Linking School Infrastructure to Student Success

9th School Infrastructure Regional Workshop
Inter-American Development Bank

Frank Locker PhD

fl@franklocker.com

Linking School Infrastructure to 21st Century Student Success

9th School Infrastructure Regional Workshop
Inter-American Development Bank

Frank Locker PhD
fl@franklocker.com

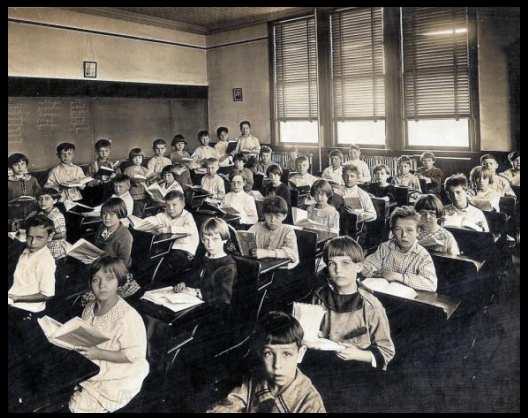
This Presentation

- Harvard University
  - *Learning Environments for Tomorrow*
    - Interdisciplinary course for educators + architects
- Ohio Facilities Construction Commission
  - *21st Century Visioning + School Transformation Workshop*
    - Training for school district leadership
- Bogota Capital District Schools
  - *21st Century Schools Infrastructure Initiative*
    - Changing the model for infrastructure + education

A Short History of American Public Schools

100 YEARS AGO

75 YEARS AGO

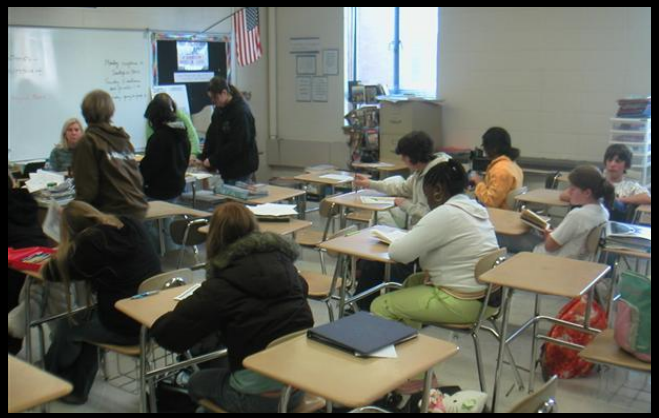


50 YEARS AGO

TODAY

A Short History of American Public Schools

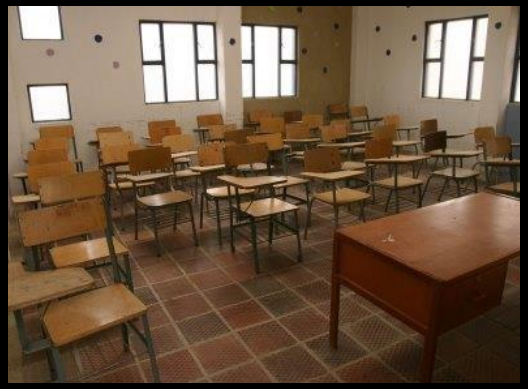
TODAY TODAY



TODAY TODAY

A Short History of Colombian Public Schools

TODAY TODAY



TODAY TODAY

Photos courtesy Semana Education, Colombia

A Short Future of American Public Schools

TODAY TODAY

TODAY TODAY

A Short Future of Bogota Public Schools

SOON SOON

SOON SOON

21st Century Learning

20th CENTURY TEACHER CENTERED

- Focus on teaching efficiency
- Producing workers for an industrial age

21st CENTURY STUDENT CENTERED

- Focus on learning effectiveness
- Producing citizens for a post-industrial age

21st Century Learning EDUCATION

20th CENTURY TEACHER CENTERED	21st CENTURY STUDENT CENTERED
•Rigid curriculum + schedule	•Flexible curriculum + schedule
•No intentional relationships	•Build relationships
•Subject content knowledge	•Skills as well as content
•Teacher is holder of knowledge	•Teacher is a guide
•Teacher works alone	•Teacher collaboration + teaming
•"Broadcast" teaching	•Differentiated learning
•Content is abstracted	•Content is real, relevant
•Subjects taught separately	•Integrated/interdisciplinary teaching + learning
•Passive learning	•Active, applied learning
•Mostly direct instruction + papers	•Project-based learning
•Students work alone	•Students learn in teams

21st Century Learning INFRASTRUCTURE

20th CENTURY TEACHER CENTERED	21st CENTURY STUDENT CENTERED
•One model of education	•Multiple models of education
•Isolated rooms	•Suites of learning spaces
•Supports passive learning	•Supports active learning
•Rigid	•Flexible
•Teachers only work alone	•Teachers can work together
•Grade level + curriculum based plans	•Relationship-based plans
•No attention to student social life	•Student social life respected
•Public not expected in the building	•Public embraced as learners, co-teachers, mentors

Measures of Student Success?

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?

Measures of Student Success?

HOW DO WE KNOW WE ARE DOING THE RIGHT THING?

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

Why 21st Century Learning? FUTURE OF WORK

THOMAS FREY, GOOGLE FUTURIST

As a rule of thumb, 60% of the jobs 10 years from now haven't been invented 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

Why 21st Century Learning? FUTURE OF WORK

THOMAS FREY, GOOGLE FUTURIST

As a rule of thumb, 60% of the jobs 10 years from now haven't been invented 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

Why 21st Century Learning? FUTURE OF WORK

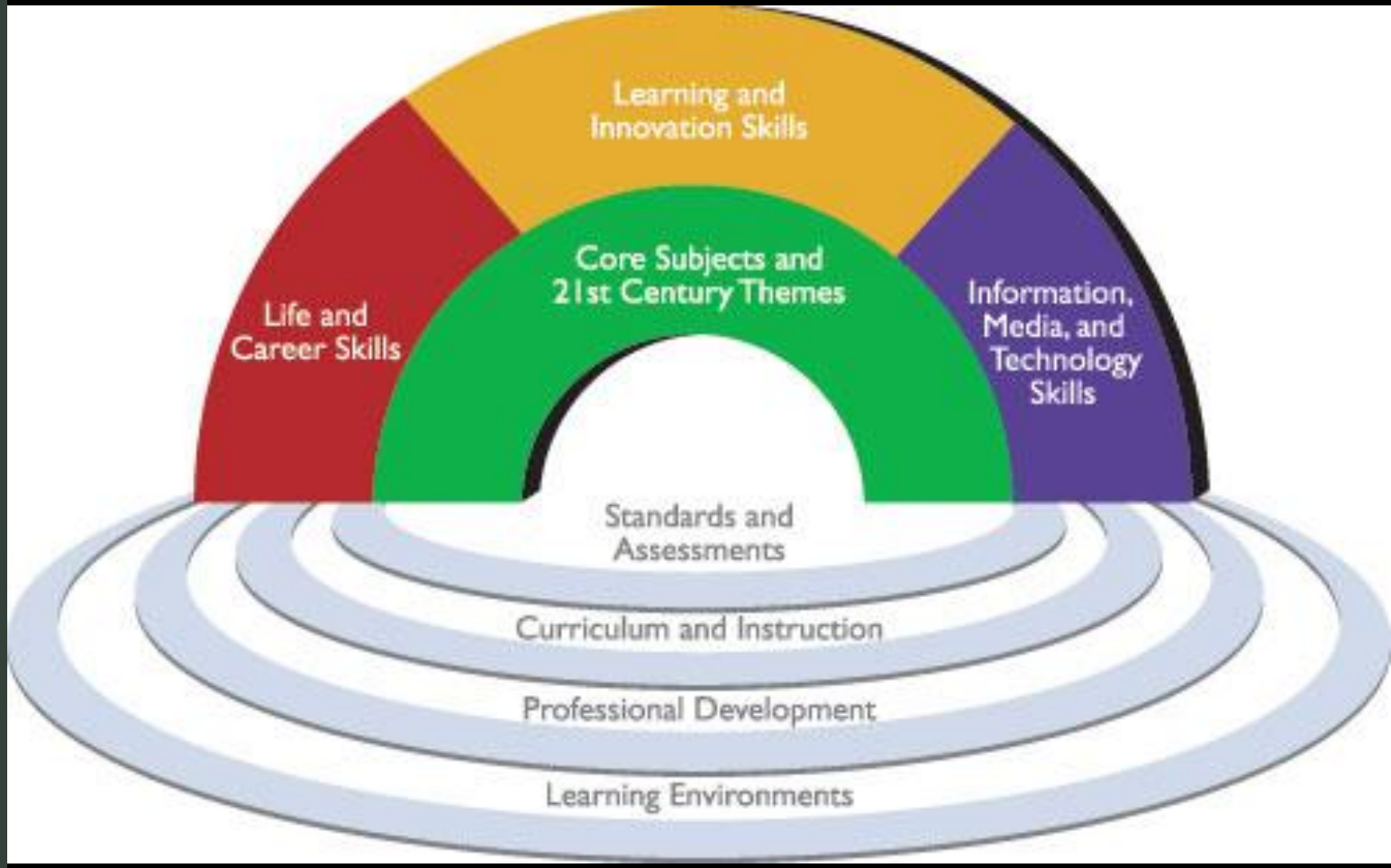
THOMAS FREY, GOOGLE FUTURIST

2030 and beyond.

35. Tree-Jackers
37. Extinction Revivalists
44. Time Brokers – Time Bank Traders
54. Amnesia Specialists

Why 21st Century Learning?

PARTNERSHIP FOR 21ST CENTURY SKILLS



Why 21st Century Learning?

PARTNERSHIP FOR 21ST CENTURY SKILLS

CORE ACADEMICAREAS

- English/Reading
- World Languages
- The Arts
- Mathematics
- Science
- Geography
- History
- Government/Civics

21ST CENTURY THEMES

- Global Awareness
- Financial, Economic, Business + Entrepreneurial Literacy
- Civic Literacy
- Health Literacy

Global Awareness =
Geography + Languages + History + Sociology + Music + Art

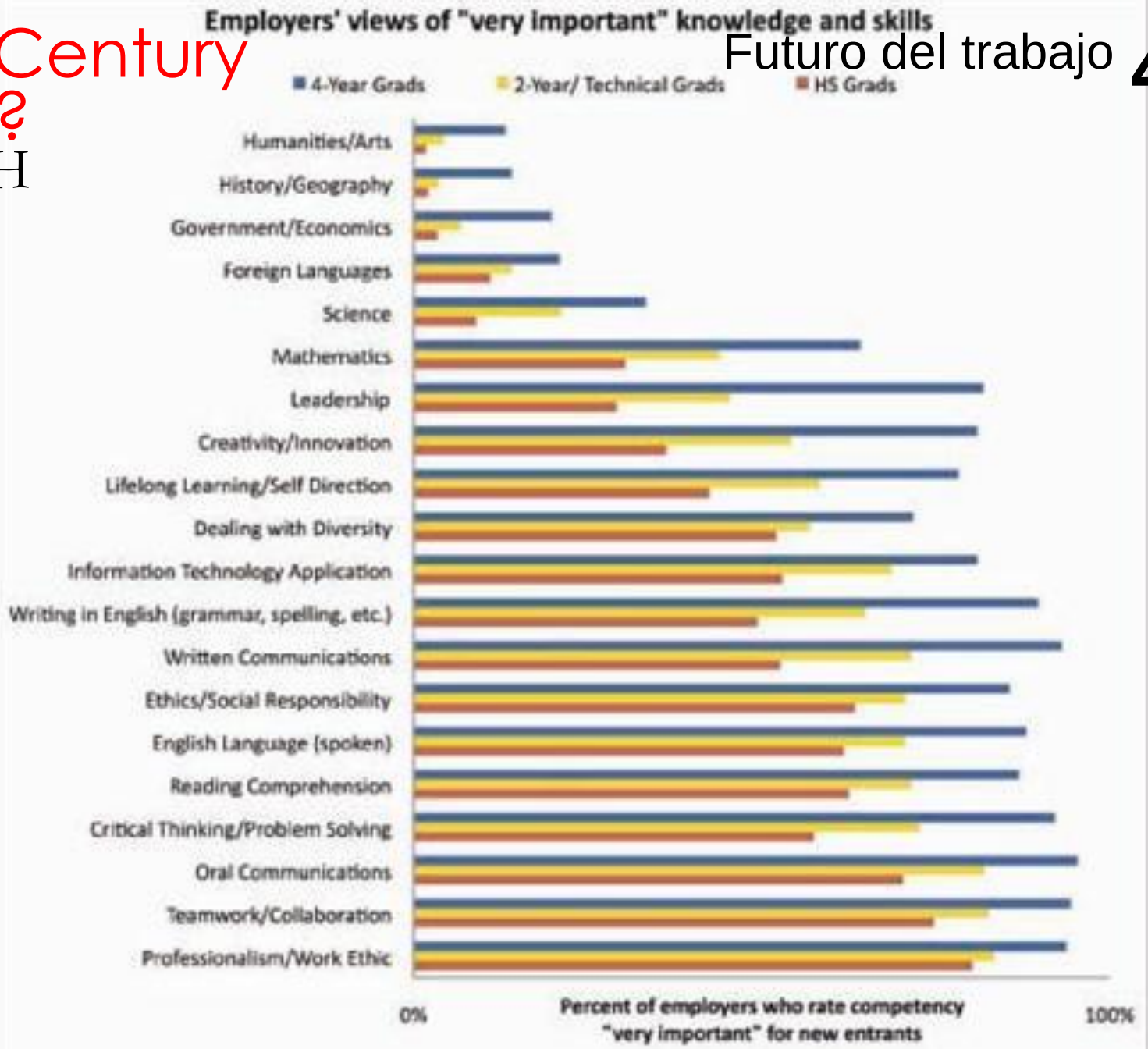
Why 21st Century Learning?

PARTNERSHIP FOR 21ST CENTURY SKILLS
THE FOUR 'Cs"

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

Why 21st Century Learning?

RESEARCH

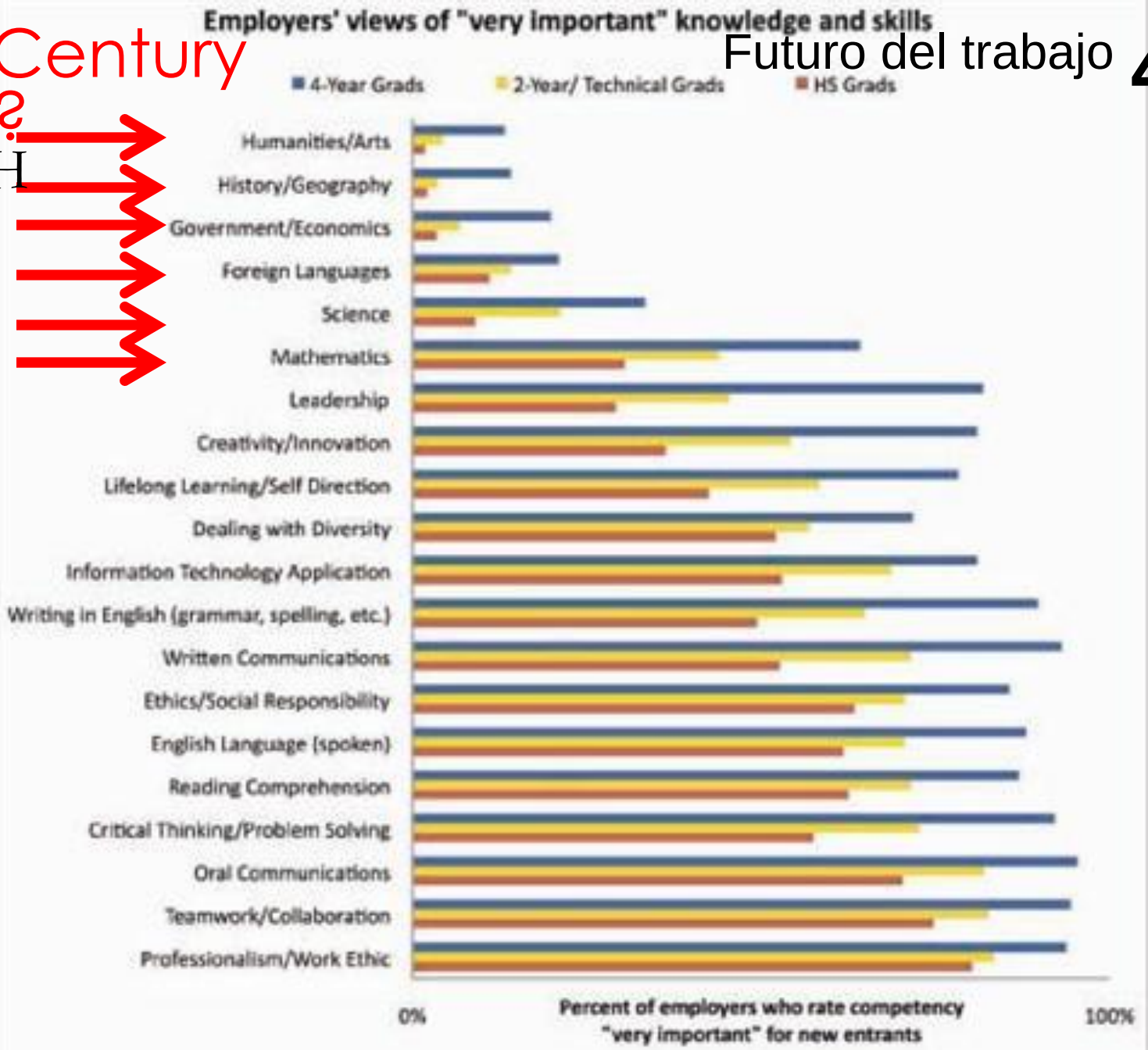


Craig Jerald: Defining a 21st Century Education

Source: Conference Board. (2006). *Are they really ready to work?* New York: Author. (p. 21, Tables 3-5).
Categories are ranked according to the average of the three bars.

Why 21st Century Learning?

