeteria/Lobby
 - Enough academic spaces
 - Related space connected directly to shop areas
 - **More than 1 teacher planning spaces!!**
 - Integration of academics and shops
 - Flex space in shops
 - ✓ Impromptu direct teaching tools



- Every science classroom is a lab

TABLE TEAM 3 Integrating the Curriculum

- Challenges with current Facility:
 - Limited shop space, supplies
 - Teachers traveling from class to class
 - Lack of gym/field space
 - Lab and classroom space

TABLE TEAM 4 Integrating the Curriculum

- What we need:
 - Students feel more valued in activities
 - Accept all students who want to come
 - Expand shops
 - **Academic teachers with areas**
 - ✓ **Prep/own classroom**
 - Senior project presentation spaces
 - Appropriate space in Gym
 - Extra space for outside providers (therapist)
 - Science Labs

TABLE TEAM 5 Integrating the Curriculum

- What we need:
 - Presentation/projects could be displayed differently
 - Need academic space – now too crowded
 - Science Labs
 - 3 dental chairs for 60 students
 - ✓ Not enough time to develop skills
 - Need larger space/more equipment
 - Shop collaboration AB/AT
 - ✓ Overlap of computer programs and skills
 - Overlap of shops/academics

TABLE TEAM 6 Integrating the Curriculum

- What we need:
 - Student demo areas/shop

- Specific demo's
- Science Labs
 - ✓ Anatomy
 - ✓ Biology
 - ✓ Chemistry
 - ✓ H.A.
 - ✓ Dental
 - ✓ Culinary arts
- Showcasing student work
- Co-teaching
 - ✓ Academic with shop
- Circular teaching
 - ✓ Environment and setting

TABLE TEAM 7 Integrating the Curriculum

- Yes!
- 10,000 rule applies here
- What we need:
 - More effective alignment of goals and benchmarks
 - More buy-in (staff and student)
 - Time!
 - Scheduling
 - Places to showcase academic/technical work
 - Cross technical collaboration
 - ✓ D/V and Health A
 - ✓ And Culinary

WHO IS IN CHARGE HERE?

The Visioning Team discussed learning standards brought by the Common Core, by related the Massachusetts Department of Elementary and Secondary Education (DESE) standards, by MCAS standardized testing, and other 'drivers.' They were prompted by these questions:

WHAT TO TEACH + HOW TO TEACH



WHOLE GROUP DISCUSSION BASED ON THE FOLLOWING PROMPTS:

Consider these higher powers: authorities/standards who might have control over what we do:

- District guidelines/requirements
- Massachusetts Dept of Elementary + Secondary Education (DESE) guidelines/standards
- Chapter 74 guidelines/standards
- MCASS annual testing
- Common Core guidelines/organization
- Parents
- School Committee
- Trade Councils
- Understandings about university acceptance
- Other

1. Do the any of the above **explicitly** stop us from delivering education the way we said was most appropriate on Day 1?
2. Do they **implicitly** present roadblocks making it difficult to do so?
If “yes,” what are they?
3. Are there any conflicts or restrictions to best/next practices and 21st century learning?
4. Do your preferred Learning Modalities align, conflict, or have no issue with the higher powers above? How so?
5. How do we go beyond any higher powers to do what we want to do? What is it we want to do?

The Visioning Team discussed these issues as a whole group. Their responses were:

Who is in charge?

- Explicit barriers
 - MCAS
 - No one
 - Optimism
 - Technical problems
 - ✓ Need SS #'s to have internships explicit?
- Both Explicit and Implicit barriers
 - MCAS
 - We have to figure out what kind of culture we want to create
 - Other confines we will overcome
 - DESE curriculum requirements
 - MSBA space guidelines
 - Optimism prevails
- Implicit barriers
 - No one
 - MSBA space guidelines



Educational Vision

INTRODUCTION

This Educational Vision reflects the work of a Visioning Team, approximately 35 teachers, school administrators, school board members, parents, students, trade council members, the owner's project managers, and the architects. Created in three afternoons of intense facilitated workshops it is intended to guide the long-term development of both education and facilities for the Northeast Metropolitan Regional Technical High School (NEMT).

Much of the work was conducted by Table Teams, small groupings of six participants each. They brainstormed, debated, and attempted to reach consensus on most of the defining issues. Each Table Team had the diverse stakeholders evenly distributed to the greatest extent possible.

VISION COMPONENTS

The Educational Vision for future schools is described here through several components:

- **Guiding Principles** establish broad parameters for educational delivery, school structure, and facilities
- **Most Important Concepts for the Future** identifies the best and next practices most important for future teaching and learning
- **Learning Modalities** identifies the most effective and appropriate ways for teachers to reach students with curriculum delivery

GUIDING PRINCIPLES

The *Guiding Principles* presented here were created to express the values, beliefs, and concepts developed by the educator and community Visioning Teams which examined educational trends, best practices, and issues affecting the delivery of 21st century education. These *Guiding Principles* present the essence of that inquiry. They are not policy but they address the overarching themes



Ch 3 Educational Vision

identified by participants. They may serve as a foundation for the future school. As such, they are intended to form the basis of future educational delivery and facilities planning. Staff Professional Development is crucial to the successful implementation of the educational concepts outlined here.

The Guiding Principles are:

Overarching Principles

- This future-oriented Educational Vision articulates of innovative best and next educational practices, some of which are already in operation in some classrooms at NEMT
- Create a common understanding of this Educational Vision among administrators, faculty, parents, and students to continue shifting the educational model from one that is fairly traditional to one that is more transformed
- Prepare students for success in the 21st century, an emerging world of global competition, uncertain employment prospects simultaneous with unheralded workplace opportunities, infinite access to information, and rapid change in technology
- Teach 21st century skills at the same time as traditional content
- Build relationships with students, families, and communities through school structure and programs
- Aspire beyond the Common Core and beyond the Massachusetts Department of Elementary and Secondary Education and its Chapter 74 guidelines to do what is best for student learning, and to instill a life-long sense of wonder and purpose. Create independent, life-long learners
- Establish a program of staff Professional Development to support the educational deliveries outlined here

Educational Delivery

Educational Delivery addresses overarching themes required to provide a 21st century high-performing educational experience for all students at our future school.

INSTRUCTIONAL MODELS

- Develop a social/emotional learning initiative

- Increase student engagement by shifting the teaching model to more active, student centered learning, with opportunities for student voice in their learning
- Employ project-based learning (PBL) on a regular basis
- Group students in small learning teams to differentiate instruction and foster communication, collaboration, and improved social skills, and foster differentiated instruction
- Create a school and community cultures that values flexibility for change
- Position students to learn 21st century skills, especially the “four C’s”, collaboration, communication, creativity, and critical thinking, while simultaneously meeting standard curriculum goals
- Pilot innovative deliveries such as PBL, social/emotional programs, and making things to learn for planned future large-scale implementation

TECHNOLOGY INTEGRATION

Our world is dependent on technology implementation in all aspects of life. Students must be provided with the technological skills and knowledge which will enable them to function successfully in a global context. Technology should include:

- Wireless capability in all spaces in the school building
- Engage computers as part of best, next educational practices when their use gives students more choice in their learning
- Deploy mobile devices but not mobile phones in lieu of desktop devices

Technology must not be viewed as a curriculum add-on, but, rather as an effective tool to be utilized in meaningful instruction that is relevant and rigorous.

Educational Structure

Educational Structure establishes the organizational patterns necessary to group students and teachers in the most effective ways.

ORGANIZATION





Ch 3 Educational Vision

- Position educators to build relationships to better know their students through the strategic placement of learning spaces
- Expand internships with local businesses and institutions for all students
- Encourage and develop team teaching to achieve an integrated curriculum, both synchronously and sequentially

RELATIONSHIPS

- Organize school as Small Learning Communities to support formation of relationships
- Include career technical learning and academic learning in each of those SLCs
- Reference the National Career Cluster framework to organize the SLCs
- Foster student collaboration to build social and communication skills, and the ability to work with others
- Create opportunities for students to grow socially and emotionally while working with others in classroom assignments

CURRICULUM

- Build 21st century skills while meeting traditional curriculum goals
- Create regular opportunities for students to improve their oral communication skills
- Shift from one-subject curriculum delivery to integrated, interdisciplinary curriculum delivery, including career technical with academic
- Integrate arts with academics

SCHEDULES

- Create common planning time for all teachers

Facility Implications

- Support Safety and Security as an integral planning component, not as an “add on” as it has been in the past
 - Create a building plan that offer security and safety despite constant visitors, many of whom will be

customers for student services and active participants in student learning

- Develop overall and learning space planning concepts as flexible platforms for continued change, giving future generations of educators and students the power to easily change the educational model
- Develop Small Learning Communities, learning spaces arranged in National career Cluster Framework-based clusters
- Select furniture that supports collaboration, student decision-making, different learning modalities, and is substantiated by brain research
- Create Teacher Planning Centers to foster collaboration, interdisciplinary teaching, and greater knowing of students by teachers
- Integrate outdoor learning spaces such as an amphitheater and pond
- Create presentation spaces to honor and encourage frequent student and expert visitor presentations
- Minimize circulation spaces that do not also offer opportunities for learning, such as in Extended Learning Areas, Breakout/ Collaboration/Small Group spaces
- Position the Art and Music Studios as close to the core learning areas as possible

MOST IMPORTANT CONCEPTS FOR THE FUTURE

Visioning Team members, working in Table Teams, were asked to identify the most important issues for education and facilities in the future.

The results are outlined here, in order of importance based on frequency of citing in Table Team discussions:

EDUCATION

- Social/Emotional Learning
- Student Engagement
- Project Based Learning



Ch 3 Educational Vision

- Creating Innovators
- Safety + Security in 21st Century Schools

Note that these concepts, collectively, call for a major shift in both educational deliveries and the facilities that support them. Curriculum requirements and standards will remain, but the nature of teacher roles and student activities will change.

See Appendix Ch 5.1 and 5.2 for all responses.

LEARNING MODALITIES

Visioning Team members each individually considered 24 learning modalities, ranging from traditional lecturing and direct teaching to independent study, and ranked them in order of appropriateness.

The most commonly cited most effective modalities, in order of importance, are:

- Integrated academic and career technical learning
- Small group work/ student collaboration
- Project-based learning
- Social/ emotional learning/experiences while learning the required curriculum
- Internships
- Integrated arts with core academic subjects

See Appendix Ch 5.2 for the full record.

The whole group guided the development of the diagram shown on the next page.