RESEARCH

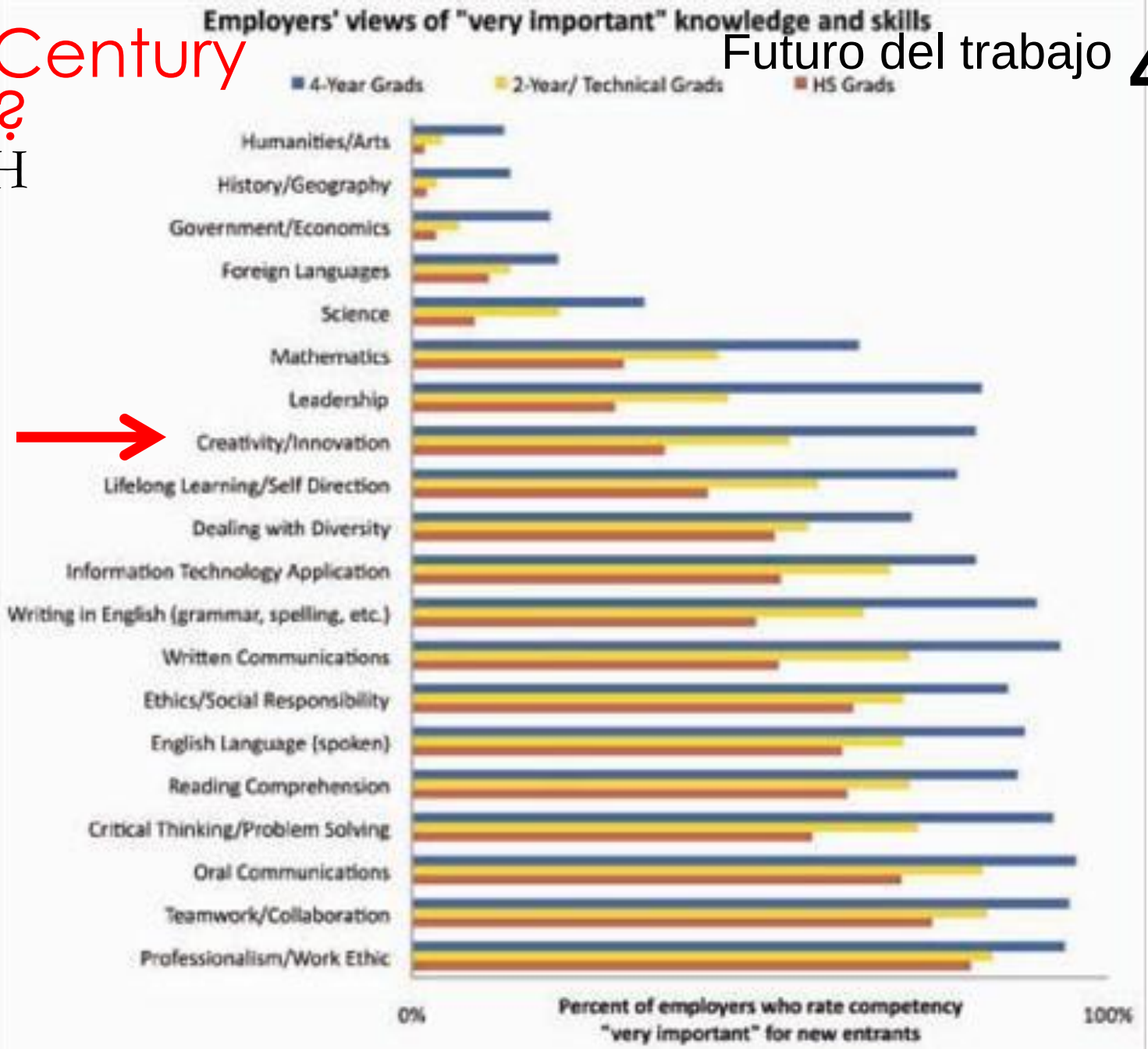


Craig Jerald: Defining a 21st Century Education

Source: Conference Board. (2006). *Are they really ready to work?* New York: Author. (p. 21, Tables 3-5).
Categories are ranked according to the average of the three bars.

Why 21st Century Learning?

RESEARCH

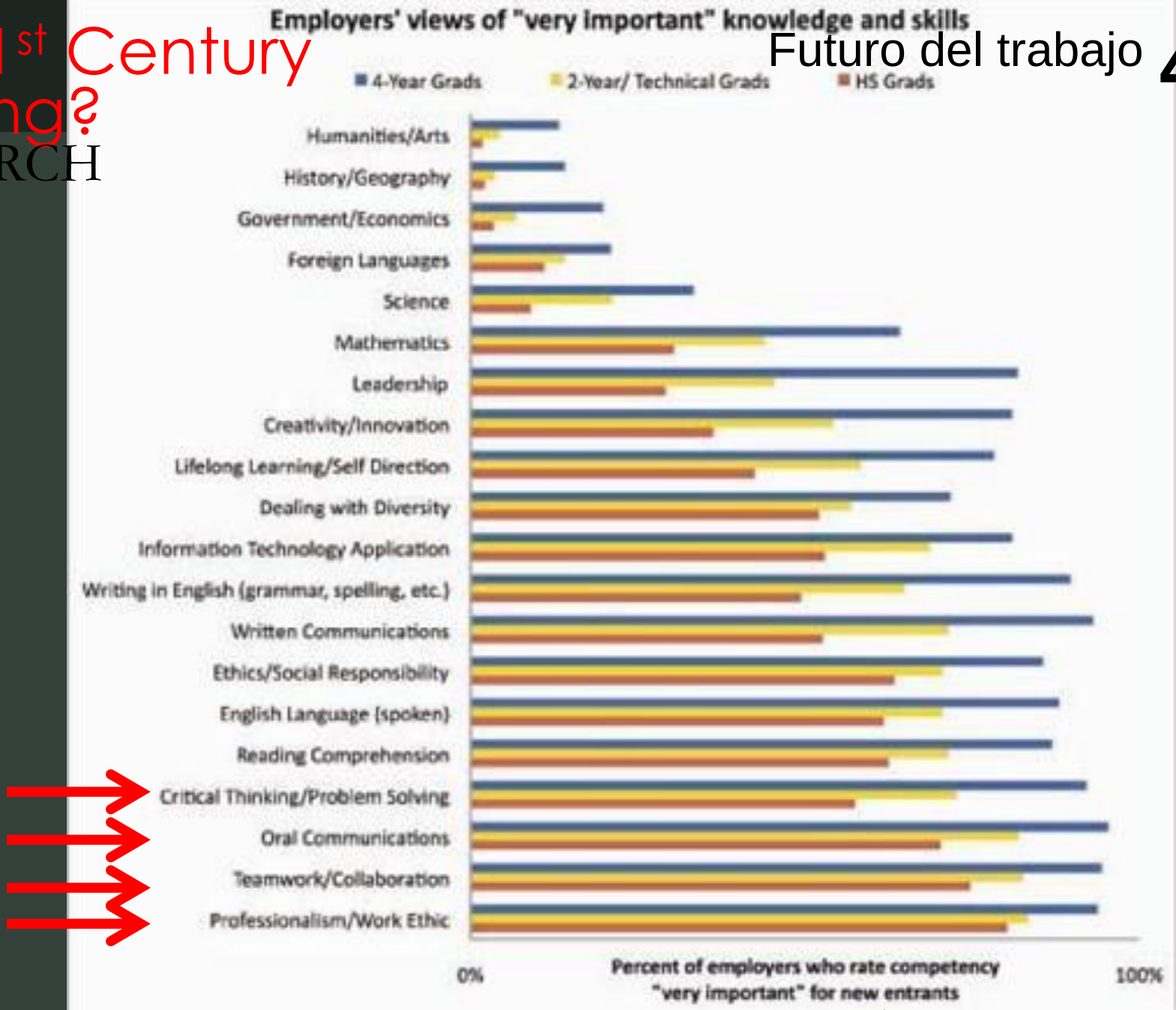


Craig Jerald: Defining a 21st Century Education

Source: Conference Board. (2006). *Are they really ready to work?* New York: Author. (p. 21, Tables 3-5).
Categories are ranked according to the average of the three bars.

Why 21st Century Learning?

RESEARCH

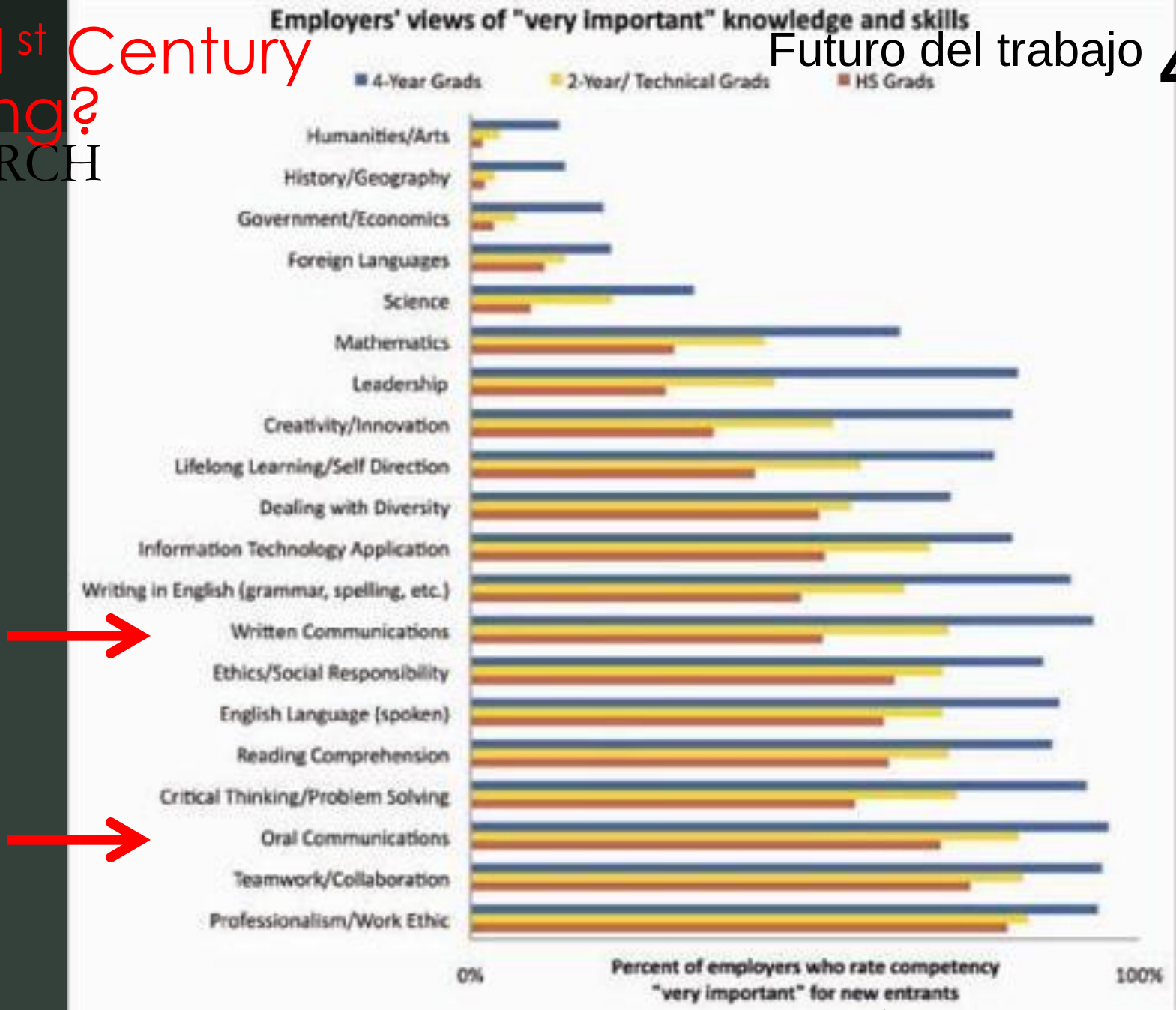


Craig Jerald: Defining a 21st Century Education

Source: Conference Board. (2006). *Are they really ready to work?* New York: Author. (p. 21, Tables 3-5).
Categories are ranked according to the average of the three bars.

Why 21st Century Learning?

RESEARCH

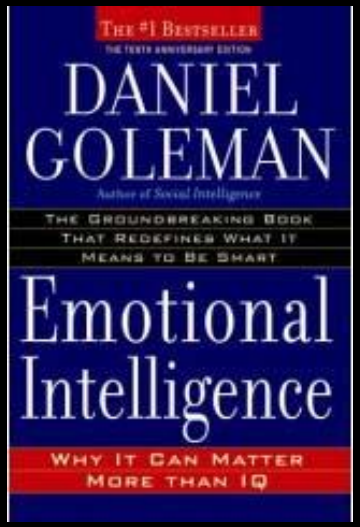


Craig Jerald: Defining a 21st Century Education

Source: Conference Board. (2006). *Are they really ready to work?* New York: Author. (p. 21, Tables 3-5).
Categories are ranked according to the average of the three bars.

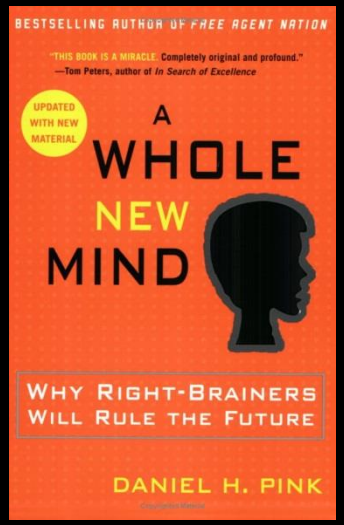
Daniel Goleman

Emotional Intelligence



21st Century Learning

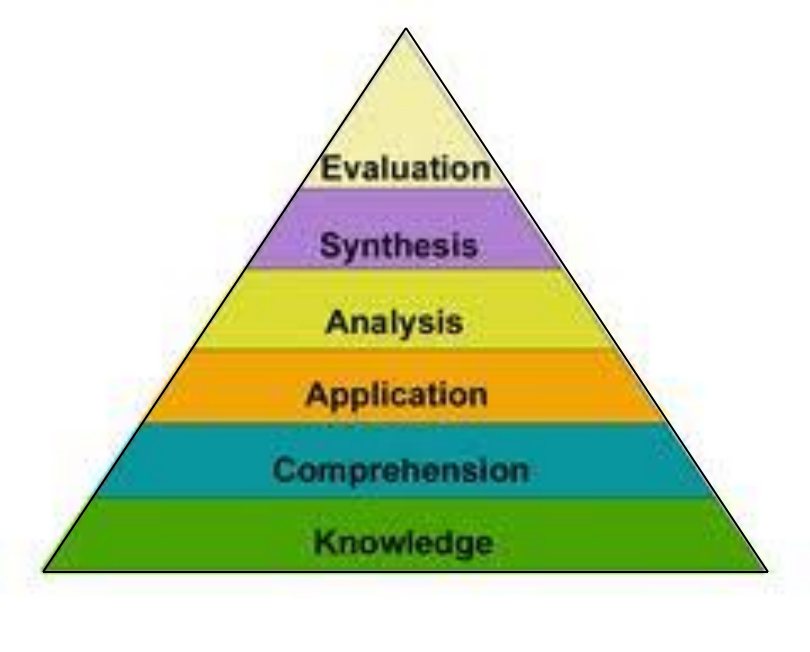
Daniel Pink
A Whole New Mind

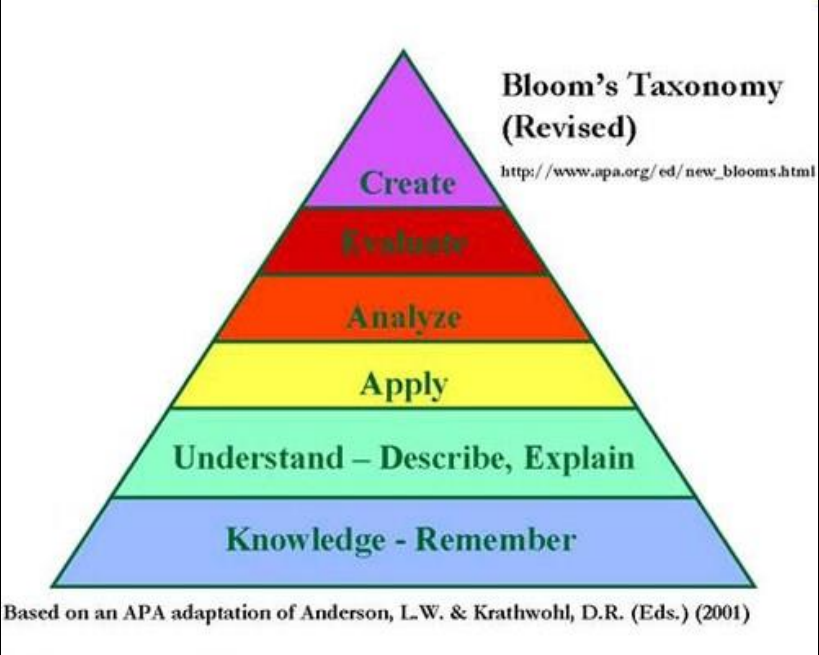


La creatividad, la Revisión de la taxonomía de Bloom

21st Century Learning

BLOOM'S TAXONOMY



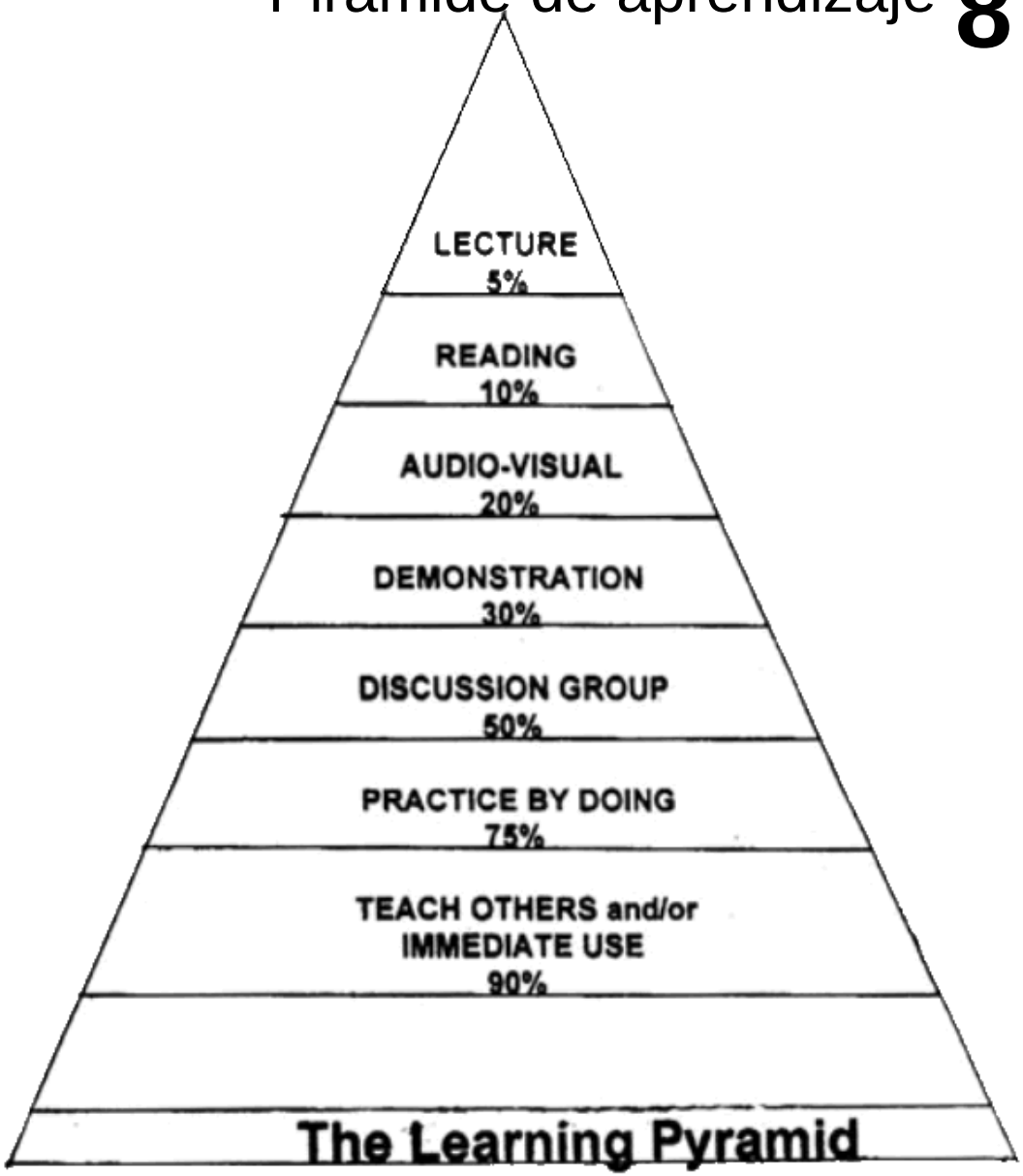


21st Century Learnin

LEARNING PYRAMID

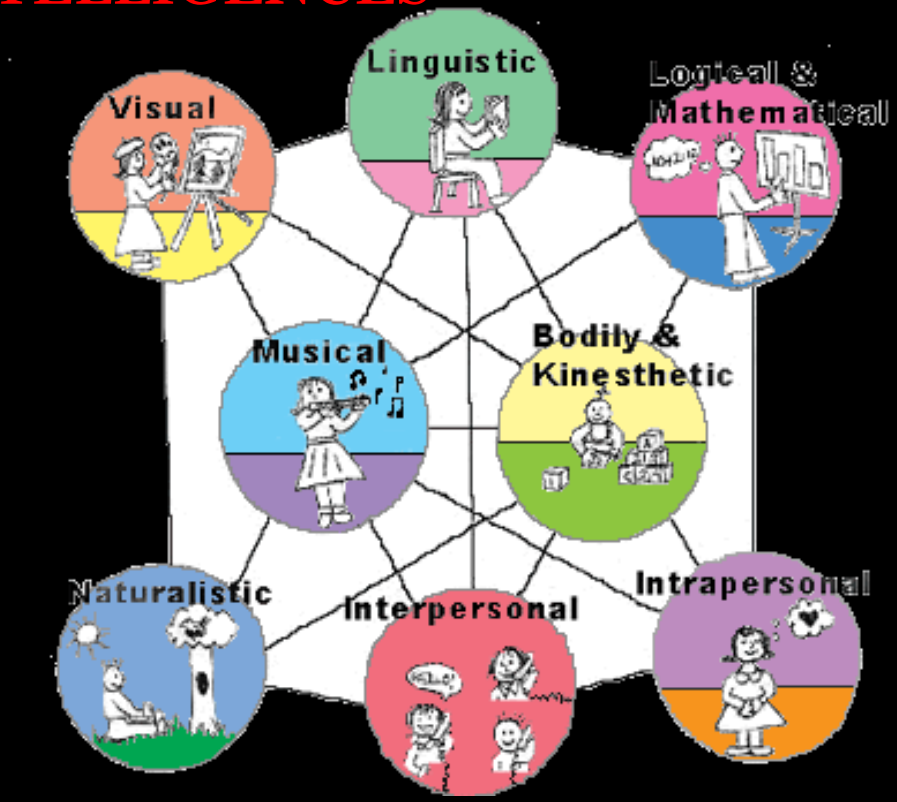
Rate of retention of different modes of learning

ACTIVE LEARNING + RESPONSIBILITY CREATES MORE RETENTION THAN PASSIVE LEARNING



21st Century Learning

MULTIPLE INTELLIGENCES

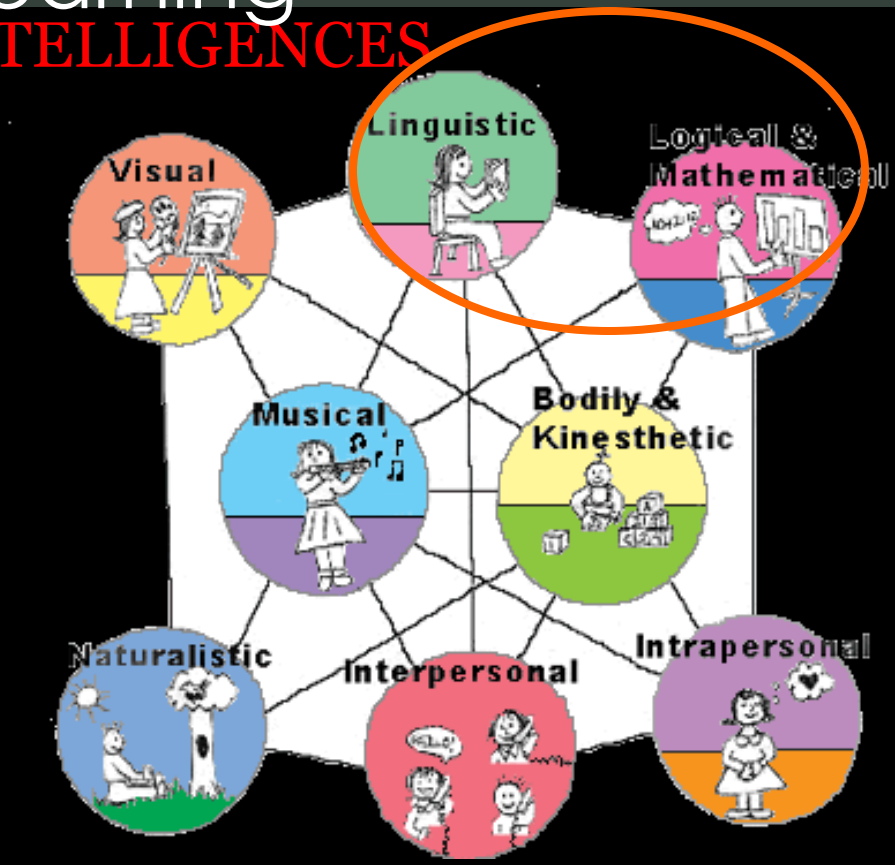


Howard Gardner

- 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

21st Century Learning

MULTIPLE INTELLIGENCES

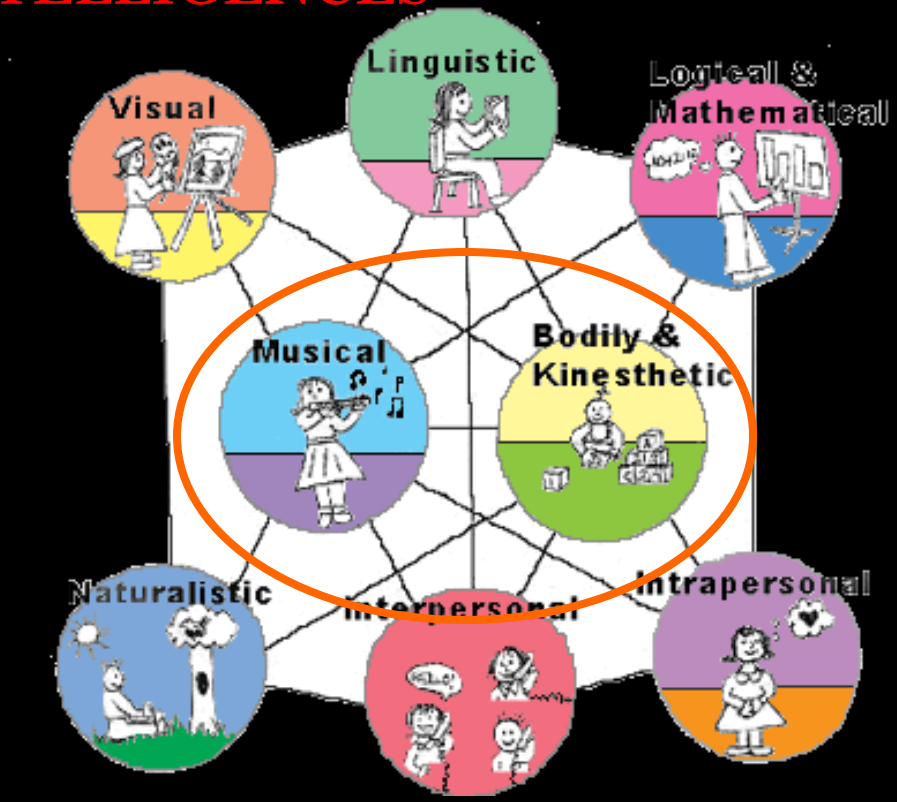


Howard Gardner

- 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

21st Century Learning

MULTIPLE INTELLIGENCES

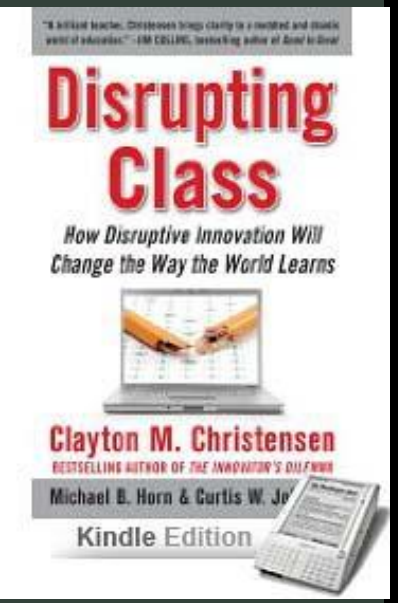


Howard Gardner

- 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

21st Century Learning

COMPUTER LEARNING



DISRUPTING CLASS

Clayton Christensen

- By 2014, 25% of HS courses will be on line
- By 2019, 50% of HS courses will be on line

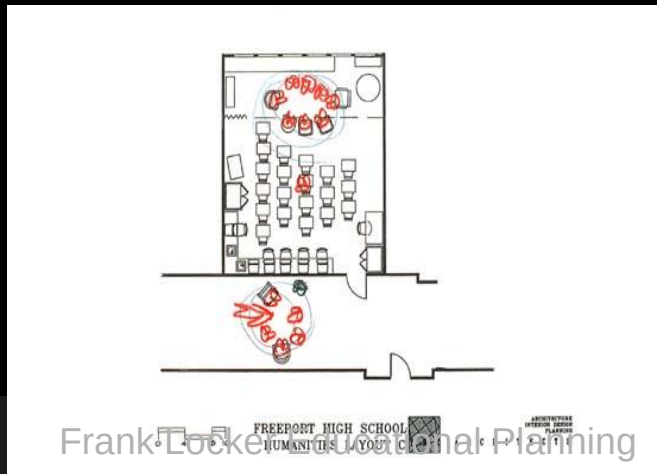
21st Century Learning

INTERDISCIPLINARY

INTEGRATED ARTS

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

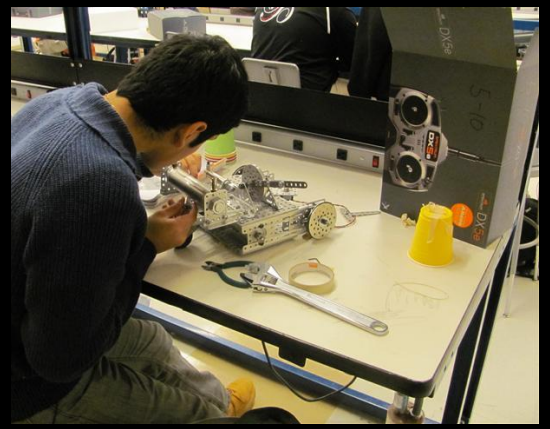
"Give me a classroom big enough to dance in."



21st Century Learning INTERDISCIPLINARY

STEM/SCIENCE-TECHNOLOGY-ENGINEERING-MATH

ADD THE ARTS AND GET STEAM

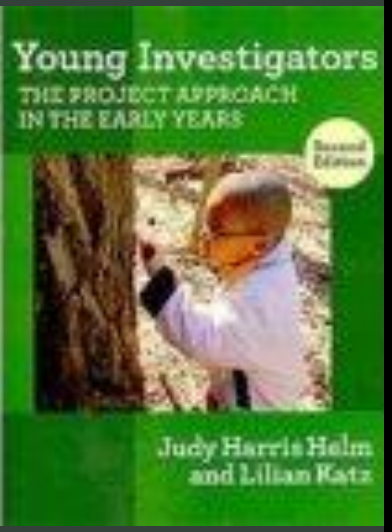


STEM Program, Newton North High School

Hanover High School, Hanover, MA

21st Century Learning

PROJECT-BASED LEARNING



PBL is an effective method for teaching students complex processes and procedures such as planning, communicating, problem solving, and decision making.

PBL, in comparison to other instructional methods, has value for enhancing the quality of students' learning in subject matter areas, leading to claim that learning higher-level cognitive skills via PBL is associated with increased capability on the part of students for applying that learning in novel, problem solving contexts.

21st Century Learning

AFRICA DISCOVERY PROJECT

PROJECT-BASED LEARNING

21st Century Skills in Action: Manchester Memorial School, Gr. 6

A social studies unit on Africa was used to teach global awareness, technology skills, music and art at this Manchester-Essex school. Each student chose an African country to study in depth, did their research online, created their final projects using Powerpoint and presented them using SMART Boards. While this project was ongoing, students discussed and constructed African masks in art class, and learned about and practiced African drumming in Music class. More on this program: http://www.doe.mass.edu/edtech/practices/manchester/intro.htm.

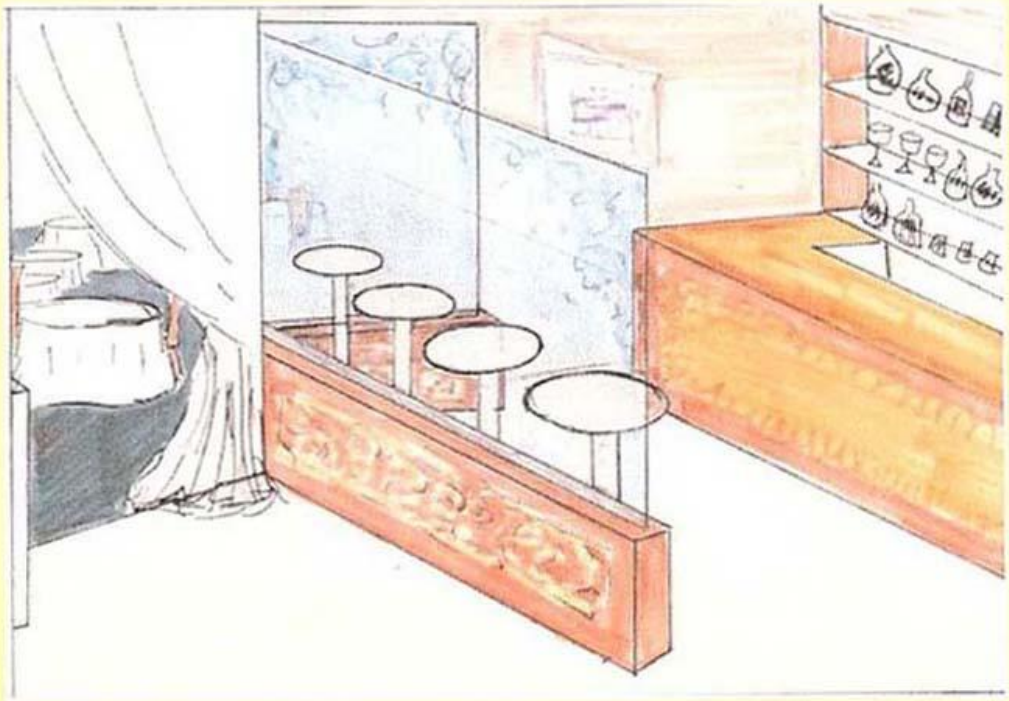
21st century skills used in this project: global awareness, creativity, technology, collaboration, communication, problem solving

21st Century Learning

CAFÉ PARISIEN

PROJECT-BASED LEARNING

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.