The full description of the planning concept is in Ch 4 Facility Concepts.

Workshop Guidelines

- This Visioning sets the trajectory. There will be many following steps to share, confirm, refine, revise, implement
- Our focus is school organization
- Our focus is serving students: improving learning
- Academic...C-TE
- Elementary ↔ Middle ↔ High Schools
- *"The Future is here. It's just not evenly distributed."* William Gibson



1

Best/ Next Practices



Frank Locker PhD
fl@franklocker.com
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2

The History of Work + School

1

100 YEARS AGO



75 YEARS AGO



50 YEARS AGO



TODAY



3

The History of Work + School

1

100 YEARS AGO



4

The History of Work + School 1



TODAY

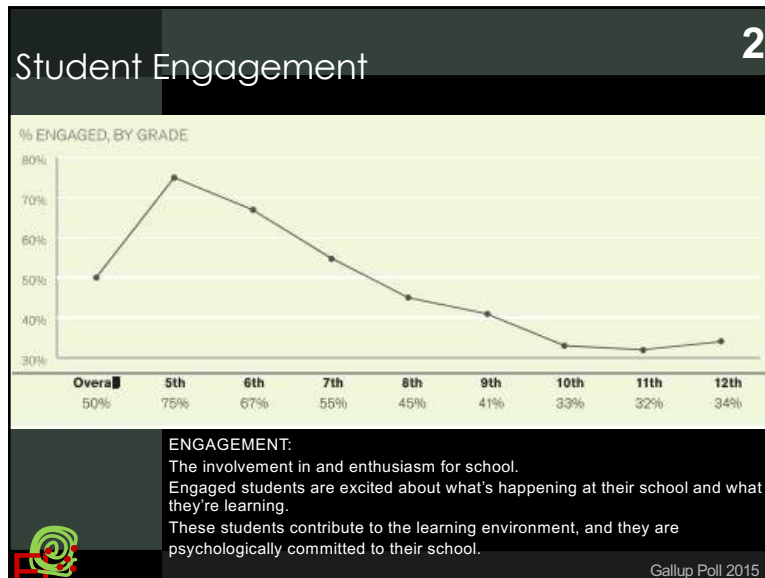
5

The History of Work + School 1

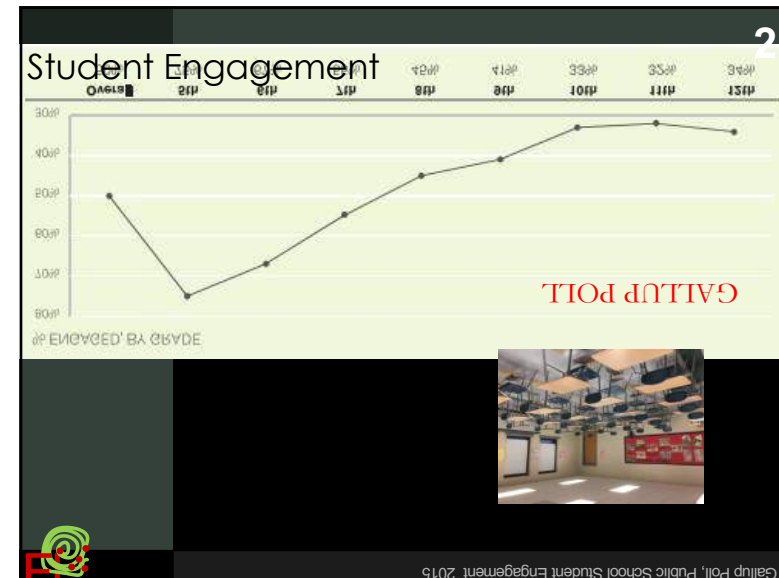


TODAY

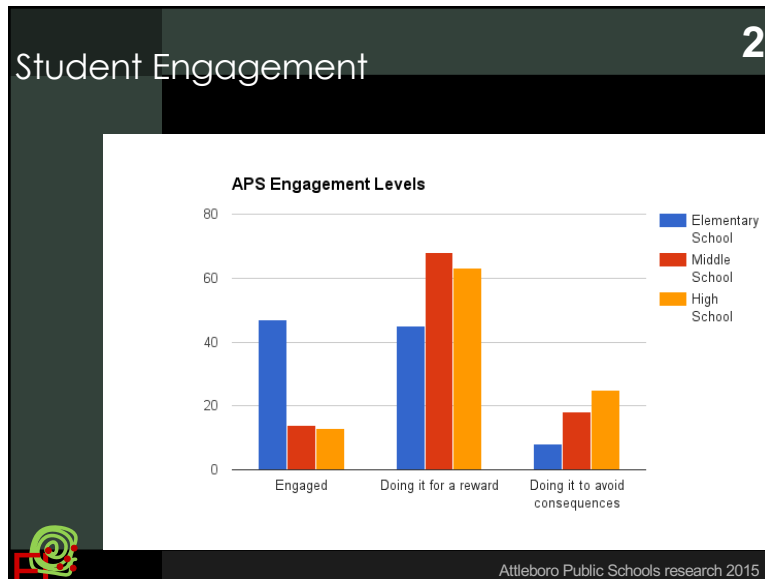
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7



8



9

Futurist Thoughts 3

THOMAS FREY, FORMER GOOGLE FUTURIST

2030 Jobs we don't have yet:

1. Augmented Reality Architects
2. Alternative Currency Bankers
3. Seed Capitalists
7. Urban Agriculturalists
12. 3D Printing Engineers
13. 3D Food-Printer Engineers
17. Wind Turbine Repair Techs
19. Smart Dust Programmers
26. Elevated Tube Transport Engineers
32. College and University Dismantlers

10

Futurist Thoughts 3

THOMAS FREY, FORMER GOOGLE FUTURIST

2030

Over 2 billion jobs will disappear by 2030

11

Futurist Thoughts 3

MARSHALL BRAIN, ROBOTIC NATION

Nine jobs humans may lose to robots:

- Pharmacists
- Lawyers and paralegals
- Drivers
- Astronauts
- Store clerks
- Soldiers
- Babysitters
- Rescuers
- Sports writers and other reporters

12

3

Futurist Thoughts

APPLIED TO EDUCATION

"12 job changes in a career." US Dept Labor Statistics

"65% of children entering grade school today will work in jobs that don't even exist yet." Scott McLeod, ISTE



"...We need to do a better job of teaching kids to live at intersections." Scott McLeod, ISTE

"30% of scholars and education leaders are pessimistic about the education system's ability to teach new skills." Pew Research Center, *Future of Jobs*, 2016



13

3

Futurist Thoughts

DAVID HOULE: SHIFT THINKING

- Legacy thinking makes decisions about the future based on the past
- Shift thinking makes decisions about the future based on the future
- What should we do?



Shift Ed

14

The Future of School




15

The Future of School

TODAY



TODAY



TODAY



TODAY





16

20th vs 21st Century Learning 4

20 th CENTURY	EARLY 21 st CENTURY
TEACHER CENTERED	STUDENT CENTERED
• Focus on teaching efficiency • Producing workers for the industrial age • Content knowledge • “Broadcast” teaching • Students work alone • Content is abstracted • Teacher is holder of knowledge • Teacher works alone • Subjects taught separately • Mostly direct instruction + papers	• Focus on learning effectiveness • Producing citizens for the digital age • Relationships + skills • Personalized learning • Collaborative learning • Content is relevant • Teacher is a guide • Teacher collaboration + teams • Integrated/interdisciplinary learning • Project-based learning



17

Measures of Success? 5

HOW DO WE KNOW WE ARE DOING THE RIGHT THING?

- Standardized testing
- Course failure rates
- Attendance rates
- Graduation rates
- Student behavior
- Parent involvement
- College/post-secondary admission
- College/post-secondary graduation
- Others?



18

Measures of Success? 5

HOW DO WE KNOW WE ARE DOING THE RIGHT THING?

What do students want to talk about at the dinner table every night?

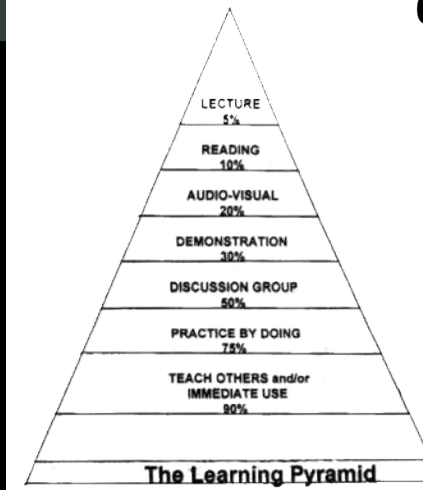


19

Learning Pyramid 6

Rate of retention of different modes of learning

ACTIVE LEARNING + RESPONSIBILITY CREATES MORE RETENTION THAN PASSIVE LEARNING



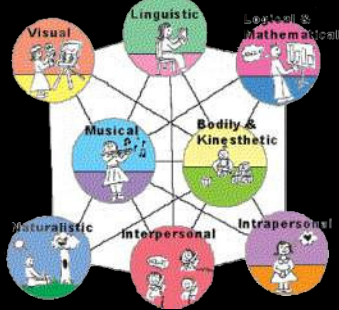
The Learning Pyramid

NTL Institute for Applied Behavioral Science

20

Learning Research 7

MULTIPLE INTELLIGENCES



 Howard Gardner

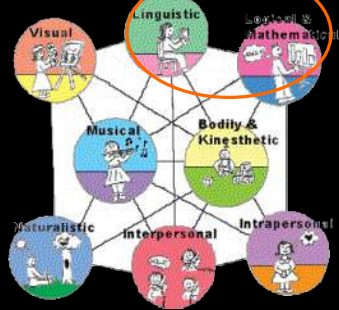
- There are eight or more intelligences
- People are strong in some, not in others
- Every student's education should engage natural strengths, so they can develop others

Darleen Fabio, Graduate Student, Educational Technology, SDSU

21

Learning Research 7

MULTIPLE INTELLIGENCES



 Howard Gardner

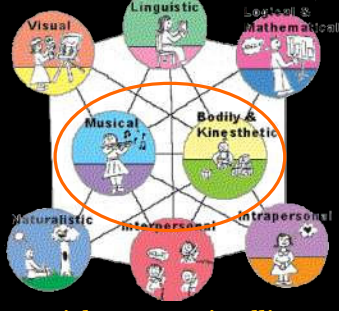
- There are eight or more intelligences
- People are strong in some, not in others
- Every student's education should engage natural strengths, so they can develop others

Darleen Fabio, Graduate Student, Educational Technology, SDSU

22

Learning Research 7

MULTIPLE INTELLIGENCES



 Howard Gardner

- There are eight or more intelligences
- People are strong in some, not in others
- Every student's education should engage natural strengths, so they can develop others

Darleen Fabio, Graduate Student, Educational Technology, SDSU

23

Personalized Learning 8





24

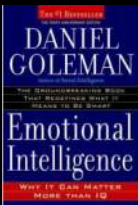
9

Social/ Emotional Learning

SUCCESS IN LIFE

Emotional Intelligences

Daniel Goleman Emotional Intelligence



“85% of success is based on your EQ, not your IQ”

SEL as a classroom practice?
SEL as a school-wide practice?