Café Parisien

ARLINGTON, MA, HIGH SCHOOL

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”

Café Parisien

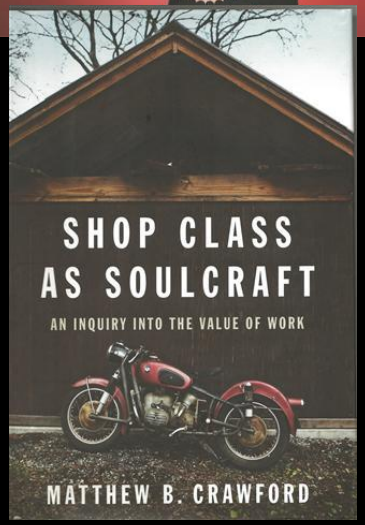
ARLINGTON, MA, HIGH SCHOOL

Café Parisien

ARLINGTON, MA, HIGH SCHOOL

21st Century Learning

Wired Magazine



Matthew Crawford

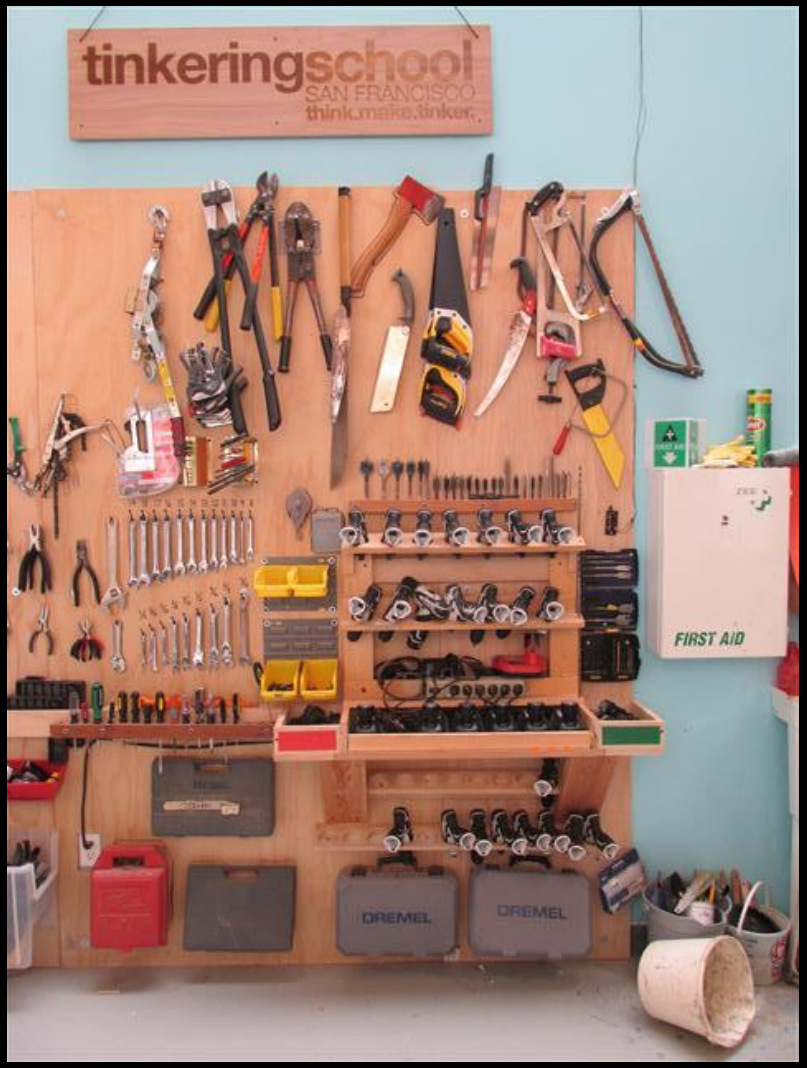
Shop Class as Soulcraft

21st Century Learning

MAKING THINGS TO LEARN, DESIGN THINKING

21st Century Learning

MAKING THINGS TO LEARN, DESIGN THINKING



Transformación de la escuela + apa Desarrollo 14

School Transformation + Development Map

TRANSFORMACION DEL COLEGIO + MAPA DE DESARROLLO

Manteniendo la Tradición 1	Comenzando el Cambio 2	Progresando 3	Transformando 4	Transformado 5
Incluye las prácticas mostradas abajo	Incluye las prácticas mostradas abajo	Incluye las prácticas mostradas abajo	Incluye las prácticas mostradas abajo	Incluye las prácticas mostradas abajo

© 2016 Frank Locker Inc fl@franklocker.com

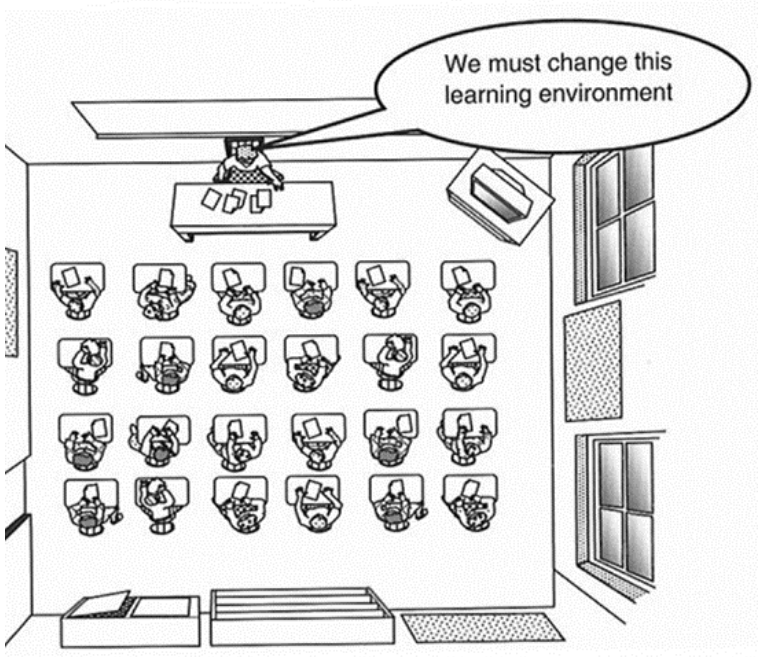
Col 1 = 1 point
Col 2 = 2 points
Col 3 = 3 points
Col 4 = 4 points
Col 5 = 5 points
Average point value for multi-column issues

#	Área	ENFOQUE DE LA EDUCACION (1)	N	F	ENFOQUE DE LA EDUCACION (2)	N	F	ENFOQUE DE LA EDUCACION (3)	N	F	ENFOQUE DE LA EDUCACION (4)	N	F	ENFOQUE DE LA EDUCACION (5)	N	F	TOTALS NOW	TOTALS FUTURE
		TODOS LOS GRADOS			TODOS LOS GRADOS			TODOS LOS GRADOS			TODOS LOS GRADOS			TODOS LOS GRADOS				
		INSTRUCCION			INSTRUCCION			INSTRUCCION			INSTRUCCION			INSTRUCCION				
3	DIFERENCIAS	Hay poco o ningún reconocimiento de la comprensión de los estudiantes o seguimiento			Como en la columna 1 pero con reconocimiento de estilos de aprendizaje			Inteligencias múltiples y estilos de aprendizaje respetados por instrucción diferenciada						Inteligencia múltiple + estilos de aprendizaje utilizados como base del aprendizaje social del estudiante				
4	APRENDIZAJE PERSONAL	Enseñanza masiva: la misma para todos los estudiantes del salón			Ocasionalmente hay instrucción por niveles para algunas actividades			Instrucción diferenciada como el principal enfoque						Planes personalizados de aprendizaje; estudiantes inician proyectos				
5	COLABORACION	Los estudiantes aprenden solos			Ocasionalmente hay trabajo por parejas			Ocasionalmente se trabaja en equipos			Los estudiantes regularmente trabajan en equipos grandes.			Los estudiantes aprenden 75% en equipo				
6	EQUIPOS DE PROFESORES	Sólo se maneja el programa de inmersión			Planeaciones conjuntas para coordinar el currículo de los estudiantes			Los profesores cambian clases para compartir instrucciones pero no trabajan juntos			Los profesores en ocasiones integran el trabajo curricular en un mismo lugar + al mismo tiempo.			Los profesores regularmente enseñan en sincronía en los equipos coordinados				
9	TECNOLOGIA	Casi ningún uso de computadores			Los computadores son vistos como una herramienta adicionada para matemáticas y escritura			Los computadores son también usados para aprender programas e investigar en la web			Los computadores son utilizados en el aprendizaje			Los programas de aprendizaje, web, acceso virtual son inseparables del aprendizaje				
11	ENTREGA	Instrucción directa casi exclusivamente			Predomina la instrucción directa con algo de discusión			Instrucción directa con discusiones frecuentes			Instrucción directa, discusión en grupo, + la solución de algunos problemas			Aprendizaje basado en proyectos, discusiones, + "just-in-time" instrucción directa				
14	QUIEN ENSEÑA	Clase magistral			El profesor con su asistente son los que enseñan			Los estudiantes también enseñan en parejas o grupos de trabajo			Los estudiantes se enseñan unos a otros en un ambiente basado en proyectos			Los estudiantes regularmente enseñan a otros; "expertos" externos para proyectos				
15	HACIENDO EL APRENDIZAJE VISIBLE	No hay trabajo expuesto afuera del salón			El aprendizaje se expone (en su mayoría arte o música) a través de eventos			Se hacen eventos conmemorativos enfocados en el aprendizaje			Aprendizaje visible a través de las evaluaciones auténticas, "trofeos" educativos			Aprendizaje altamente visible a través de todos los aspectos de la vida escolar				
		EVALUACION DEL CURRICULO			EVALUACION DEL CURRICULO			EVALUACION DEL CURRICULO			EVALUACION DEL CURRICULO			EVALUACION DEL CURRICULO				
16	EVALUACIONES	Los estudiantes están muy poco informados sobre criterios de evaluación			Los estudiantes están informados acerca de los criterios de evaluación			Los estudiantes conocen las rúbricas para las exposiciones, presentaciones, exámenes			El currículo está estandarizado con investigación ocasional + habilidades sociales, habilidades del siglo 21			"Expertos" + estudiantes también evalúan con rúbricas				
21	CONOCIMIENTO	Currículo enfocado a la memorización			Ocasionalmente actividades asignadas con respuestas indeterminadas									Problemas que no tienen una sola respuesta; la resolución de problemas es el enfoque				
22	TEXTOS	El currículo es el libro de texto y no hay conexión entre disciplinas			Libros de textos apoyados con materiales auténticos			Una gran variedad de enfoques curriculares determinados por el profesor			Variedad de enfoques curriculares, en gran parte determinados por el distrito			Los libros de texto utilizados sólo como recursos de apoyo				
29	PLANEACION CONJUNTA	No hay tiempo para la planeación conjunta			Planeación por departamentos			Planeación en equipo de profesores						Los profesores desarrollan sus proyectos para dar la instrucción				
		CONSTRUCCION DE RELACION			CONSTRUCCION DE RELACION			CONSTRUCCION DE RELACION			CONSTRUCCION DE RELACION			CONSTRUCCION DE RELACION				
		BACHILLERATO ALTO			BACHILLERATO ALTO			BACHILLERATO ALTO			BACHILLERATO ALTO			BACHILLERATO ALTO				
41	ORGANIZACION DEL COLEGIO	Estructura organizada por departamentos			Departamento con programa especial (proyecto Senior)			Organización mixta, eje departamental con casa de noveno						Comunidades pequeñas de aprendizaje con departamentos para mantener los estándares del currículo				
																EDUCATIONAL DELIVERY TOTAL OVERALL SCORE		
																EDUCATIONAL DELIVERY AVERAGE OVERALL SCORE		

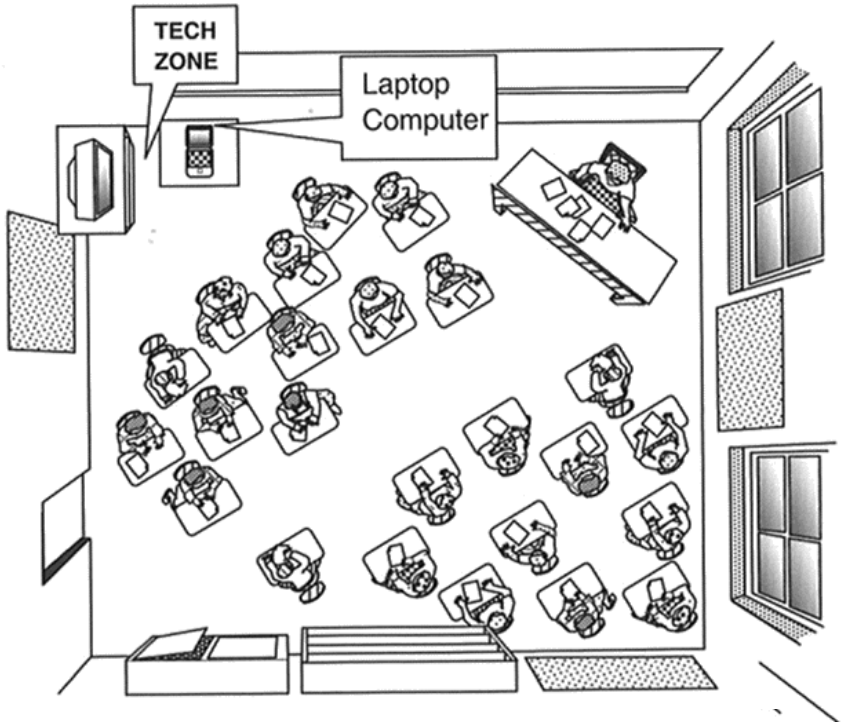
Changing the Educational Model

FROM TEACHER CENTERED TO STUDENT CENTERED

A Series of Steps for Reconfiguring the Classroom to Reflect Student Empowerment: From Teacher to Student Centered



Step 1: Recognize that the typical classroom configuration and the mode of teacher-centered learning are unsatisfactory for twenty-first-century student-centered learning.

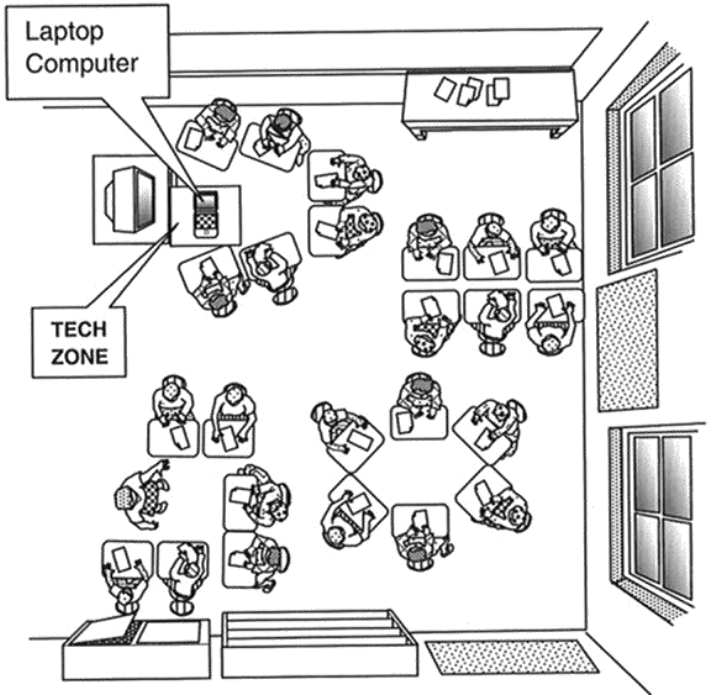


Step 2: Try something as simple as putting desks on a diagonal at a forty-five-degree angle to the walls. Align desks so they are not all facing the teacher as sole provider of information. Define a tech zone.

Changing the Educational Model

FROM TEACHER CENTERED TO STUDENT CENTERED

Small Group Facilitation

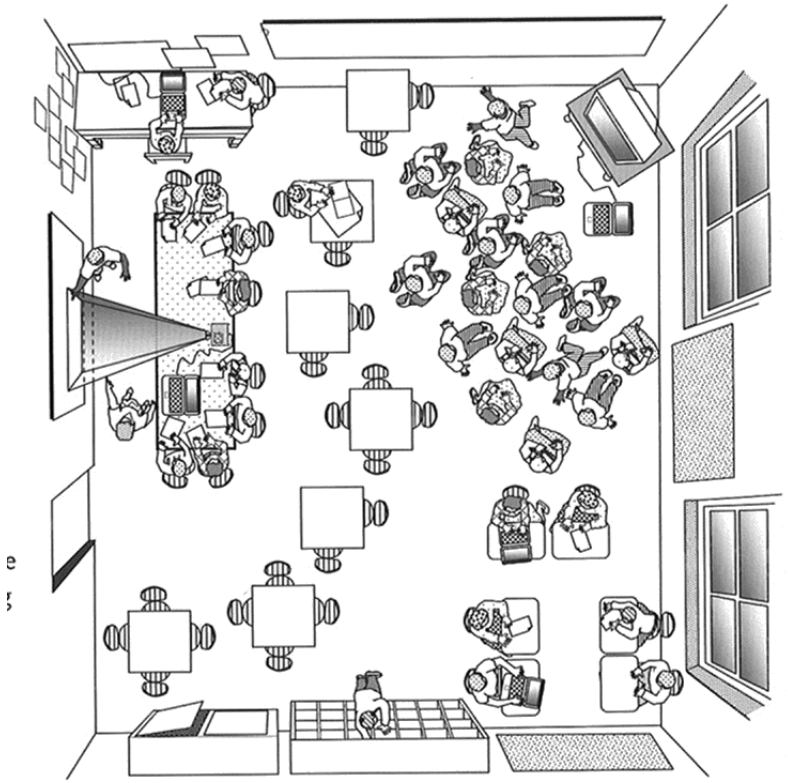


Step 3: Replace the teacher's desk with a side table, which enables the teacher to evolve into a facilitator, moving from small group to small group, with each group focused on its own problem to solve. The "power" has shifted to the student teams.

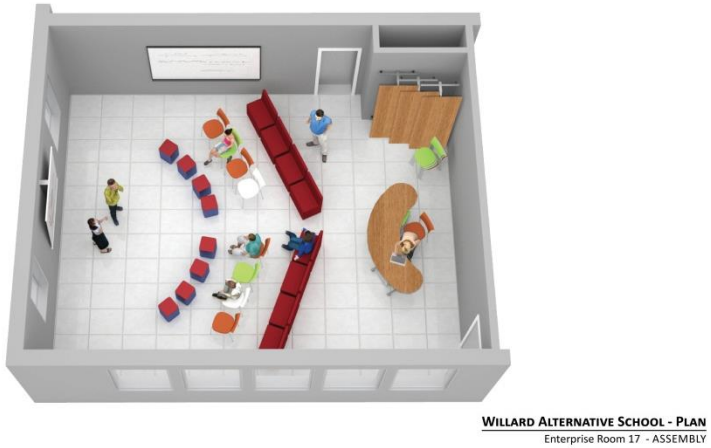
Changing the Educational Model

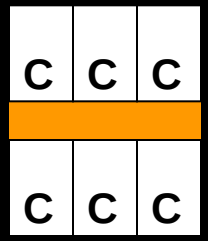
FROM TEACHER CENTERED TO STUDENT CENTERED

Learning Flexibility; Individual, Small/Large Group, Presentation

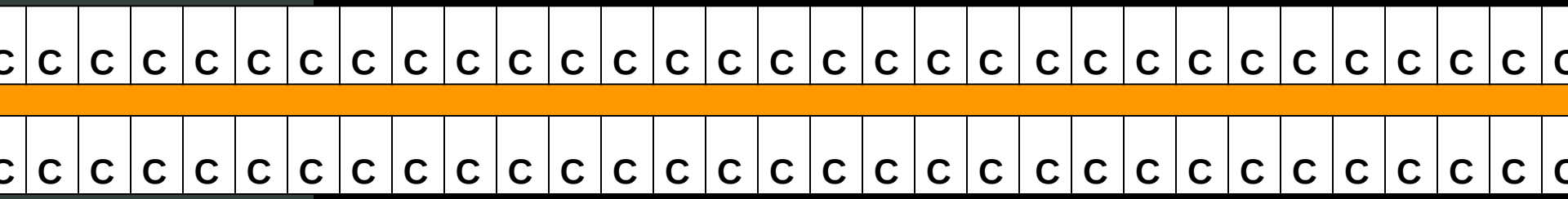


Step 4: Expand the technology zone. Provide configurations that support the entire learning process: research and experimentation, production, and presentation and reflection. Support individual, small group, and large group learning. The balance of power has shifted to the "gainfully employed" student.