25

10

Relationships

MAGIC OF 150

Dunbar's Number

The theoretical cognitive limit to the number of people with whom one can maintain stable social relationships. These are relationships in which an individual knows who each person is, and how each person relates to every other person.
150 is really 100 to 225

GOOGLE THE
“MAGIC OF 150”

Small Learning Communities build relationships



26

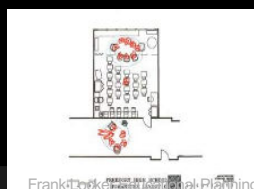
11

Integrated Arts + Academics

Core learning goes up when arts are integrated in core classrooms, especially for English language learners



“Give me a classroom big enough to dance in.”



Frank Drake Planning



27

11

Integrated Arts + Academics

HIGH TECH HIGH

Art teacher co-teaches with ELA teacher



Storyboards not papers



28

STEM/ STEAM 12



STEM Program, Newton North High School

Hanover High School, Hanover, MA

29

Computers for Learning 13

BLENDED LEARNING; FLIP THE CLASSROOM



30

Small Group Collaboration 14

REDEFINING HOW STUDENTS LEARN



31

Class Time 15





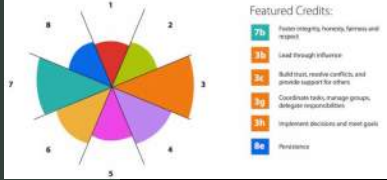
- Carnegie Unit:
- 40 minutes
- 47 minutes
- 60 minutes
- Teacher centered
- Direct teaching + lecturing
- Passive learning
- No student collaboration
- Limited student discussion
- Longer periods:
- 90 Minutes
- 180 minutes
- Curriculum continuity
- Deeper learning
- Student centered

32

16

Mastery Transcript Coalition

ALTERNATIVE/SUPPLEMENT TO THE SATS



Alternative model of assessment, crediting and transcript generation

Top universities and colleges have agreed to use the new system

Creativity, Critical Thinking, Communication, Collaboration

Self-Directed Learning

Humanities + Arts; Science, Technology, Engineering + Mathematics

33

17

Creating Innovators

Tony Wagner
Creating Innovators



“When a student can learn everything they need to know from the internet, the curriculum is no longer important. The school experience is.”

34

17

Creating Innovators

Tony Wagner
Creating Innovators



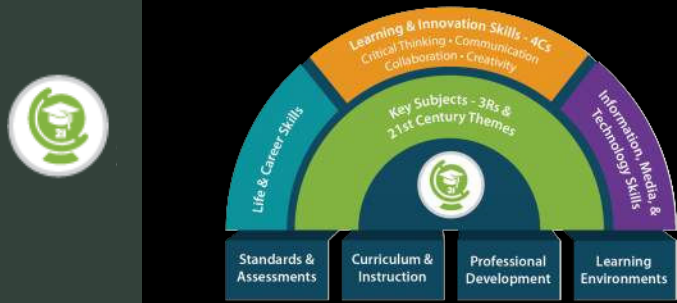
“What you know is not important. What you do is.”

35

18

21st Century Skills

BATTLE FOR KIDS



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36

21st Century Skills

18

PARTNERSHIP FOR 21ST CENTURY LEARNING

THE FOUR 'Cs'



- Creativity + innovation
- Critical thinking + problem solving
- Communication
- Collaboration

37

21st Century Skills + Competencies

18

BATTLE FOR KIDS

PORTRAIT OF A GRADUATE

Tallmadge City Schools

Olmstead Falls City Schools

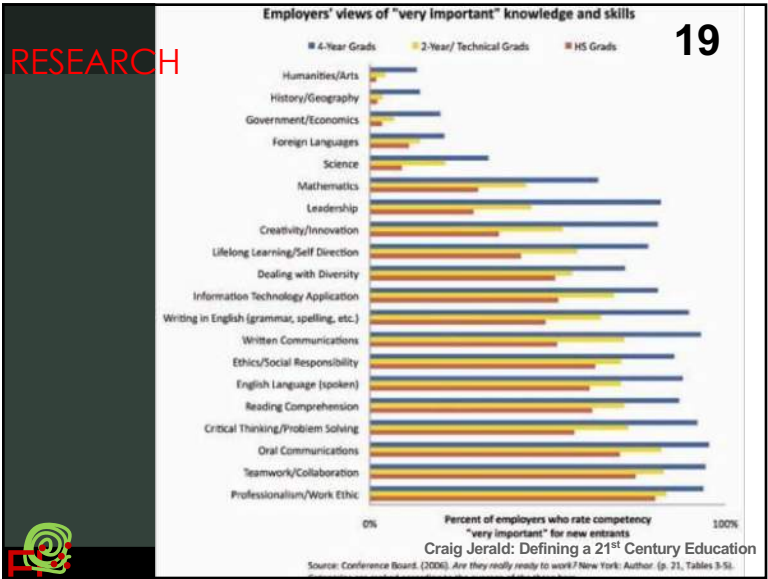
Perrysburg Schools

- Communicators
- Critical Thinkers
- Creators & Innovators
- Collaborators
- Empathetic
- Resilient
- Productive
- Self-Directed

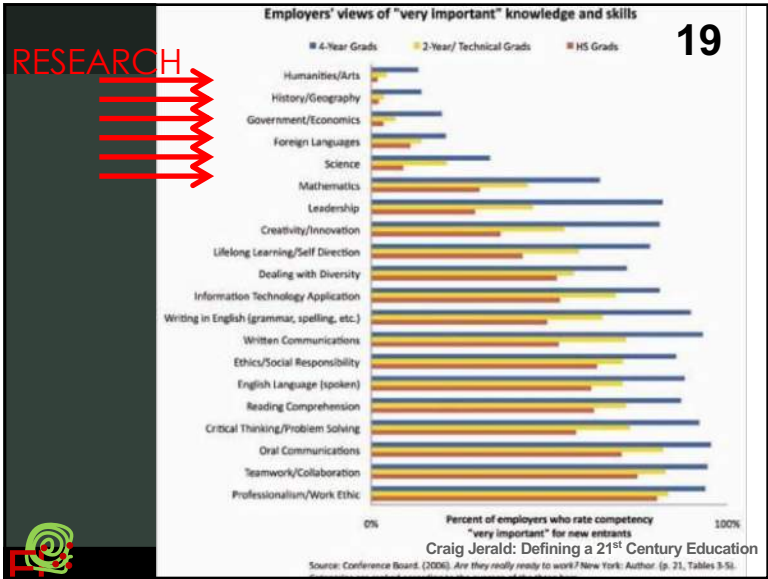
- Citizenship
- Collaboration
- Communication
- Creativity
- Critical Thinking
- Self-Confidence
- Self-Directed

- Thoughtful Problem Solver
- Persistent Innovator
- Respectful Collaborator
- Purposeful Communicator
- Lifelong Learner
- Empathetic Citizen

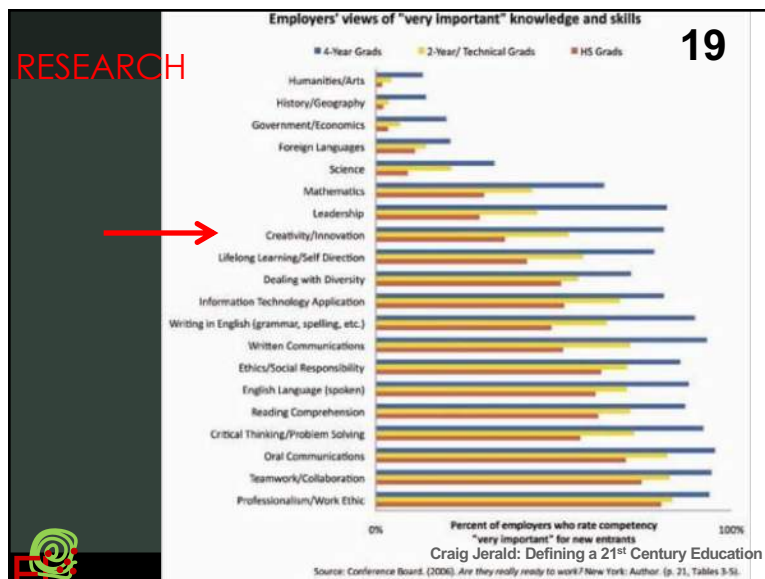
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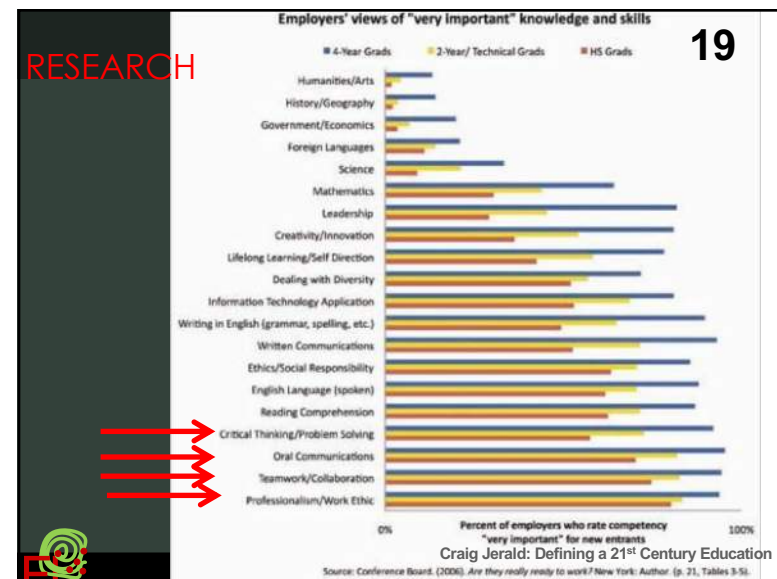
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41



42

Project Based Learning

CAPE FAREJEN, ARLINGTON, MA, HIGH SCHOOL

20

21st Century Skills in Action: Arlington High School, Gr. 11

Honors French students were divided into small groups and asked to **create a restaurant in France**. Students used the Internet to research real estate listings, learned about the Euro to consider price options, selected a financial planning method based on interest rates and incentive programs, and used professional software to create a business and marketing plan aimed at their target clientele. Once the plans were complete students developed and priced their menus, sketched out the interior design and used architectural software to lay out the furniture. The project ended with oral presentations done in both English and French. Local restaurant designers and architects were invited in to hear the English presentations. The project lasted the entire year, and was conducted entirely in French. More on this project: <http://www.doe.mass.edu/edtech/practices/arl/intro.htm>.