C C C
C C C

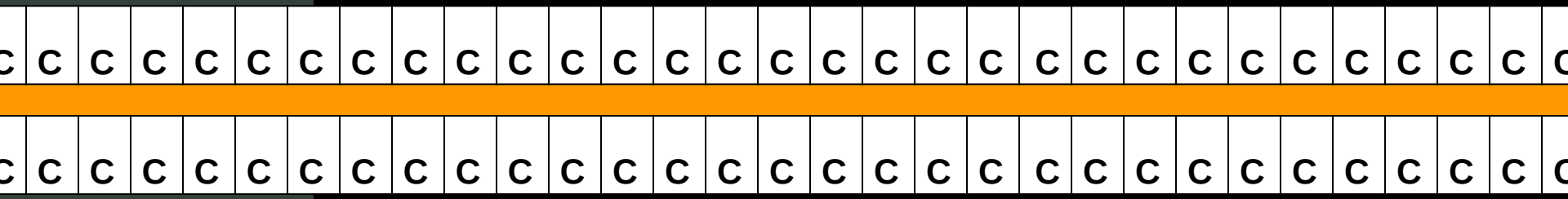
20th Century Schools



DISJOINTED CURRICULUM DELIVERED BY INDIVIDUAL TEACHERS IN ISOLATED SETTINGS

20th Century Schools

20% CIRCULATION, NOT USABLE FOR EDUCATION

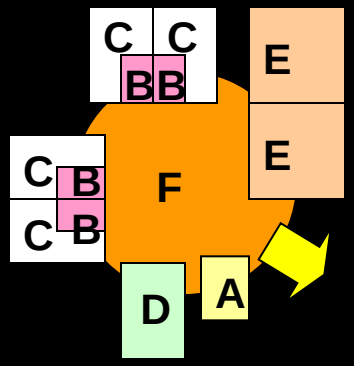


DISJOINTED CURRICULUM DELIVERED BY INDIVIDUAL TEACHERS IN ISOLATED SETTINGS

21st Century Schools

SMALL LEARNING COMMUNITIES

20% CIRCULATION,
USABLE FOR EDUCATION

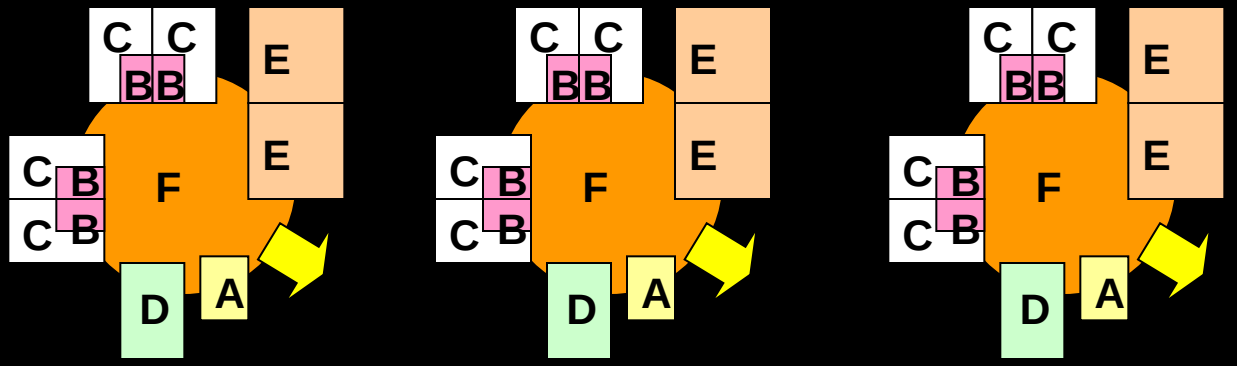


INTEGRATED CURRICULUM
DELIVERED BY
COLLABORATIVE TEACHERS IN
A RELATIONSHIP-BASED
SETTING

21st Century Schools

SMALL LEARNING COMMUNITIES

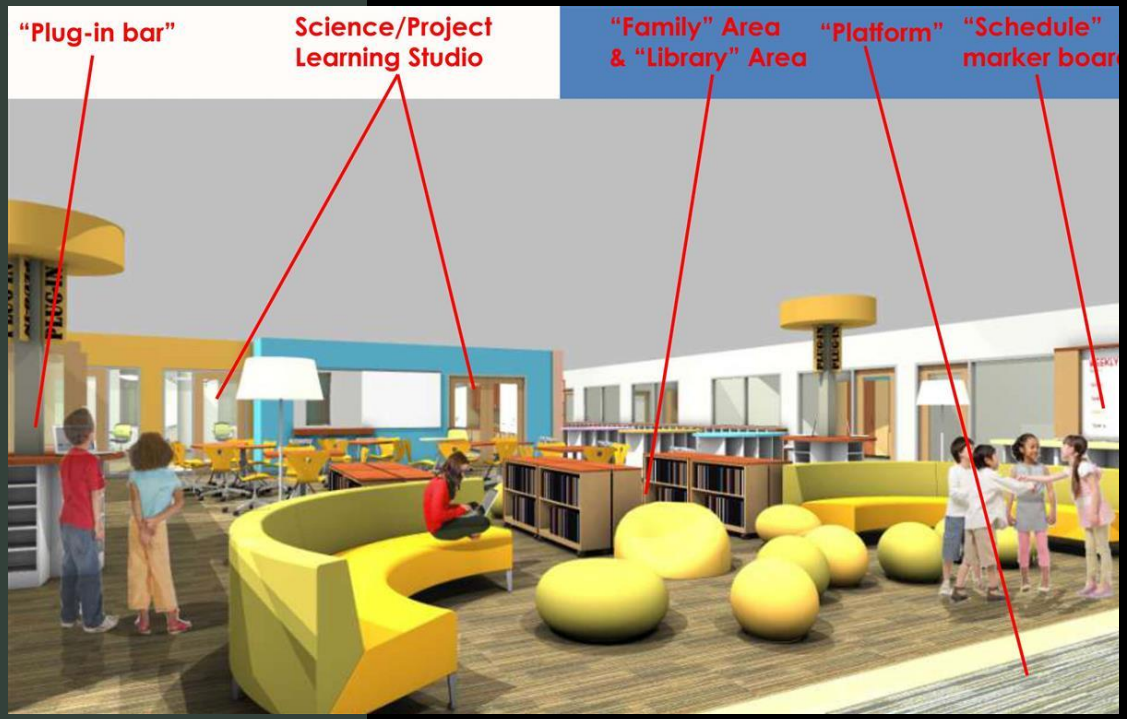
20% CIRCULATION,
USABLE FOR EDUCATION

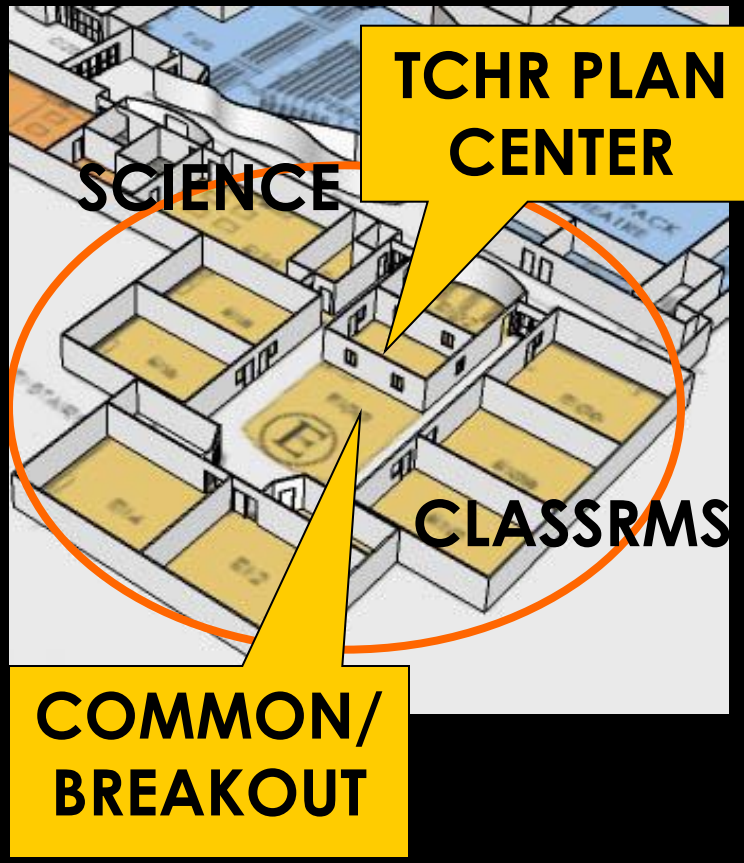


INTEGRATED CURRICULUM
DELIVERED BY
COLLABORATIVE TEACHERS IN
RELATIONSHIP-BASED
SETTINGS

Small Learning Communities

BUILD RELATIONSHIPS AMONG TEACHERS + STUDENTS

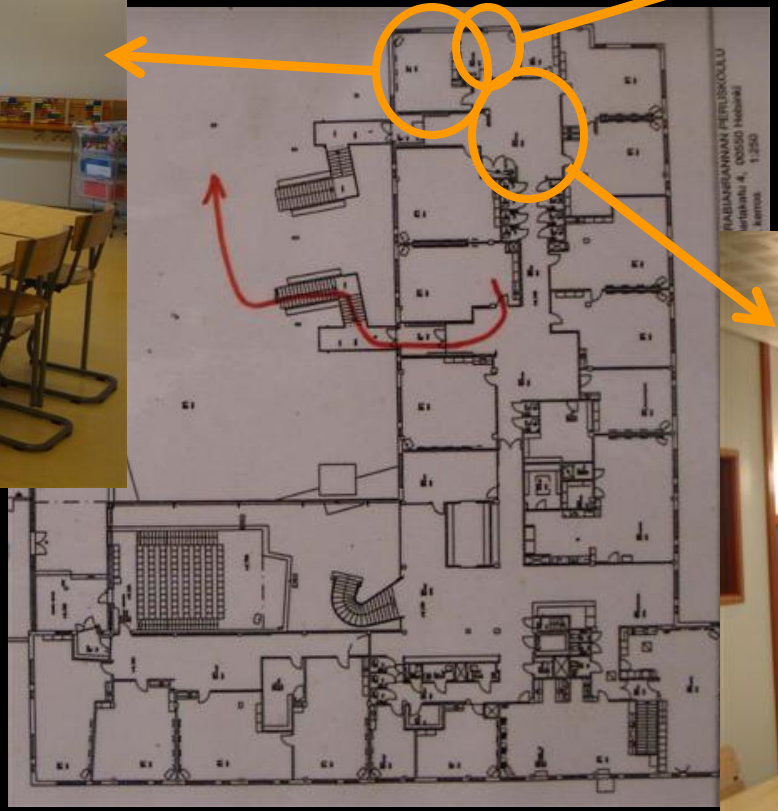




100% OF SPACE USED FOR LEARNING

Small Learning Communities

HELSINKI PRIMARY SCHOOLS, HELSINKI, FINLAND



20th Century Furniture

21st Century Furniture

FLEXIBLE, MULTIPLE MODALITIES

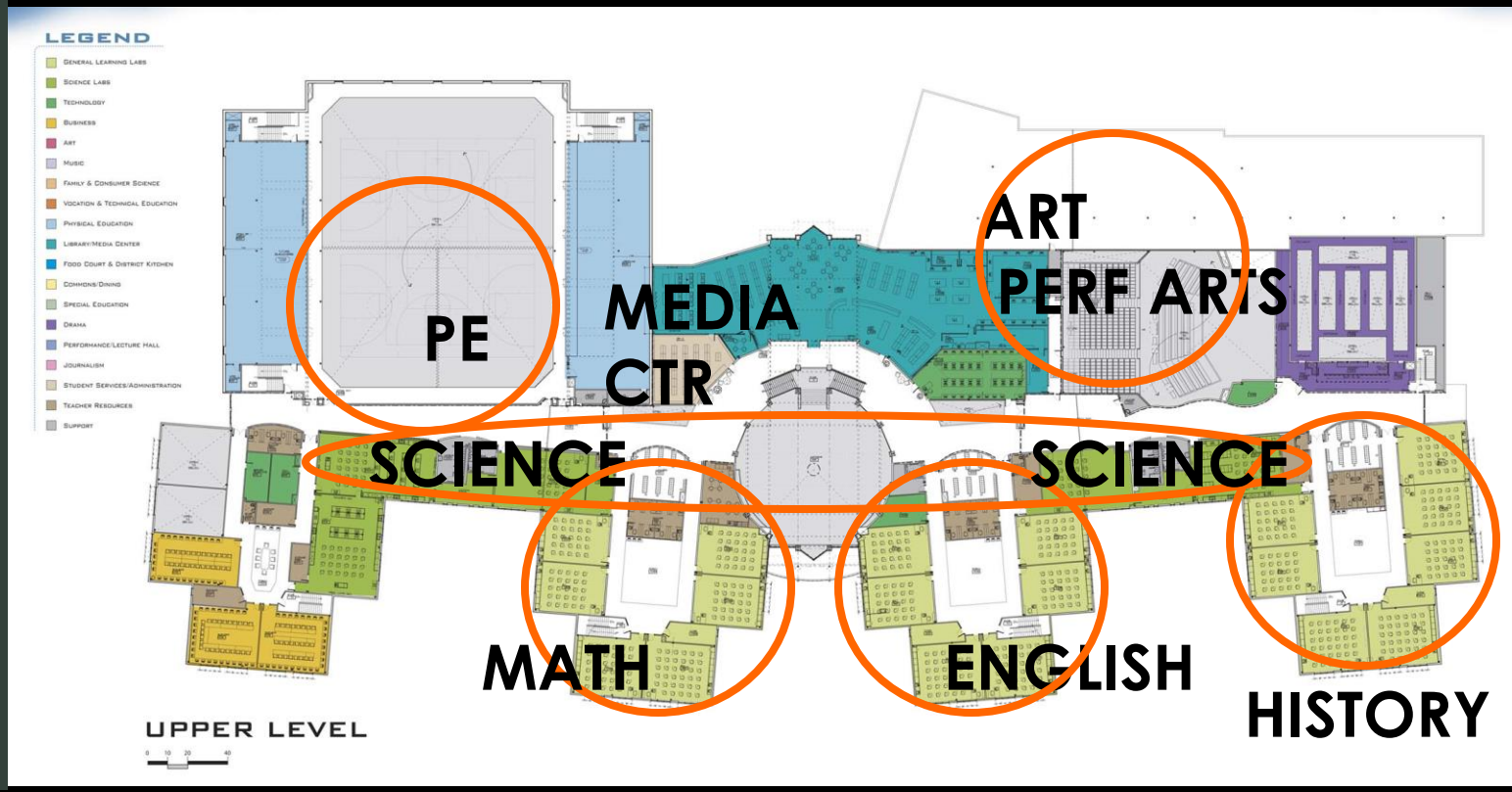
VS Furniture

Flexible Platform for Change

GLACIER HS, KALISPELL, MT

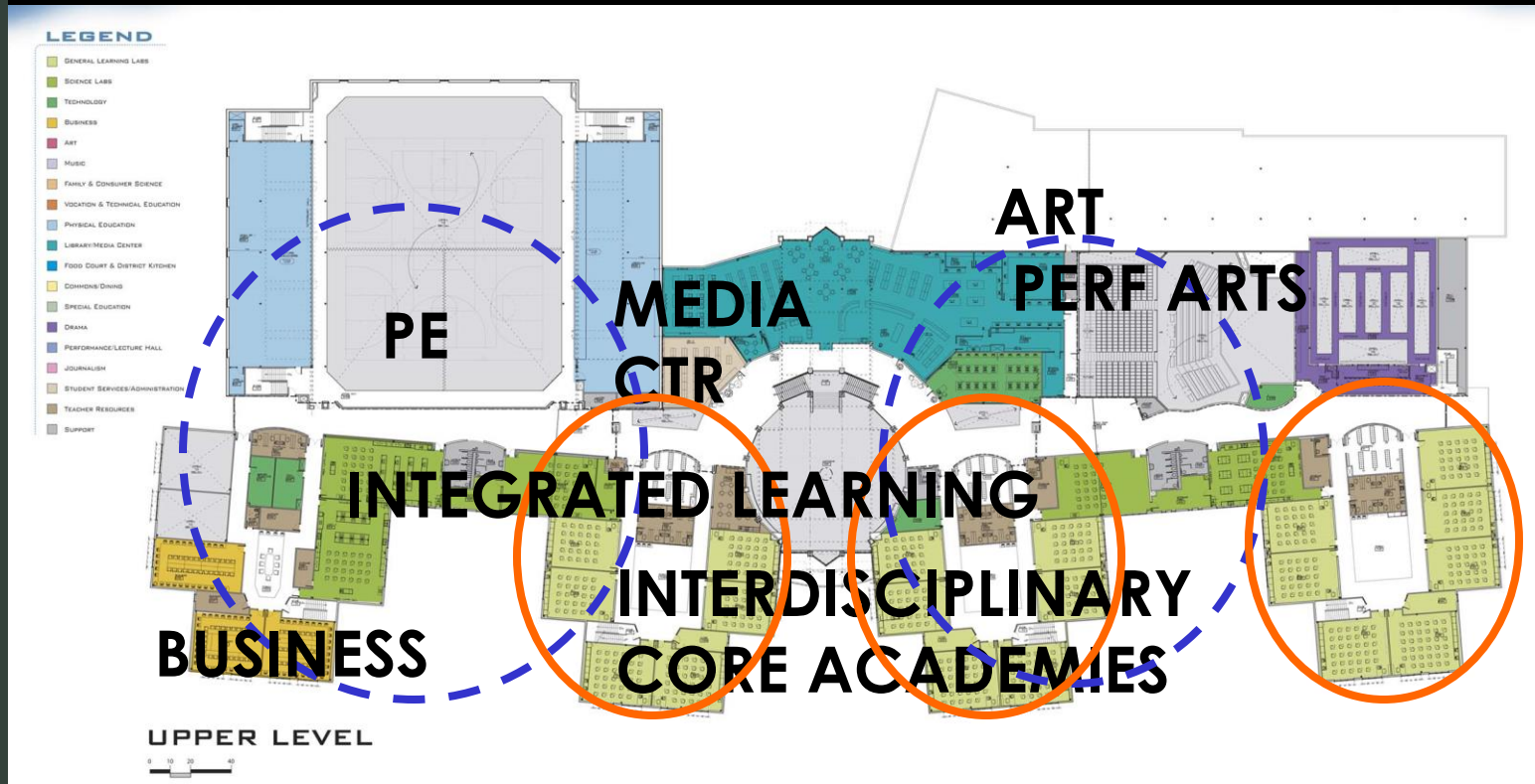
- Agile organizational planning
- 21st Century Skills
- Small Learning Communities
- College articulation