21st century skills used in this project: technology; collaboration; global awareness; media literacy; creativity; financial, economic, business and entrepreneurial literacy.

43

Project Based Learning

CAPE FAREJEN, ARLINGTON, MA, HIGH SCHOOL

20

PROJECT REQUIREMENTS

- Business plan
- Real estate analysis (in Paris)
- Café name
- Café space design
- Café menu design
- Nutrition analysis
- Set prices for menu (Euros)
- Correlation of location-market demographics-menu-space design
- Speak French
- Outside experts
- Talk to students in France
- Location mapping
- Business plan spreadsheets
- Menu graphics
- Model of design
- Presentation to "jury"

Arlington HS 11th Grade French Class

44

Project Based Learning 20

CAPE FARELEN, ARLINGTON, MA, HIGH SCHOOL



Arlington HS 11th Grade French Class

45

Project Based Learning 20

CAPE FARELEN, ARLINGTON, MA, HIGH SCHOOL

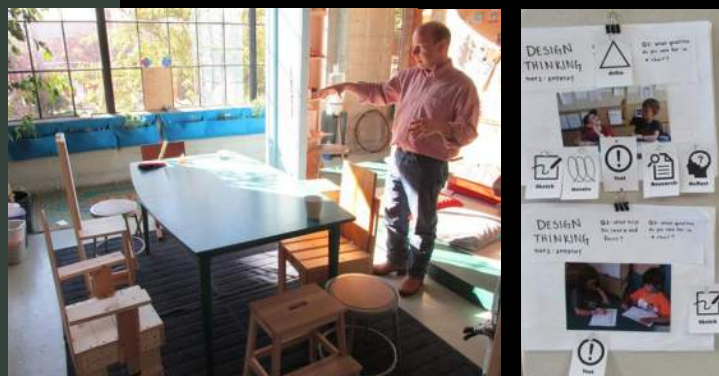


Arlington HS 11th Grade French Class

46

Design Thinking Making Things to Learn 21

BRIGHTWORKS SCHOOL, San Francisco, CA



Brightworks School

47

Design Thinking Making Things to Learn 21

BRIGHTWORKS SCHOOL, San Francisco, CA



tinkering school

48

Design Thinking Making Things to Learn

NU VU STUDIO, Cambridge, MA

21




49

Design Thinking Making Things to Learn

NU VU STUDIO, Cambridge, MA

21




50

School Organization

CAN SCHOOL ORGANIZATION IMPROVE LEARNING?

22

- Oxford Hills Comprehensive High School, S Paris, ME
 - 1200 students
 - Shifted from departmental organization to four-teacher teams (ELA, math, social studies, science)
 - In 1 year: Course failure rate dropped by 50%
- North Ridgeville Academic Center, North Ridgeville, OH
 - 2200 students, Grades 3-8
 - Autonomous teacher teams serving 125+- students each
 - Eliminated the bell schedule
 - New facility
 - In 1 year: State test scores rose dramatically
 - In 1 year: Discipline problems dropped by 65%



51

School Organization: C-TE + Academics

IMBED ACADEMICS IN TECH

23a

- Applied Technology Center, Canby HS, Canby, OR




- Thematic Learning
- Academic & Technical Learning
- Project-Based Learning

Dull, Olson, Weekes Architects

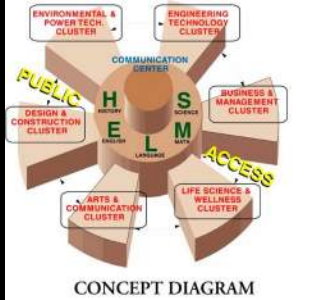


52

School Organization: C-TE + Academics 23b

THEMATIC SMALL LEARNING COMMUNITIES

- Oxford Hills Comprehensive HS, S Paris, ME
 - 1200 students, 6 Small Learning Communities
 - C-TE and academics in each



CONCEPT DIAGRAM

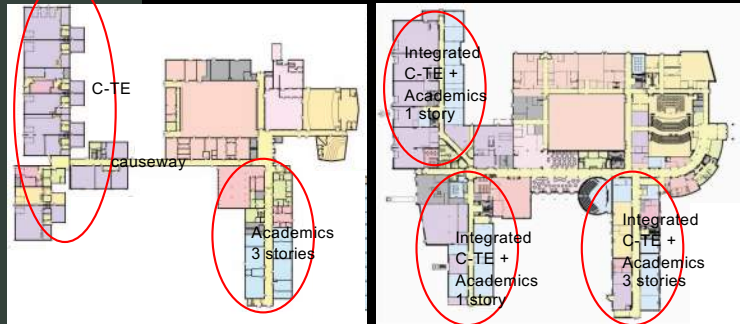
- Created in the 1990s, predating the National Career Cluster Framework by 10 years

53

School Organization: C-TE + Academics 23b

THEMATIC SMALL LEARNING COMMUNITIES

- Mt Blue HS + Foster Tech, Farmington, ME



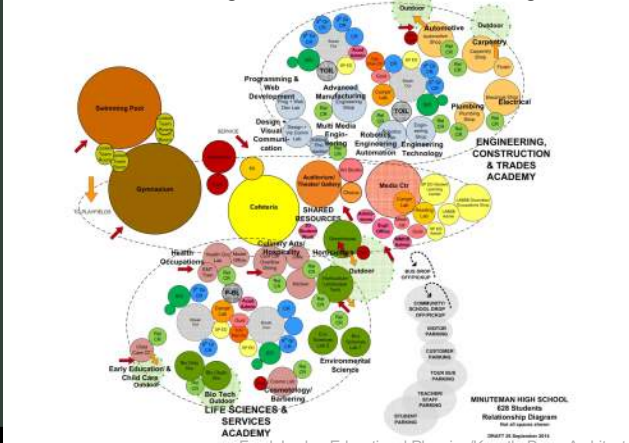
BEFORE AFTER

54

School Organization: C-TE + Academics 23c

SCHOOLS W/1 SCHOOL (SWAS)

- Minuteman Regional Technical HS, Lexington, MA



MINUTEMAN HIGH SCHOOL
600 Students
Relationship Diagram
2007/08 September 2011
Frank Locker Educational Planning/Kaestle Boos Architects

55

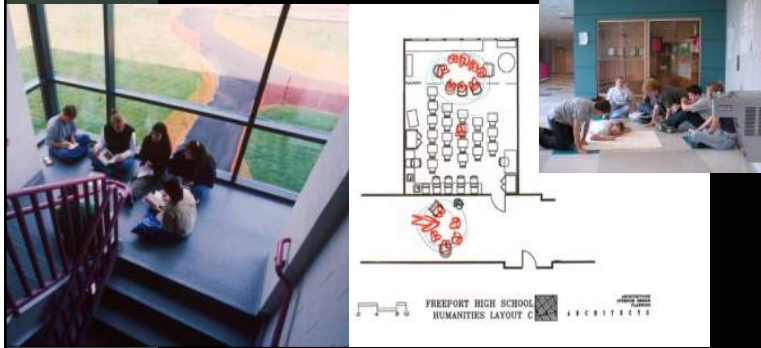
Break

56

21st Century Schools

NEW CLASSROOM CONCEPTS

- What is and where is a classroom?



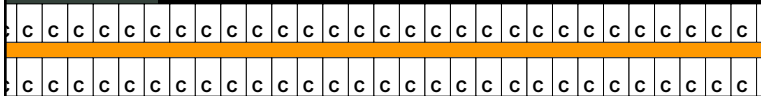
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20th Century Schools