Plataforma flexible para
cambio continu



Flexible Platform for Change

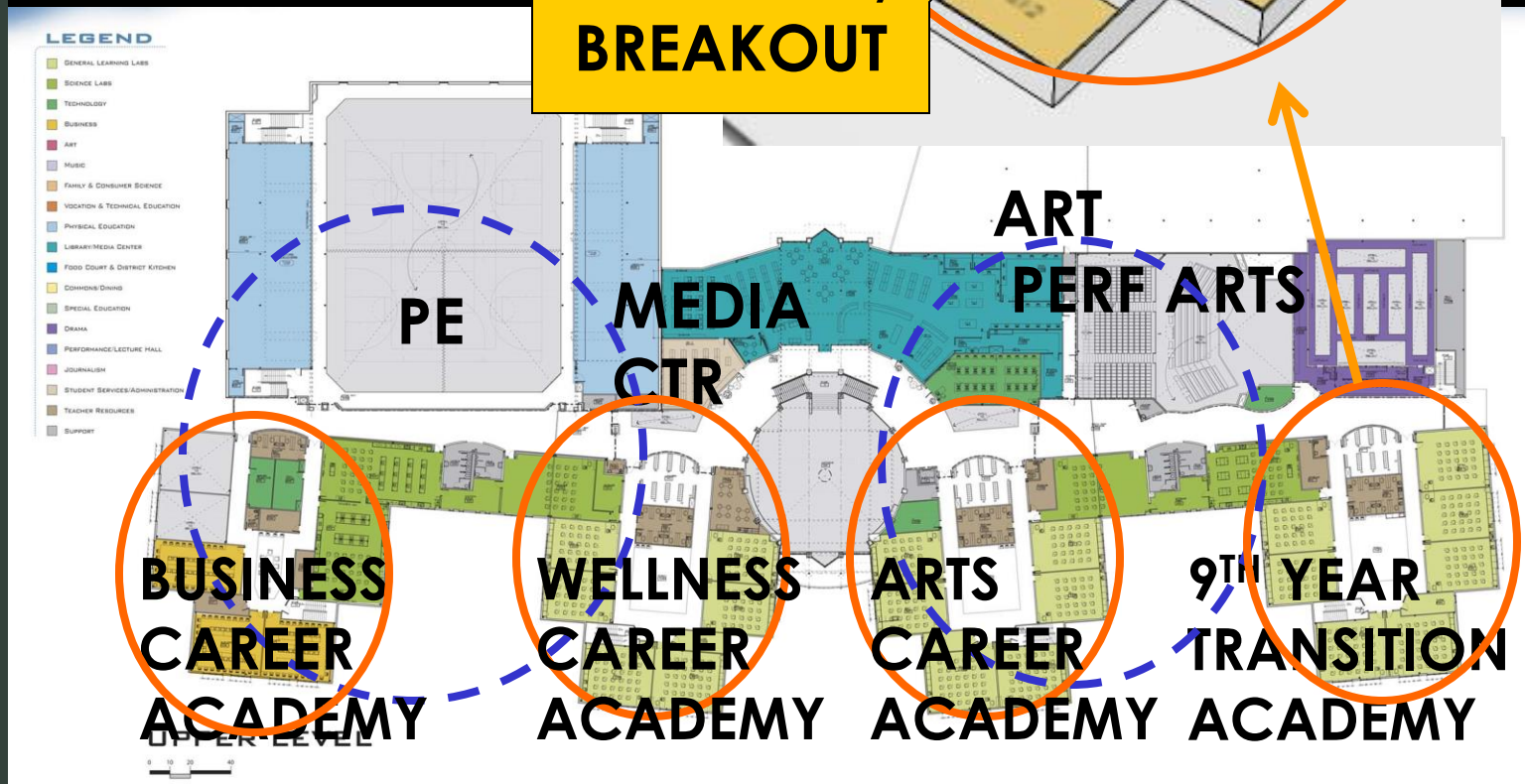
GLACIER HS, KALISPELL, MT



Flexible Platform for Change

GLACIER HS, KALISPELL, MT

Plataforma flexible para el cambio continuo



Forest Avenue School K-2 Center

MIDDLETOWN, RI

Forest Avenue School K-2 Center

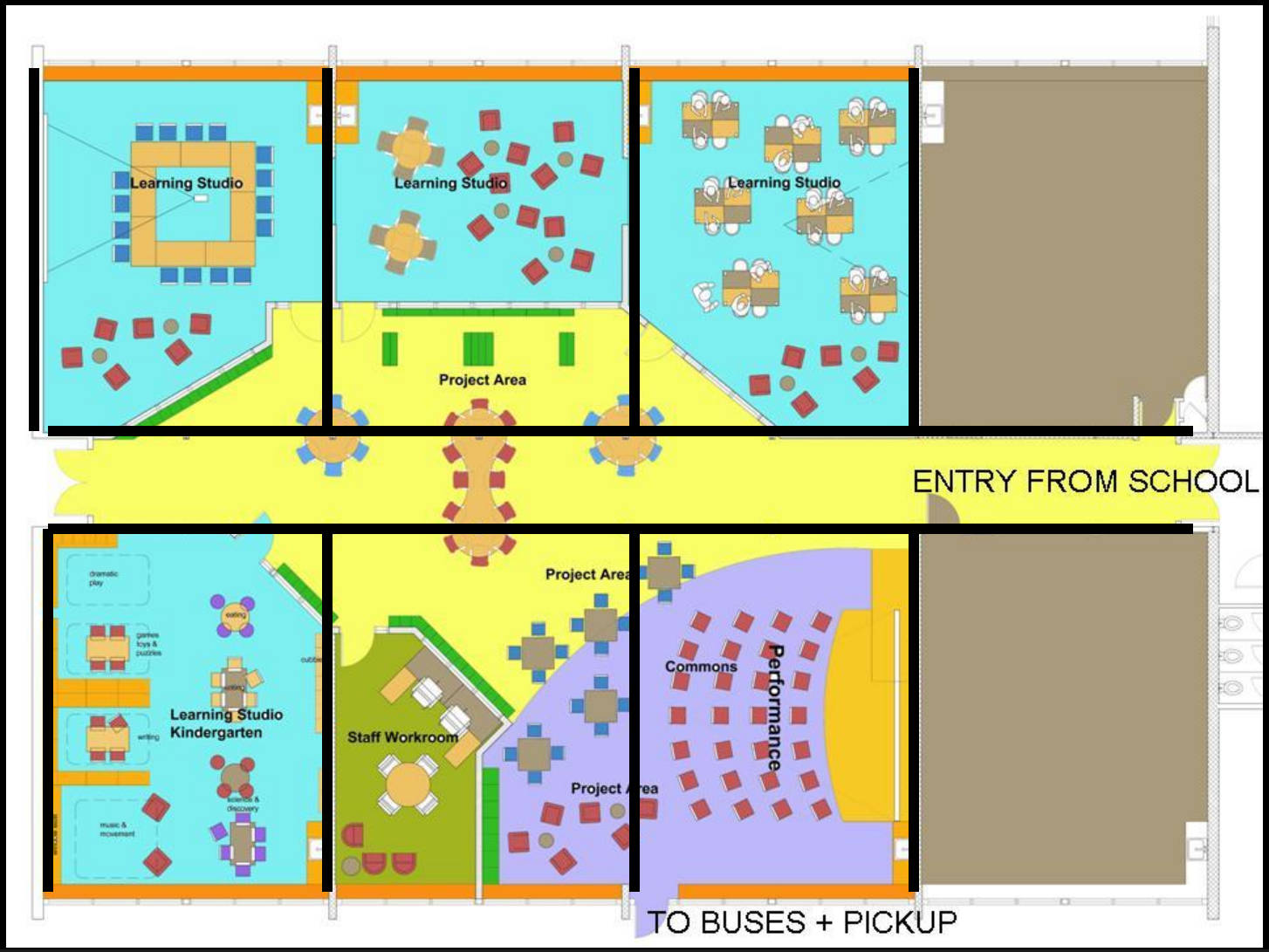
MIDDLETOWN, RI, USA

Teacher Teams, Multi-Age, Flexible Student Groups

Forest Avenue School K-2 Center

MIDDLETOWN, RI, USA

Teacher Teams, Multi-Age, Flexible Student Groups

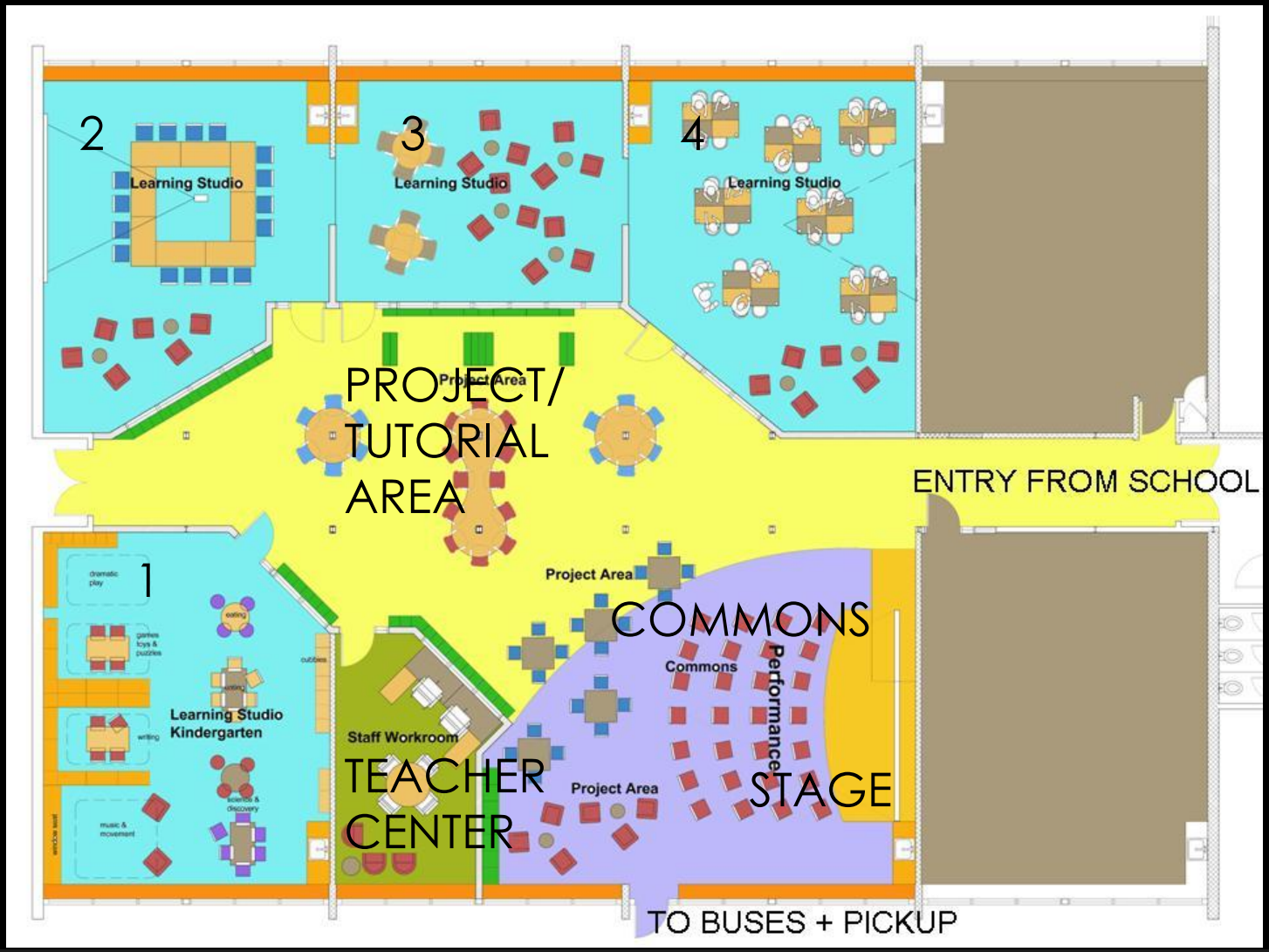


Forest Avenue School K-2 Centre

MIDDLETOWN, RI, USA

Teacher Teams, Multi-Age, Flexible Student Groups

4 Core Teachers + 2 Spl Ed Teachers + Specialists with 85 Students

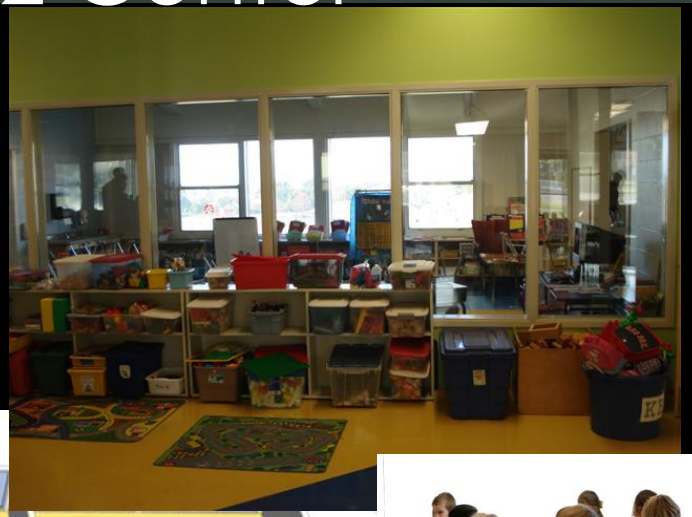


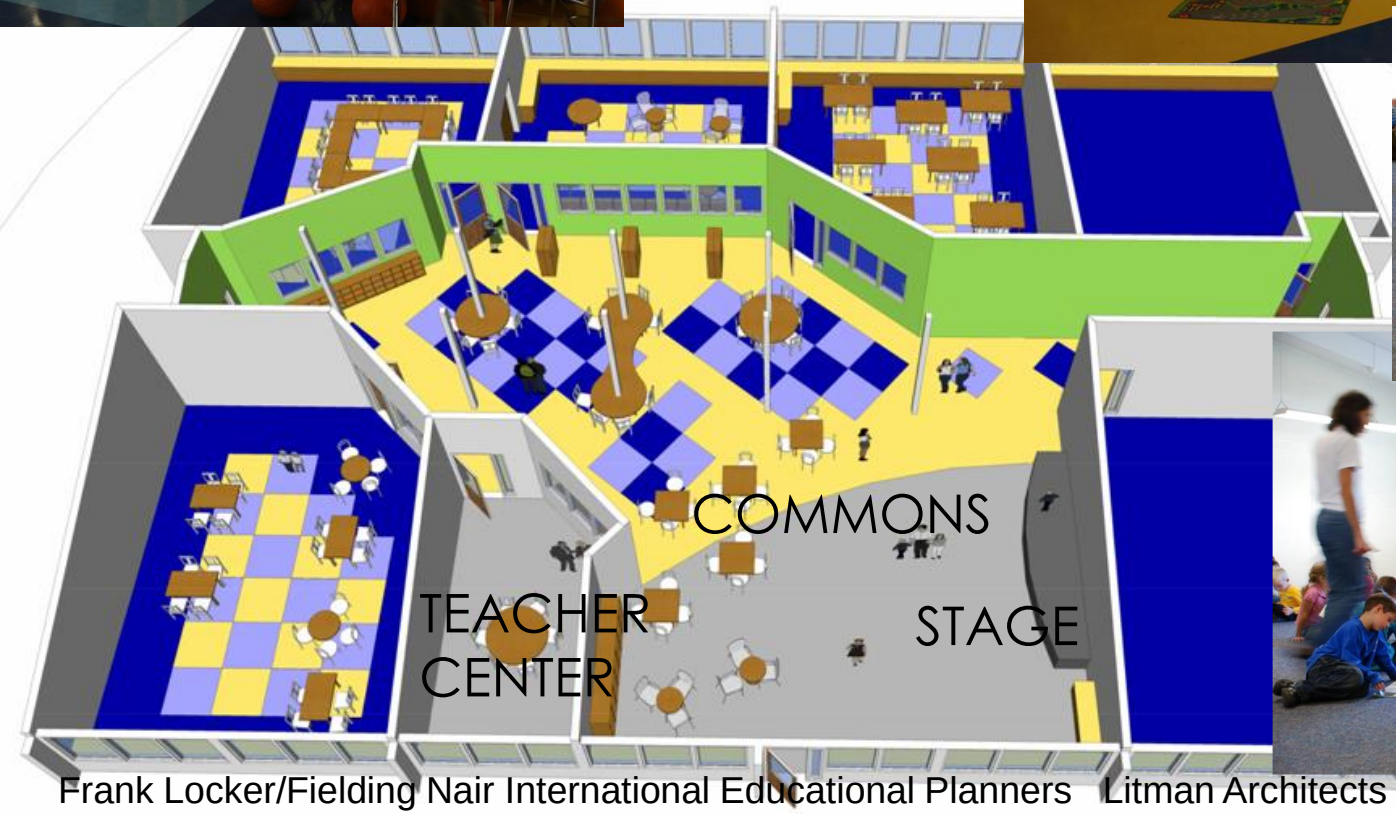
Forest Avenue School K-2 Center

MIDDLETOWN, RI, USA

Forest Avenue School K-2 Center

MIDDLETOWN, RI, USA





Frank Locker/Fielding Nair International Educational Planners Litman Architects

EDUCATIONAL ATTRIBUTES

- 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%

LEARNING RESULTS

CALIFORNIA STANDARDS TEST SCORES

Biology	10th	11th
NEW TECH HIGH		
•% Advanced	47%	47%
•% Proficient	25%	25%
ALL COUNTY SCHOOLS		
•% Advanced	19%	19%
•% Proficient	28%	18%
ALL CALIFORNIA SCHOOLS		
•% Advanced	21%	20%
•% Proficient	24%	22%

LEARNING RESULTS

CALIFORNIA STANDARDS TEST SCORES

Biology	10th	11th
NEW TECH HIGH		72%
•% Advanced	47%	47%
•% Proficient	25%	25%
ALL COUNTY SCHOOLS		
•% Advanced	19%	19%
•% Proficient	28%	18%
		37%
ALL CALIFORNIA SCHOOLS		
•% Advanced	21%	20%
•% Proficient	24%	22%
		42%

SCHOOL ORGANISATION

- Year levels 9-12
- **400 students per school maximum**
- Integrated, interdisciplinary teaching
- 100% project-based learning
- Teacher teams (2 or 3 teachers, synchronous)
- Collaborative learning (2 to 4 student teams)
- Double block periods: 180 minutes
- 12 credits (1/2 year) university courses before graduation
- Internships
- Student generated senior project
- 1:1 computers since 1996

WHAT ARE STUDENTS EVALUATED ON?