58

20th Century Schools

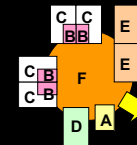


DISJOINTED CURRICULUM
DELIVERED BY INDIVIDUAL
TEACHERS IN ISOLATED
SETTINGS

59

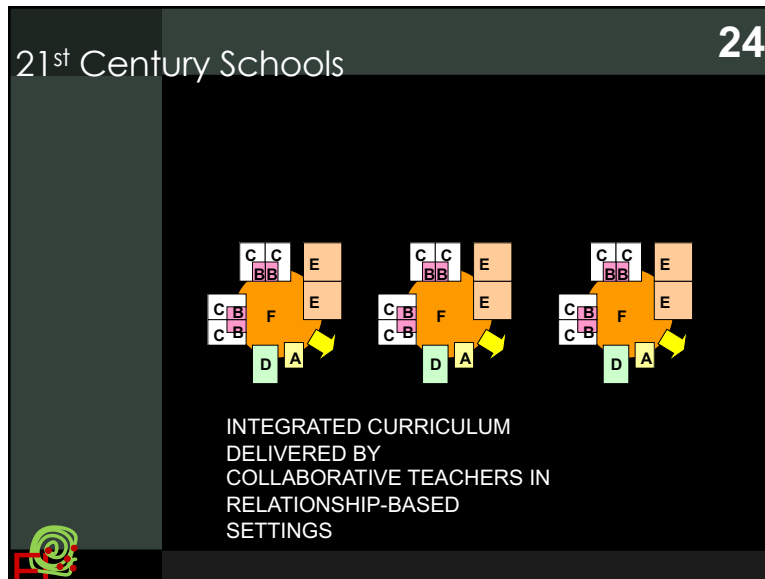
21st Century Schools

24

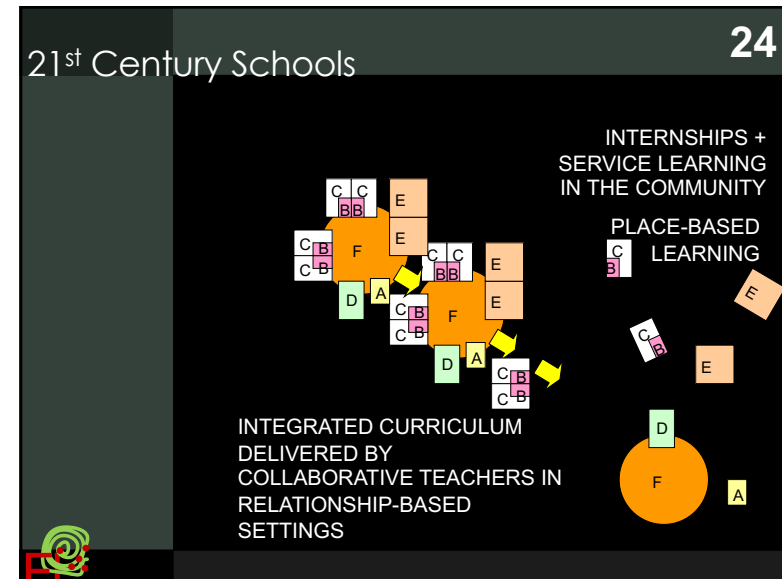


INTEGRATED CURRICULUM
DELIVERED BY
COLLABORATIVE TEACHERS IN
A RELATIONSHIP-BASED
SETTING

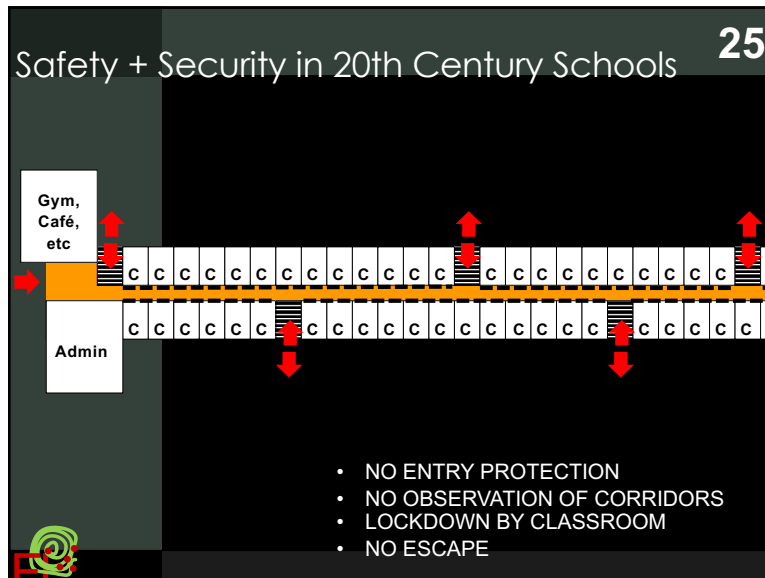
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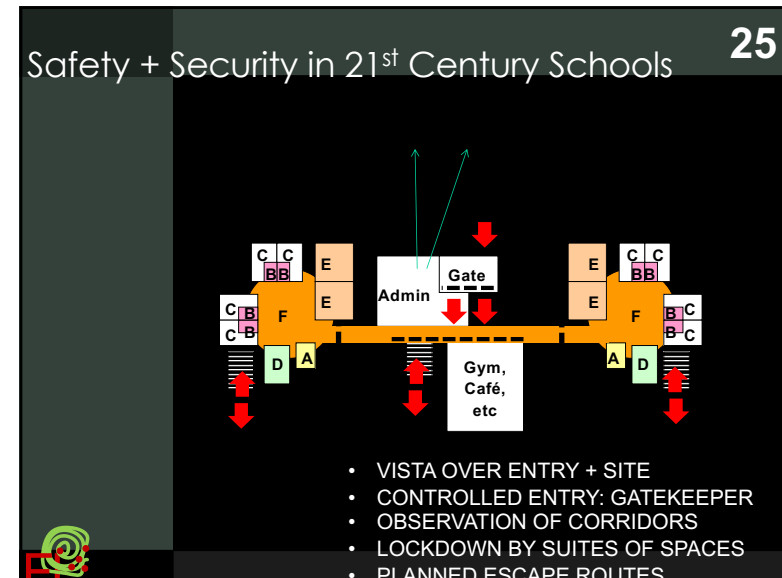
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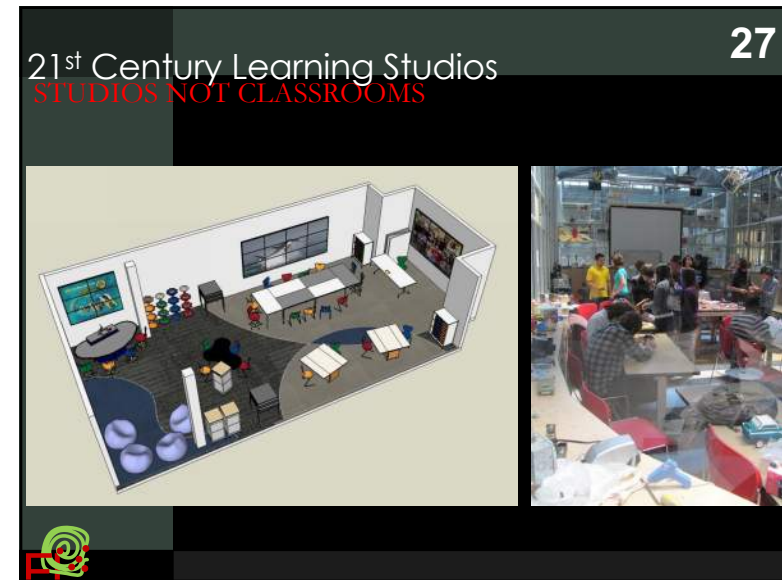
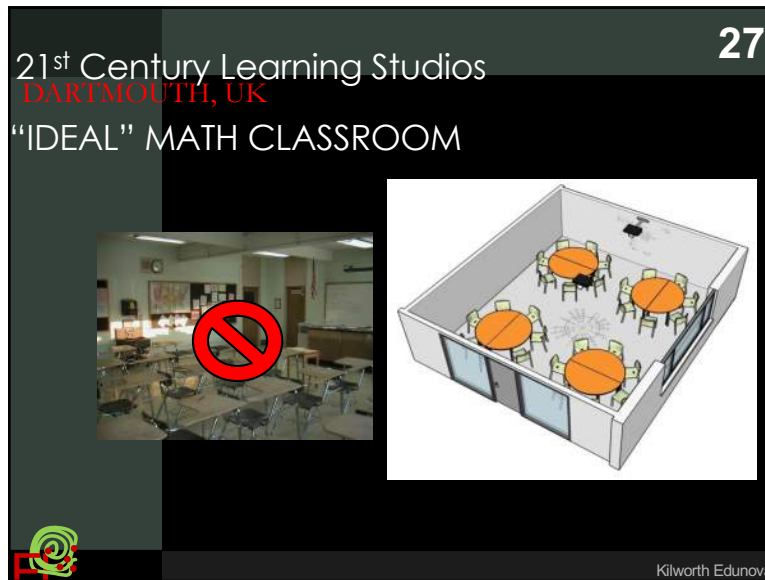
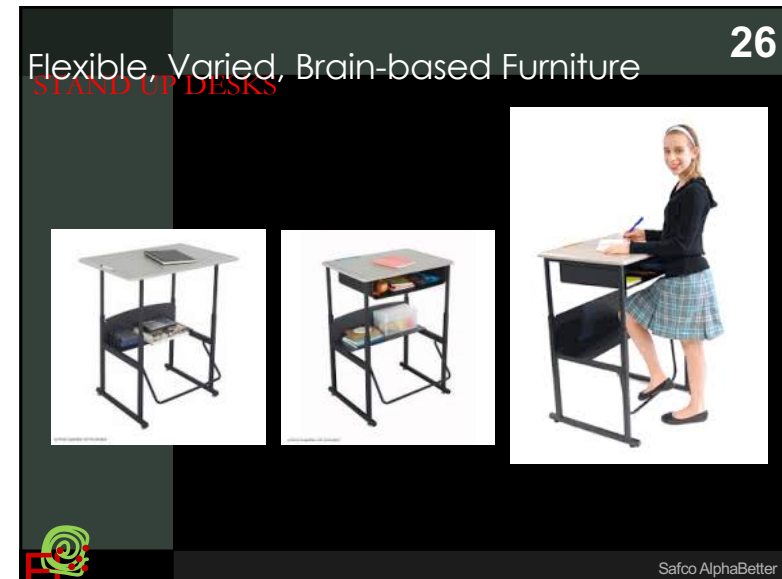
62



63



64



21st Century Learning Studios

MAKE LEARNING VISIBLE

27

High Tech High, David Stephen, Designer

69

21st Century Learning Extended Learning Area

MAKE LEARNING FLEXIBLE

28

70

Teacher Planning Centers

CEDAR SPRINGS MIDDLE SCHOOL, Cedar Springs, MI

29

Frank Locker DeJONG Educational Planners BetaDesign Architects

71

Small Learning Communities

OLD TOWN ELEMENTARY SCHOOL, Old Town ME

- Teacher Collaboration
- Community of Learners
- Authentic Assessments

EXTENDED LEARNING/COMMONS

TEACHER PLANNING CENTER

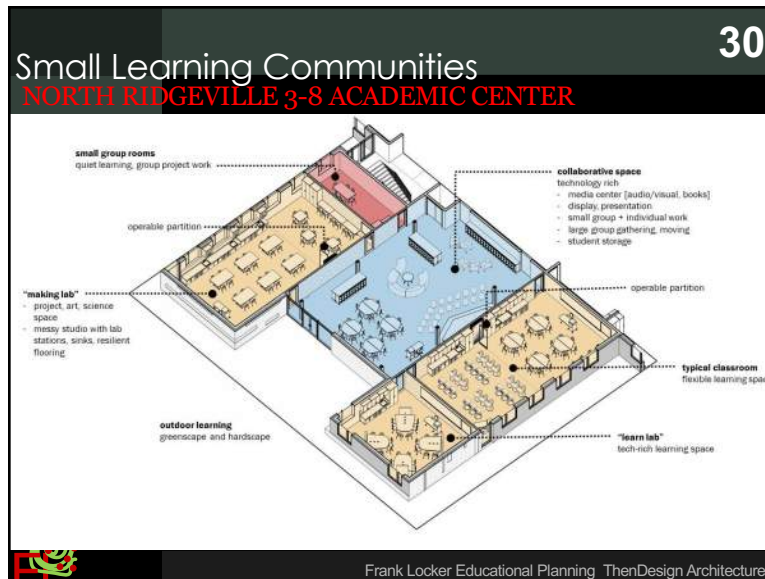
Variety of Learning Styles

Small School Culture

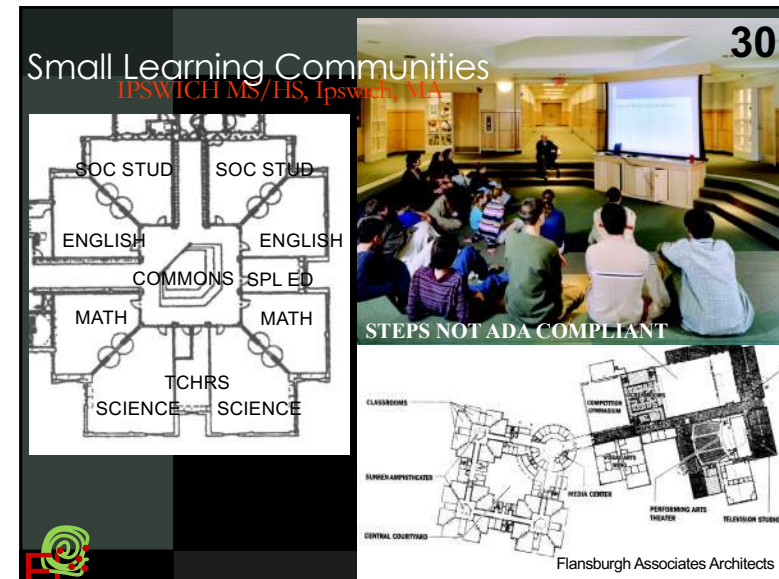
Old Town Elementary School

Frank Locker educational planner PDT Architects

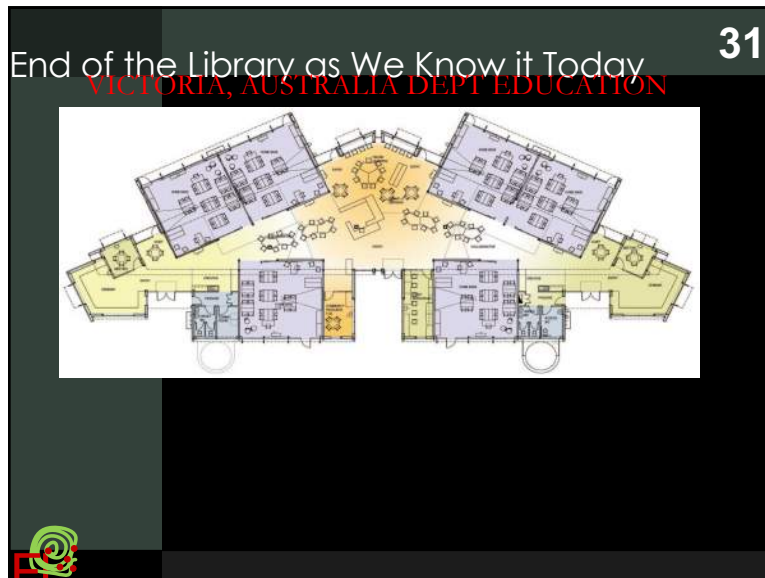
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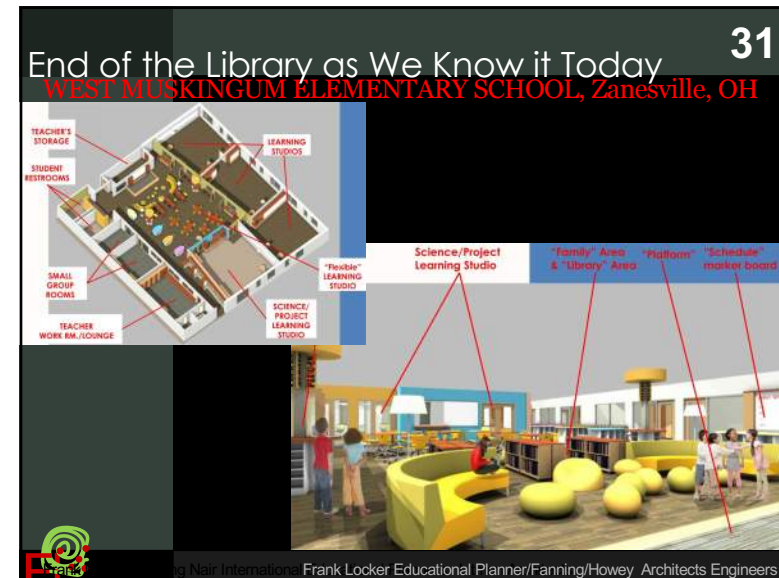
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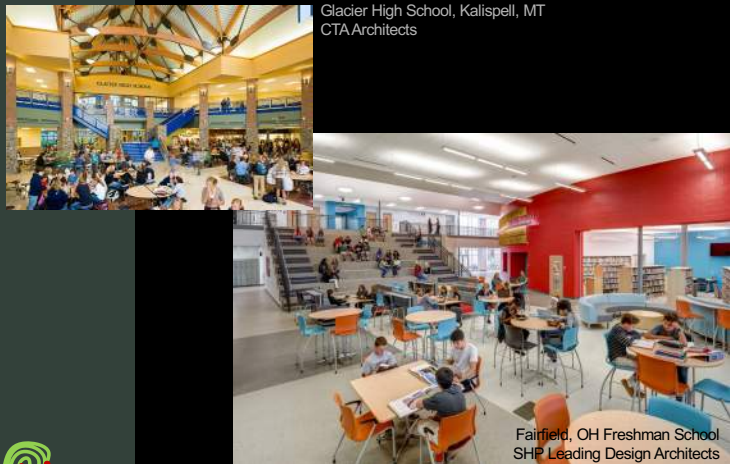


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76

End of the Cafeteria as We Know it Today 32



Glacier High School, Kalispell, MT
CTA Architects

Fairfield, OH Freshman School
SHP Leading Design Architects

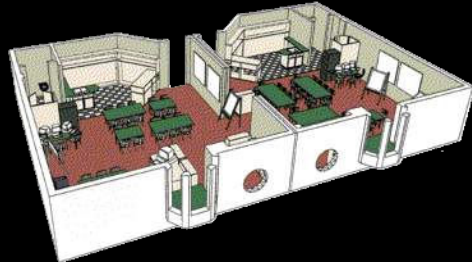
Frank Locker Educational Planning

77

The End of Isolated Teaching 33a

BLUE POINT ELEMENTARY SCHOOL, Scarborough, ME

K-2 MULTI-AGE CLASSROOMS



"How can we teach children collaboration if every adult they see in the building is working alone?"

PDT Architects

78

The End of Isolated Teaching 33b

Interdisciplinary Teaching/ Project Based Learning

NEW TECH HIGH/ NEW TECH NETWORK

- 21st Century Skills
- Standardized testing scores significantly higher than comparative schools
- High university acceptance/attendance: 89%
- 1.5X national average university graduation rate: 80%
- 2X national university enrollment in science + math: 40%



NTD Architects

79

The End of Isolated Teaching 33b

Interdisciplinary Teaching/ Project Based Learning

NEW TECH HIGH

- Geography + Language Arts
- Computer Applications + Science
- Biology + Literature
- Math + Environmental Science
- Computer Apps + Language Arts
- Political Studies (Language Arts + Government + Economics)
- Math + Engineering
- Technology + Math
- Communication Studies (Lang Arts + Drama)
- Global Studies (Lang Arts + World History)
- American Studies (Language Arts + US History)
- Bio-Fitness (Biology + Health + PE)
- Spatial Studies (Digital Media + Geometry)



80

The End of Isolated Teaching

Interdisciplinary Teaching/ Project Based Learning

NEW TECH HIGH

33b

- Solar Energy
 - Students research heat transfer and energy transformations to design a device that would capture the sun's energy and convert it into useful energy for cooking.
- Down to Earth
 - Students investigate satellite orbits in order to determine the arc a satellite signal would cover, and use this information to find the number of satellites needed to cover the circumference of the Earth
- Iron Chef
 - Students discover how the logic of chemical stoichiometry can be used every day in the kitchen



81

The End of Isolated Teaching

Interdisciplinary Teaching/ Project Based Learning

NEW TECH NETWORK

34

NEW TECH HIGH SCHOOL STUDENTS:

Research and measurement play a central role in supporting New Tech Network schools. We conduct research and partner with external experts to document evidence demonstrating the impact of the New Tech school model. Detailed information on key research findings can be found on pages 25-26.

- ATTAIN 92% GRADUATION RATE, 9 PERCENTAGE POINTS HIGHER THAN THE NATIONAL AVERAGE**
NTN SCHOOLS HAD A HIGHER HIGH SCHOOL GRADUATION RATE OF 92% COMPARED TO THE NATIONAL AVERAGE OF 83%.
- PERSIST IN COLLEGE AT A RATE OF 82%**
THE CLASS OF 2014'S PERSISTENCE RATE ACROSS ALL INSTITUTION TYPES IS 82%, COMPARED TO THE NATIONAL AVERAGE OF 78%.
- GROW 52% MORE IN CRITICAL THINKING SKILLS**
USING THE COLLEGE AND WORK READINESS ASSESSMENT, NTN STUDENTS CONSISTENTLY DEMONSTRATED AN AVERAGE GROWTH OF 52% MORE THAN THE COMPARISON GROUPS OVER THE LAST 3 YEARS.
- SCORE HIGHER ON ACADEMIC MEASURES AND EMPLOYABILITY SKILLS**
STUDENTS WHO ATTENDED DEEPER LEARNING NETWORK SCHOOLS REPORTED HIGHER LEVELS OF INTERPERSONAL AND INTRAPERSONAL COMPETENCIES SUCH AS COLLABORATION, ACADEMIC ENGAGEMENT, MOTIVATION TO LEARN, AND SELF-EFFICACY.
- OUTPERFORM ON COLLEGE ENTRANCE AND END-OF-COURSE EXAMS**
NTN 9TH GRADERS OUTPERFORMED COMPARISON STUDENTS ON EOC MATH AND EOC ENGLISH LANGUAGE ARTS EXAMS, AND NTN 11TH GRADERS OUTPERFORMED COMPARISON STUDENTS ON ACT COMPOSITE SCORES.