MEASURED

- Critical thinking
- Collaboration
- Oral communication
- Written communication
- Technology literacy
- Citizenship and ethics
- Career preparation
- **Core subject mastery**

NOT MEASURED

- Creativity

INTERDISCIPLINARY/INTEGRATED TEACHING

- 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)

Taught by 2 teacher teams in 180 minute classes

SAMPLE PROJECTS

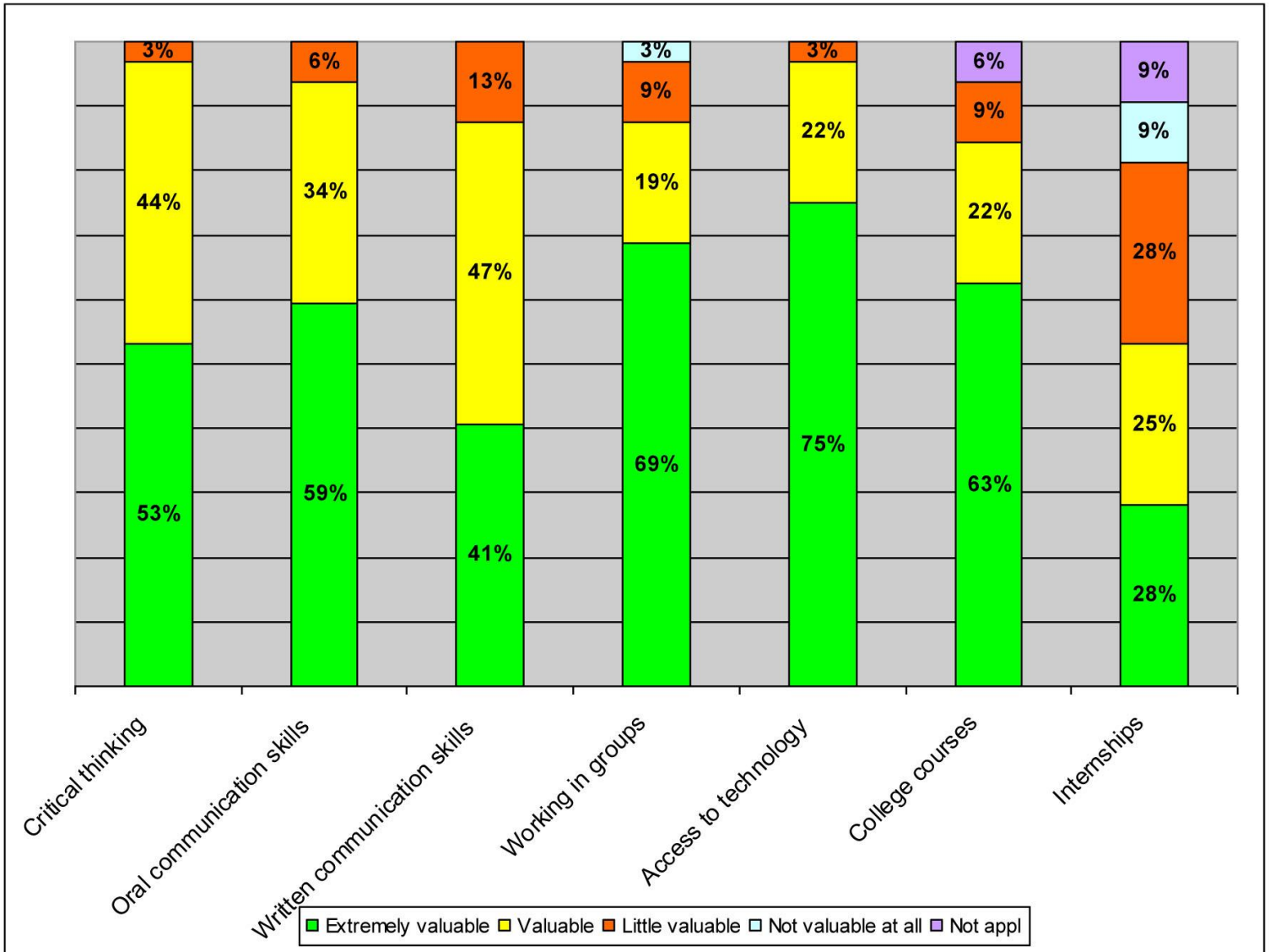
- Animal Farm and Economics
- 1984 – Big Brother is Watching You
- Middle East Peace Conference
- CSI Investigation
- Imperialist Intervention in Haiti

SAMPLE PROJECTS

- 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

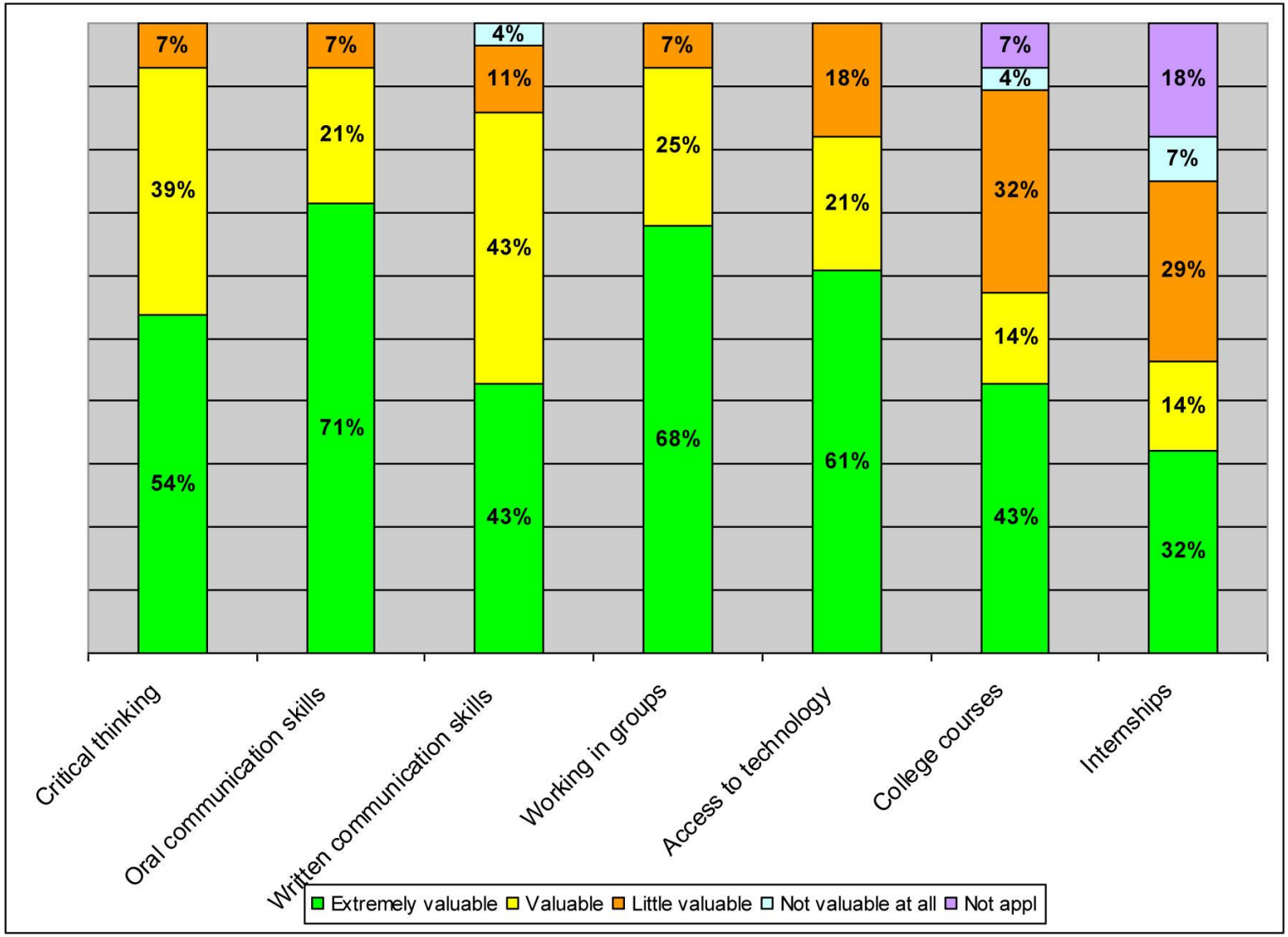
New Tech Network LEARNING RESULTS

New Tech Alumni Survey
Value of New Tech Model Components on Meeting College Demands



New Tech Network LEARNING RESULTS

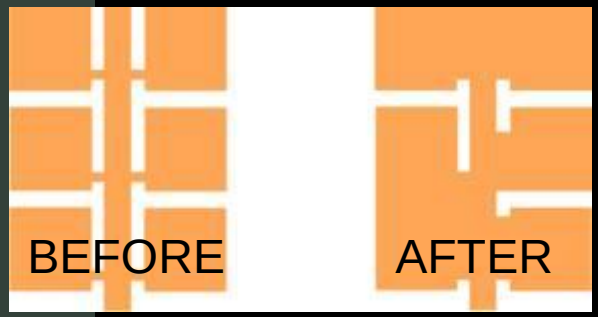
New Tech Alumni Survey
Value of New Tech Model Components on Meeting Work Demands



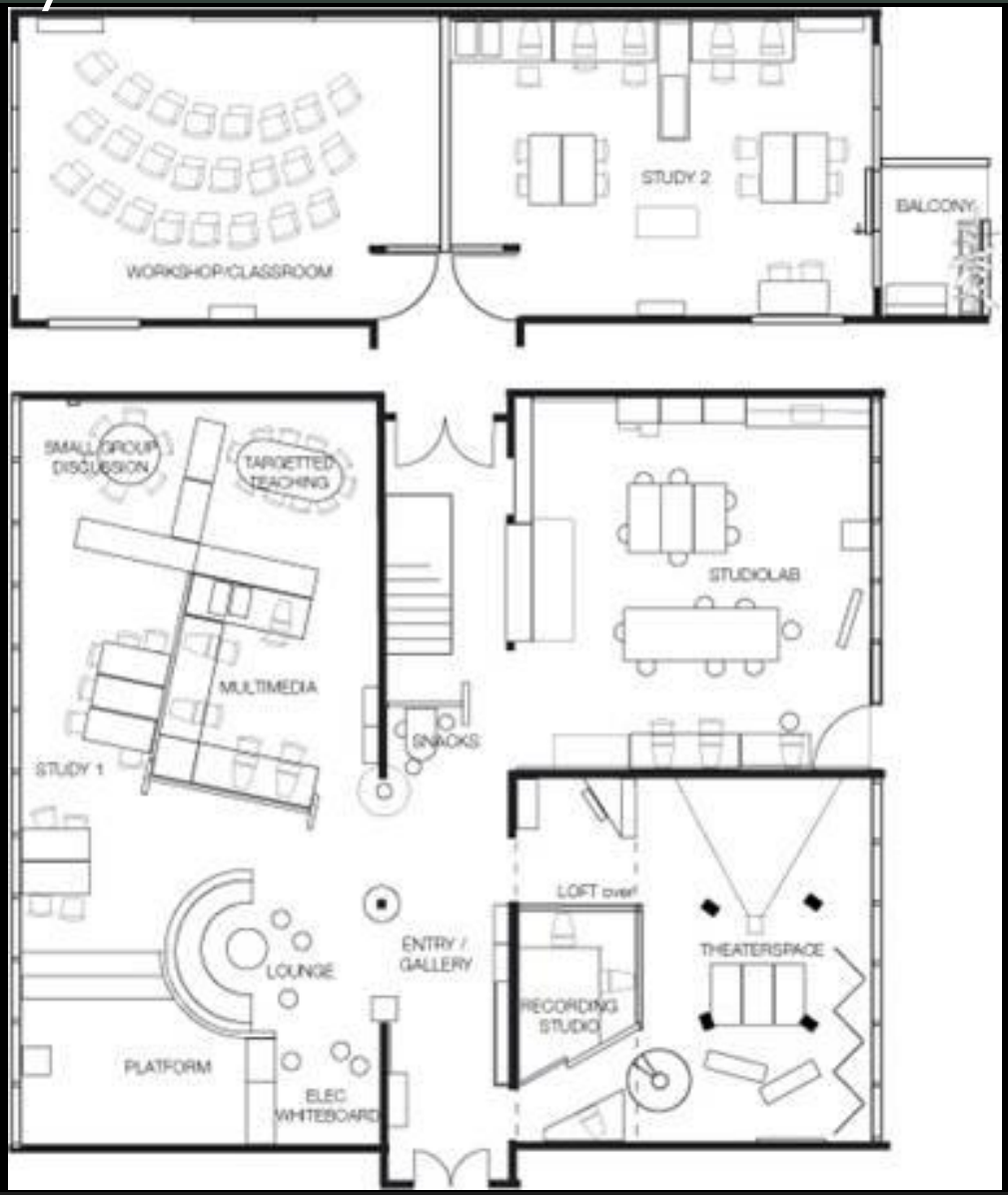
Wooranna Park Primary School

MELBOURNE, AUSTRALIA

- Year 5 + 6
- 110 Students
- Teacher Teams
- Activity Zones
- Project-Based Learning



- High Poverty
- Test Scores at 36% - 73% vs 12% Expected per Student Family Occupation