New Tech Network 2017 Annual Report

82

The End of Isolated Teaching

Interdisciplinary Teaching/ Project Based Learning

NEW TECH NETWORK

33b

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New Tech Network 2017 Annual Report

83

The End of Isolated Teaching

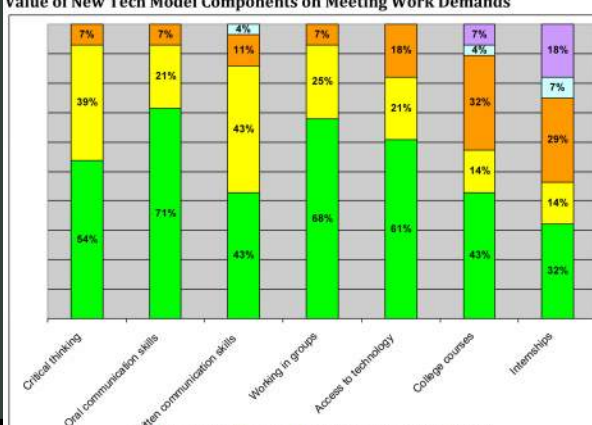
Interdisciplinary Teaching/ Project Based Learning

NEW TECH HIGH/ NEW TECH NETWORK

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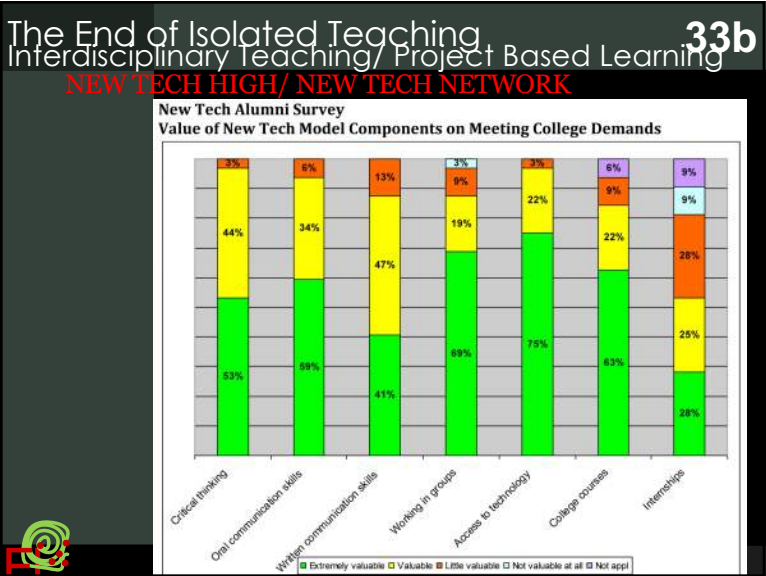
New Tech Alumni Survey

Value of New Tech Model Components on Meeting Work Demands

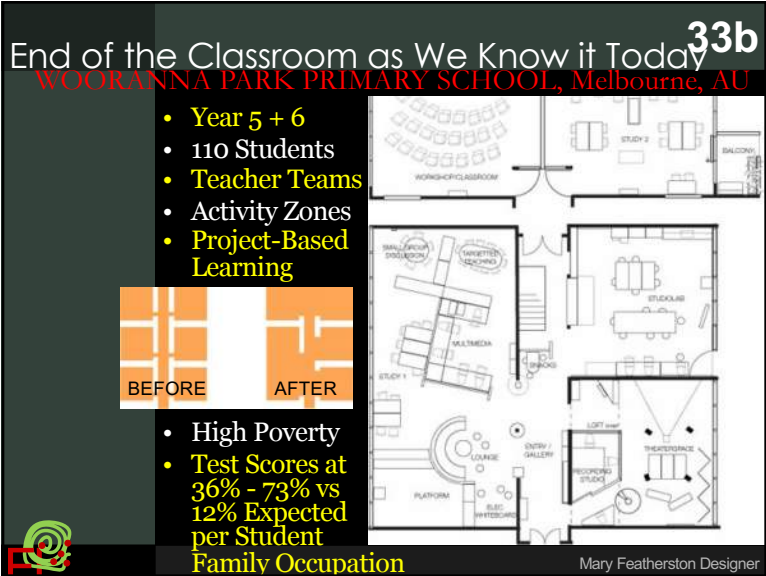


Component	Extremely valuable	Valuable	Little valuable	Not valuable at all	Not app
Critical thinking	54%	39%	7%	0%	0%
Oral communication skills	71%	21%	7%	0%	0%
Written communication skills	43%	43%	11%	4%	0%
Working in groups	68%	28%	7%	0%	0%
Access to technology	81%	21%	18%	0%	0%
College courses	43%	14%	32%	4%	7%
Internships	32%	14%	29%	7%	18%

84



85



86



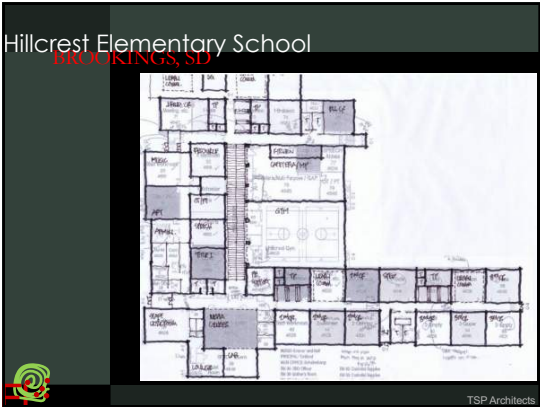
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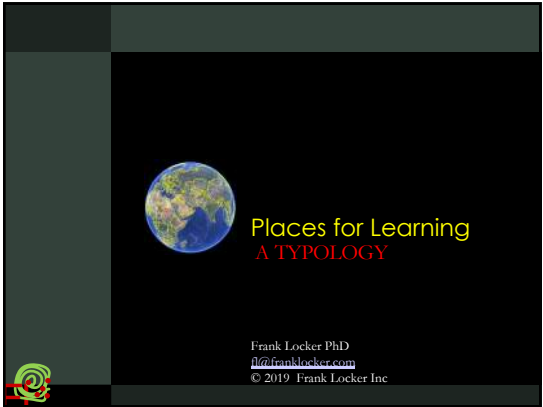
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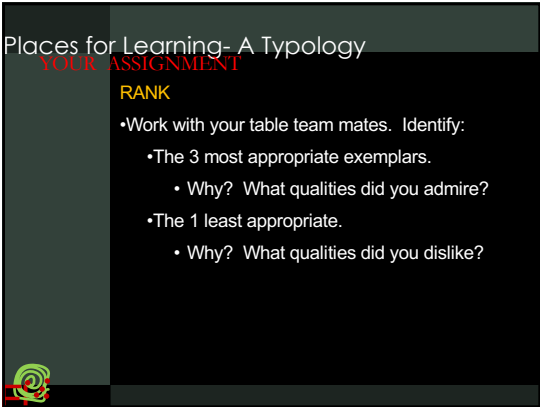
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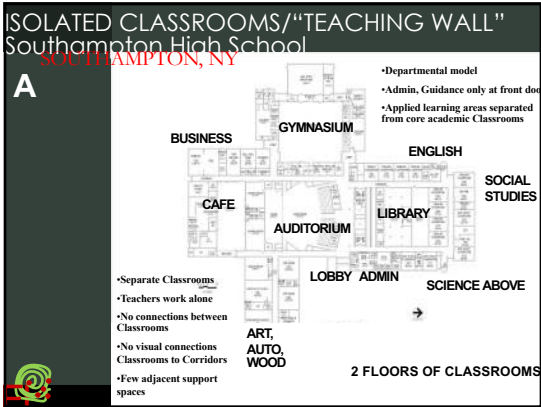
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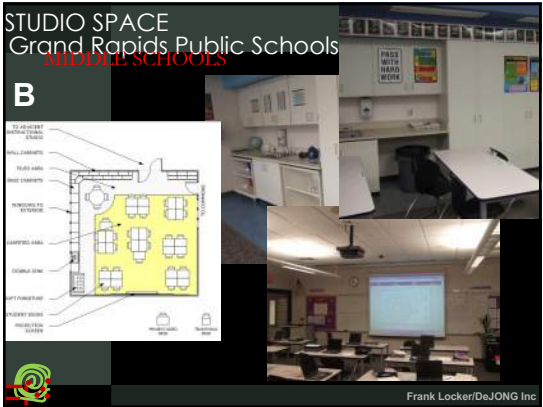
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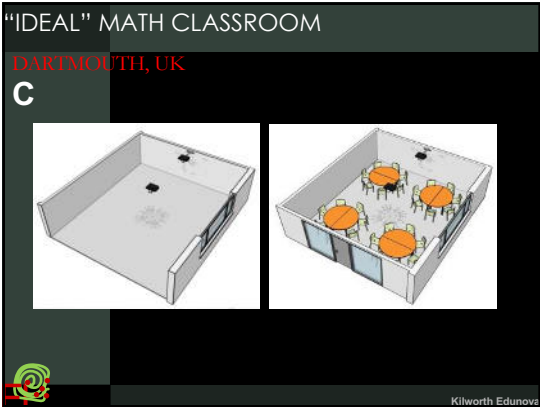
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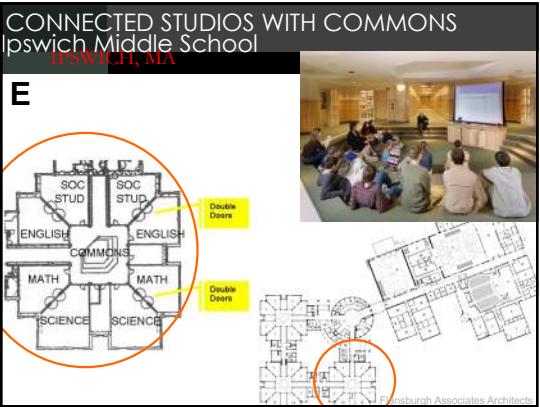
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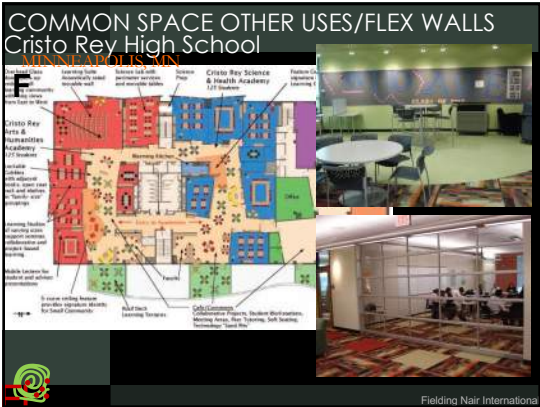
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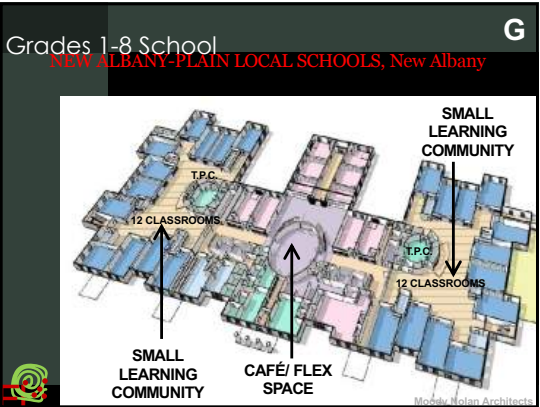
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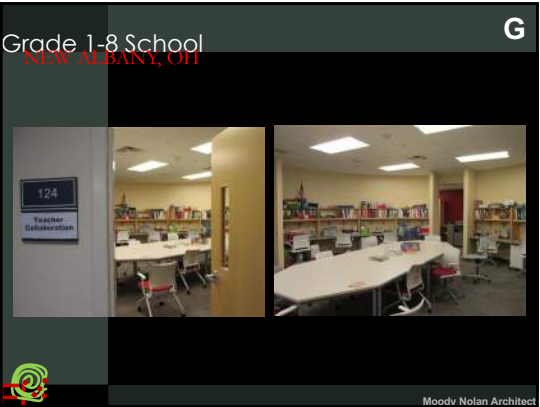
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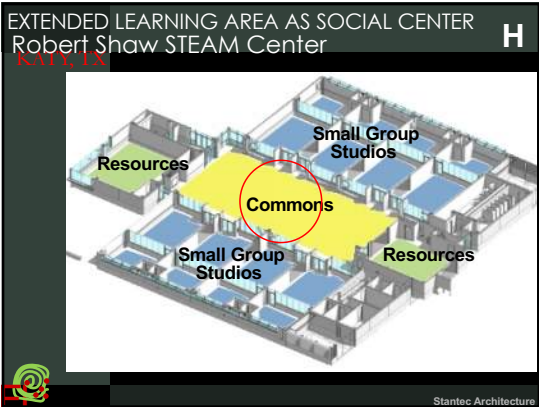
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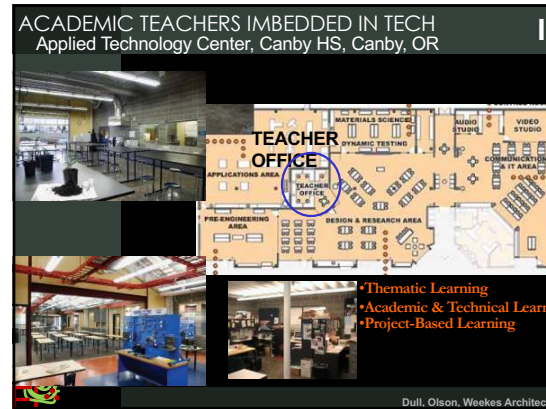
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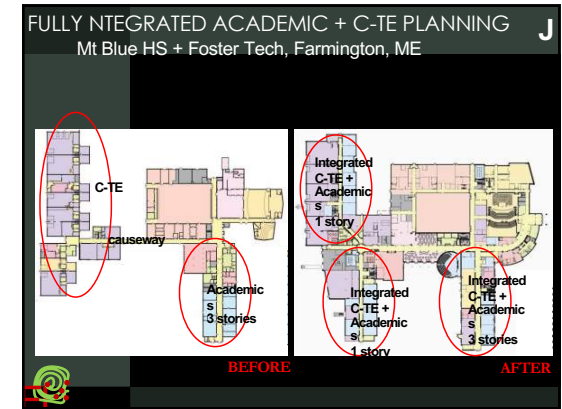
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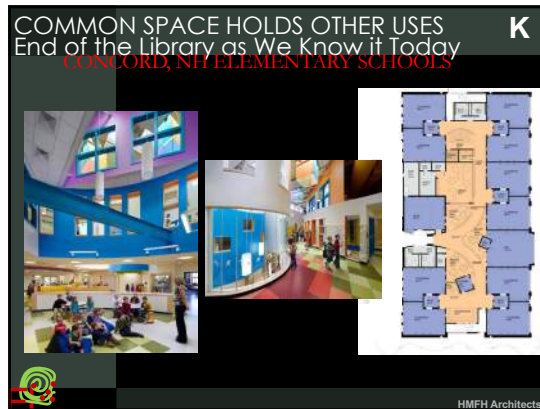
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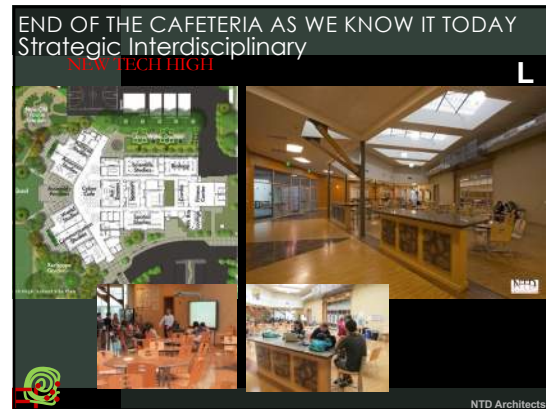
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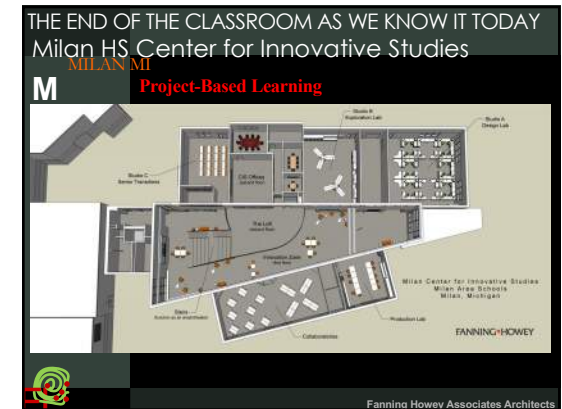
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25



26

INSTRUCTIONAL INTEGRATION

NE MET Regional Tech

1

Relevance

Inter

&

Intra

Relationships

Rewards

2

INTEGRATION

- Within Academic Content Areas
- Within Technical Content Areas
- Between Academic Content Areas
- Between Technical Content Areas
- Between Academic and Technical Content Areas
- Whole School Initiatives

3

Facility Integration Together With Learning Integration

Formal &
Informal
Meeting
Spaces

Theater

Lecture
Hall

Supplemental Program
Spaces

Cafetorium

Outdoor
Meeting
Areas

Auditorium

Educational Support Areas

Full Accessibility

*Classroom
Spaces*

Shops

Demonstration Area for Shops

Labs

Spaces for New Programs

Library

4

NEASC = High School Experience

- Continuous Improvement → Transformative /Transformational

5

Community Advisory Committees

- Technical Advisory Committees
- School Advisory Committee
- School District Committee

6

Additional Inputs

- Students
- Teachers
- Support Staff
- Administrators
- Parents
- Alumni
- Employers

7

CTE Drivers

- Educational Trends
- Performance Measures
- Economy & Jobs
- Workplace Changes
- Innovation in Educational Delivery
- Career and College Preparation

8

NE MET ??

- The choice should be – “Why I want NE MET, not reasons why I don’t ”
- What makes NE MET the place for me ?

9

Bottom Line

- Northeast MET needs an additional 140,000 sq. ft. of space for the school to meet needs projected by Chapter 74 and MA DOE & MSBA
- How can space be best allocated and utilized

10

Curriculum Integration as a commitment

- Integration is ok as a supplemental “philosophy” of Teaching and Learning
- A curriculum is not necessarily an integrated entity, but rather integrates where appropriate, while respecting the content of each area

11

Project Based Learning

■ **Let's discuss**

12



NORTHEAST METRO TECH

The annotated story of our school

IN RESPONSE TO A NEED

- An Act to Provide Further for Industrial Education: Enacted in June 1906
- Massachusetts legislation of the 1960's
- Incentives to create regional vocational schools
- 85% of construction costs to regionalize
- 50% operational aid for students
- 100% transportation costs

IT TAKES A VILLAGE

- In 1962, a drive was begun to create Regional Vocational Technical High Schools across the state, resulting in the formation of Northeast and 25 regional vocational technical, as well as, three regional agricultural schools in Massachusetts.
- Each regional VTE school is considered its own district, with a school committee, superintendent, etc, and (within state frameworks, guidelines, and accountability measures) the ability to create its own curricula and instructional policies and methods.

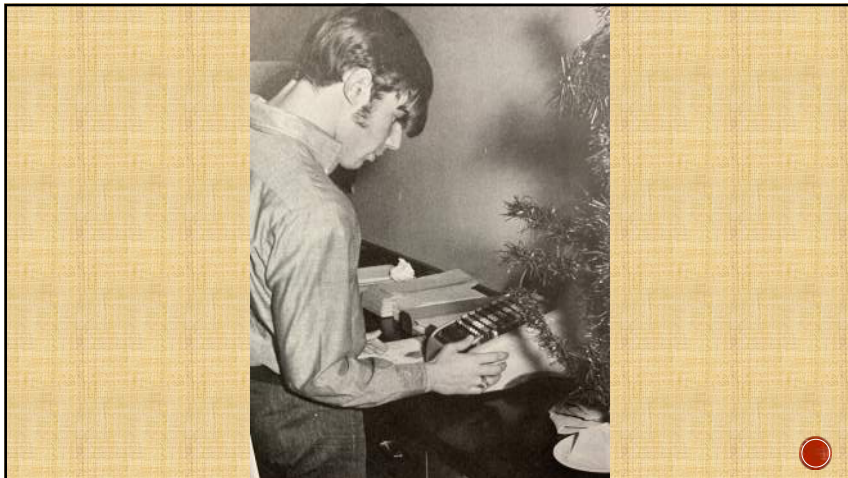


5

EARLY SUCCESS

- - Higher graduation rates
- - Better career readiness
- - Higher attendance rates
- - Growing waitlists

6



7

GROWING AND ESTABLISHING OURSELVES

- “The Voke”
- “You can’t go to college”
- “Your potential is limited”

8

FINDING OUR IDENTITY

- - Alternative to college or road to college
- - An “alternative” school vs. a choice
- - Balancing academics vs. vocational education



9

THE BRADY/BELICHECK ERA

- Extremely high waitlists
- Competitive MCAS scores
- Challenges of our success



10

HERE WE ARE!

- This meeting started fifteen years ago. Hopefully the soda isn't flat!
- Implementation from the recommendations of the three Visioning Meetings starts immediately!



11