Wooranna Park Primary School

MELBOURNE, AUSTRALIA

Wooranna Park Primary School

MELBOURNE, AUSTRALIA

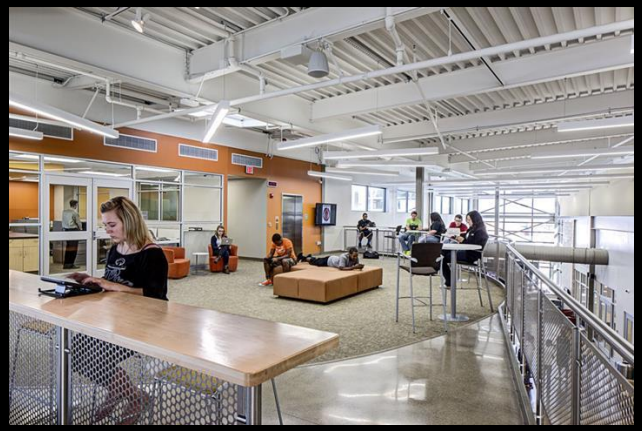
Center for Innovative Studies

MILAN, MI

The End of the Classroom as We Know it Today

Center for Innovative Studies

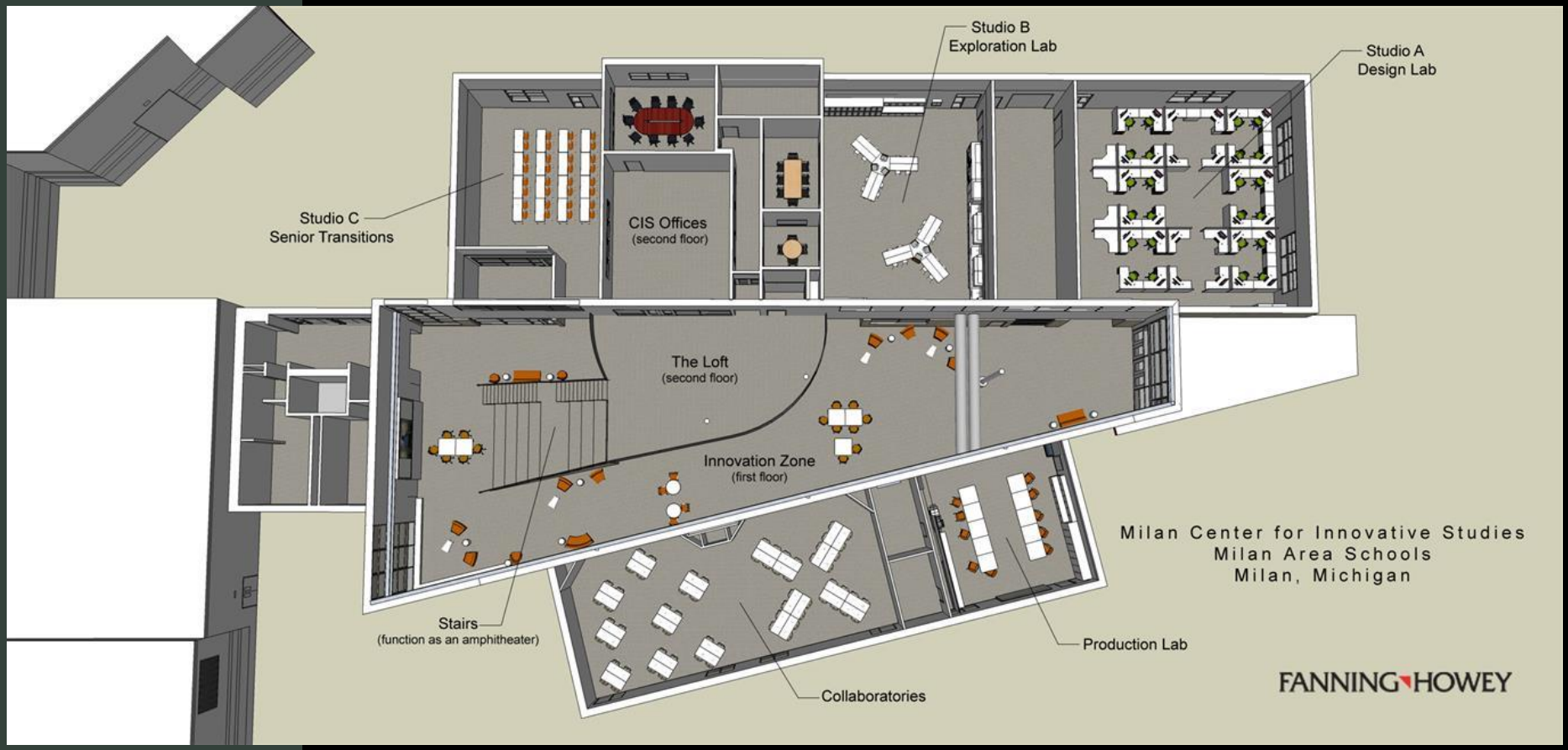
MILAN, MI



The End of the Classroom as We Know it Today

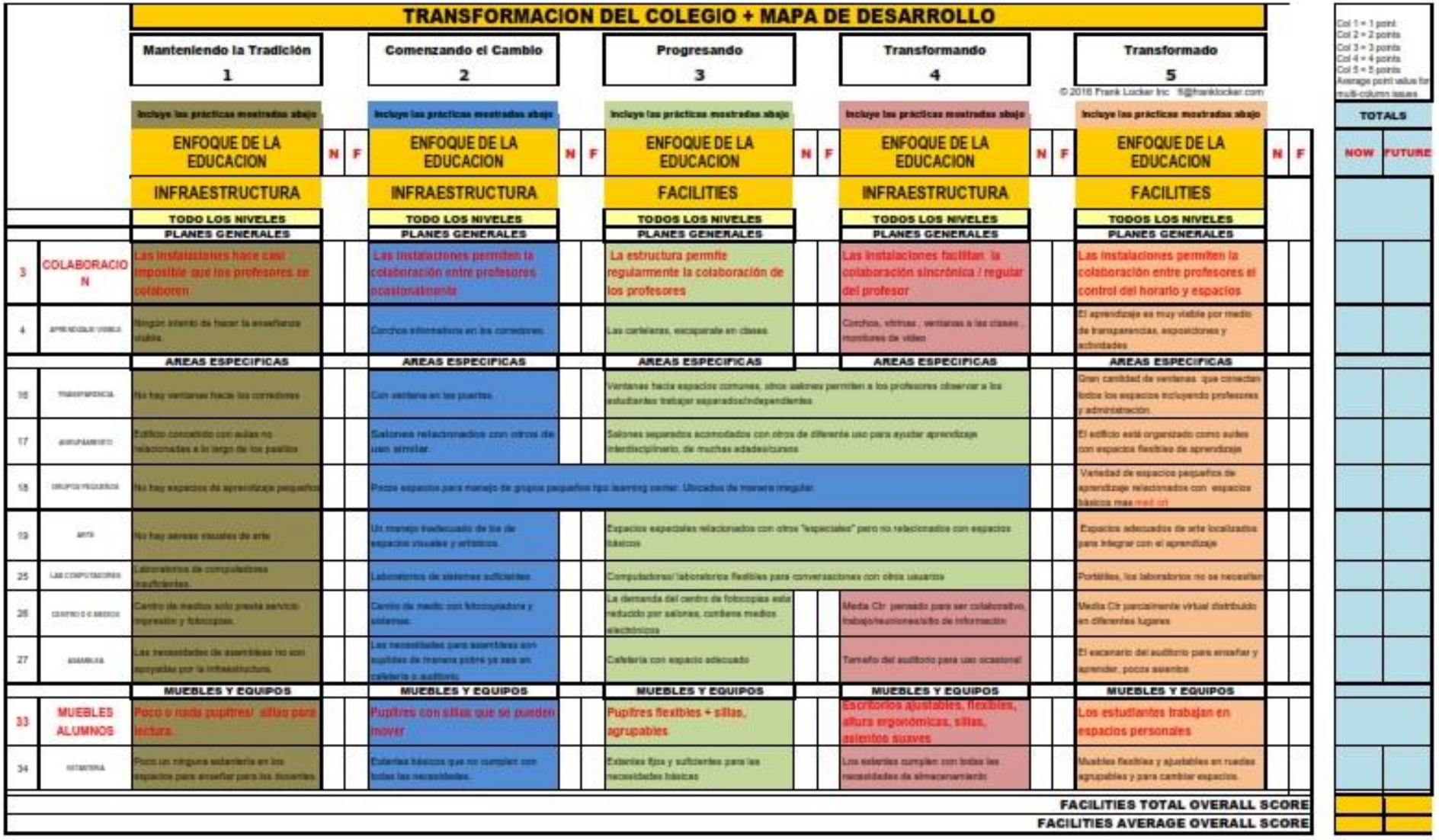
Center for Innovative Studies

MILAN, MI



The End of the Classroom as We Know it Today

Transformación de la escuela + apa Desarrollo
School Transformation + Development Map



TRANSFORMACION DEL COLEGIO + MAPA DE DESARROLLO

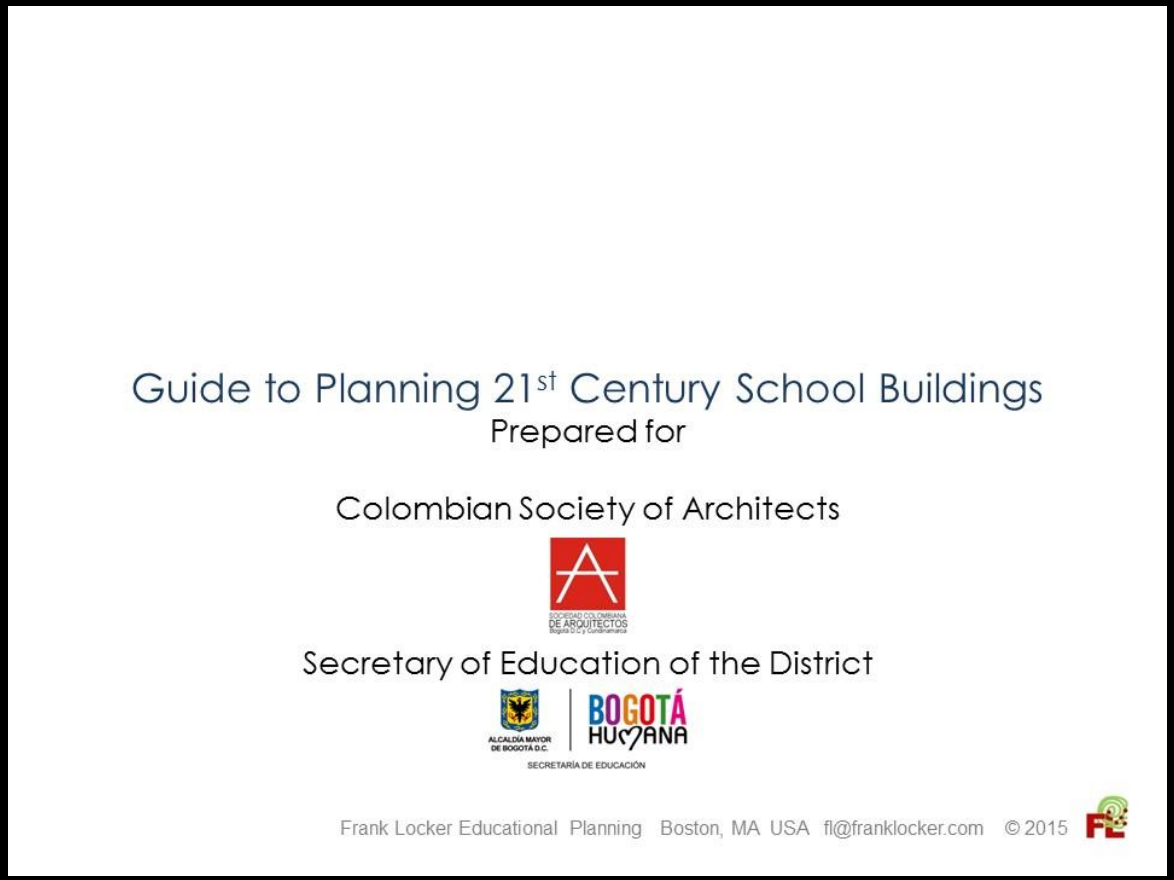
Col 1 = 1 point
Col 2 = 2 points
Col 3 = 3 points
Col 4 = 4 points
Col 5 = 5 points
Average point value for multi-column issues

		Manteniendo la Tradición 1	N	F	Comenzando el Cambio 2	N	F	Progresando 3	N	F	Transformando 4	N	F	Transformado 5	N	F	TOTALS NOW	TOTALS FUTURE
		Incluye las prácticas mostradas abajo			Incluye las prácticas mostradas abajo			Incluye las prácticas mostradas abajo			Incluye las prácticas mostradas abajo			Incluye las prácticas mostradas abajo				
		ENFOQUE DE LA EDUCACION			ENFOQUE DE LA EDUCACION			ENFOQUE DE LA EDUCACION			ENFOQUE DE LA EDUCACION			ENFOQUE DE LA EDUCACION				
		INFRAESTRUCTURA			INFRAESTRUCTURA			FACILITIES			INFRAESTRUCTURA			FACILITIES				
		TODO LOS NIVELES			TODO LOS NIVELES			TODOS LOS NIVELES			TODOS LOS NIVELES			TODOS LOS NIVELES				
		PLANES GENERALES			PLANES GENERALES			PLANES GENERALES			PLANES GENERALES			PLANES GENERALES				
3	COLABORACION	Las instalaciones hace casi imposible que los profesores se colaboren			Las instalaciones permiten la colaboración entre profesores ocasionalmente			La estructura permite regularmente la colaboración de los profesores			Las instalaciones facilitan la colaboración sincrónica / regular del profesor			Las instalaciones permiten la colaboración entre profesores el control del horario y espacios				
4	APRENDIZAJE VISIBLE	Ningún intento de hacer la enseñanza visible.			Corchos informativos en los corredores			Las carteleras, escaparate en clases			Corchos, vitrinas , ventanas a las clases , monitores de video			El aprendizaje es muy visible por medio de transparencias, exposiciones y actividades				
		AREAS ESPECIFICAS			AREAS ESPECIFICAS			AREAS ESPECIFICAS			AREAS ESPECIFICAS			AREAS ESPECIFICAS				
16	TRANSPARENCIA	No hay ventanas hacia los corredores			Con ventana en las puertas			Ventanas hacia espacios comunes, otros salones permiten a los profesores observar a los estudiantes trabajar separados/independientes						Gran cantidad de ventanas que conectan todos los espacios incluyendo profesores y administración				
17	AGRUPAMIENTO	Edificio concebido con aulas no relacionadas a lo largo de los pasillos			Salones relacionados con otros de uso similar.			Salones separados acomodados con otros de diferente uso para ayudar aprendizaje interdisciplinario, de muchas edades/cursos						El edificio está organizado como suites con espacios flexibles de aprendizaje				
18	GRUPOS PEQUEÑOS	No hay espacios de aprendizaje pequeños			Pocos espacios para manejo de grupos pequeños tipo learning center. Ubicados de manera irregular.									Variedad de espacios pequeños de aprendizaje relacionados con espacios básicos mas med ctr				
19	ARTE	No hay aéreas visuales de arte			Un manejo inadecuado de los de espacios visuales y artísticos			Espacios especiales relacionados con otros "especiales" pero no relacionados con espacios básicos						Espacios adecuados de arte localizados para integrar con el aprendizaje				
25	LAB COMPUTADORES	Laboratorios de computadoras insuficientes.			Laboratorios de salones suficientes			Computadoras/ laboratorios flexibles para conversaciones con otros usuarios						Portátiles, los laboratorios no se necesitan				
26	CENTRO DE MEDIOS	Centro de medios solo presta servicio impresión y fotocopias.			Centro de medio con fotocopiadora y sistemas.			La demanda del centro de fotocopias esta reducido por salones, contiene medios electrónicos			Media Ctr pensado para ser colaborativo, trabajo/reuniones/uso de información			Media Ctr parcialmente virtual distribuido en diferentes lugares				
27	ASAMBLEA	Las necesidades de asambleas no son apoyadas por la infraestructura.			Las necesidades para asambleas son suplidas de manera pobre ya sea en cafeteria o auditorio			Cafeteria con espacio adecuado			Tamaño del auditorio para uso ocasional			El escenario del auditorio para ensañar y aprender, pocos asientos				
		MUEBLES Y EQUIPOS			MUEBLES Y EQUIPOS			MUEBLES Y EQUIPOS			MUEBLES Y EQUIPOS			MUEBLES Y EQUIPOS				
33	MUEBLES ALUMNOS	Poco o nada pupitres/ sillas para lectura			Pupitres con sillas que se pueden mover			Pupitres flexibles + sillas, agrupables			escritorios ajustables, flexibles, altura ergonómicas, sillas, asientos suaves			Los estudiantes trabajan en espacios personales				
34	ESTANTERIA	Poco un ninguna estanteria en los espacios para enseñar para los docentes			Estantes básicos que no cumplen con todas las necesidades			Estantes fijos y suficientes para las necesidades básicas			Los estantes cumplen con todas las necesidades de almacenamiento			Muebles flexibles y ajustables en ruedas agrupables y para cambiar espacios				
																	FACILITIES TOTAL OVERALL SCORE	
																	FACILITIES AVERAGE OVERALL SCORE	

Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

DESIGN COMPETITION FOR NEW SCHOOL INFRASTRUCTURE



Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

GUIDING PRINCIPLES FOR 21ST CENTURY SCHOOLS

MULTIPLE LEARNING MODALITIES Guiding Principles

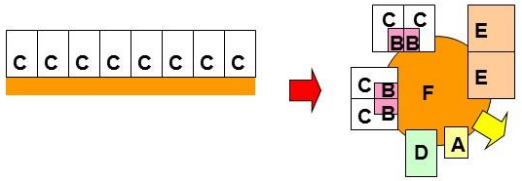
- Different people learn best in different ways
- Different teachers prefer different ways of guiding students
- Students can use different tools for learning and expressing their learning
- All of this makes learning more effective and relevant to students

BOGOTÁ HUMANA

Frank Locker Educational Planning

SMALL LEARNING COMMUNITIES Guiding Principles

- This is an effective strategy for building relationships among teachers, among students, and between students and teachers
- With Small Learning Communities (SLCs) the overall building is subdivided into components. Classrooms are arranged in small clusters or around patios instead of in long rows



SEPARATE CURRICULUMS DELIVERED BY INDIVIDUAL TEACHERS IN ISOLATED SETTINGS

A ROW OF CLASSROOMS TYPICALLY EACH ONE THE SAME

INTEGRATED CURRICULUM DELIVERED BY COLLABORATIVE TEACHERS IN RELATIONSHIP-BASED SETTINGS

A SUITE OF LEARNING SPACES VARIED IN SIZE, FURNITURE + EQUIPMENT

BOGOTÁ HUMANA

Frank Locker Educational Planning

Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

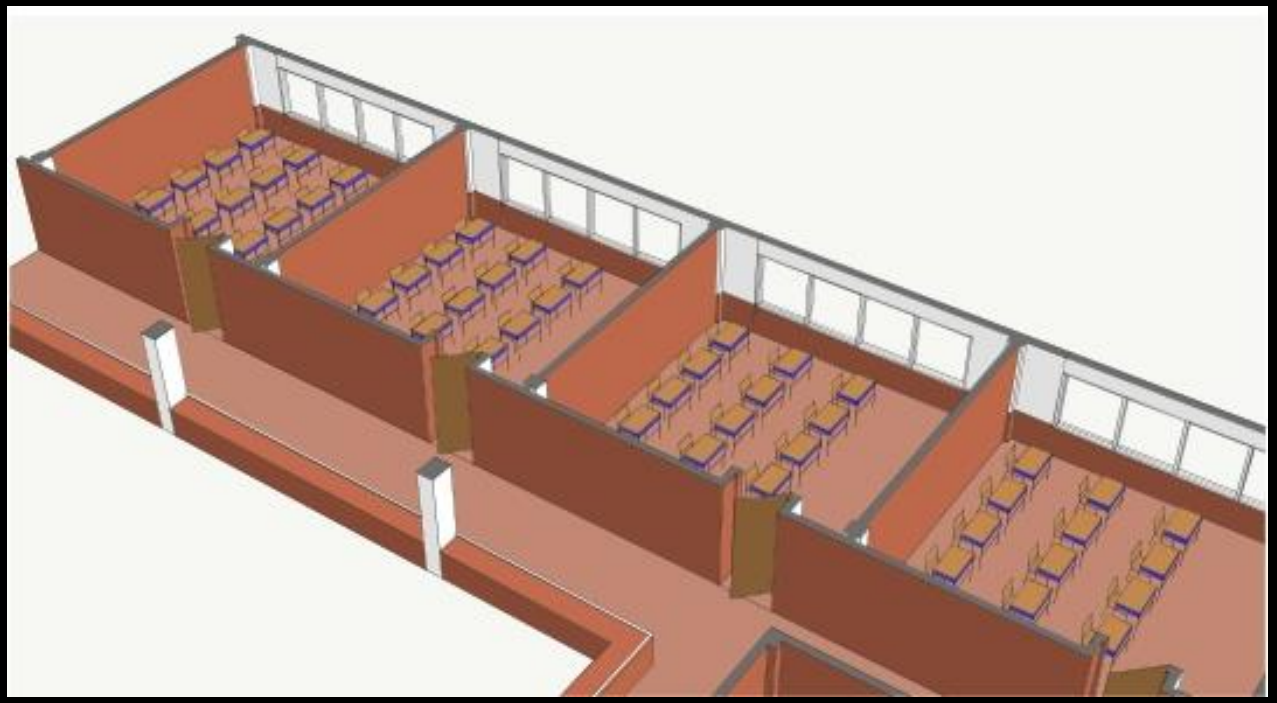
INFORMED BY INNOVATIONS IN D.C SCHOOLS

Jose Asuncion Primary School, Juduth Gue, Principall

Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

INFORMED BY INNOVATIONS AT GIMNASIO LOS CAOBOS



Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

INFORMED BY INNOVATIONS AT GIMNASIO LOS CAOBOS

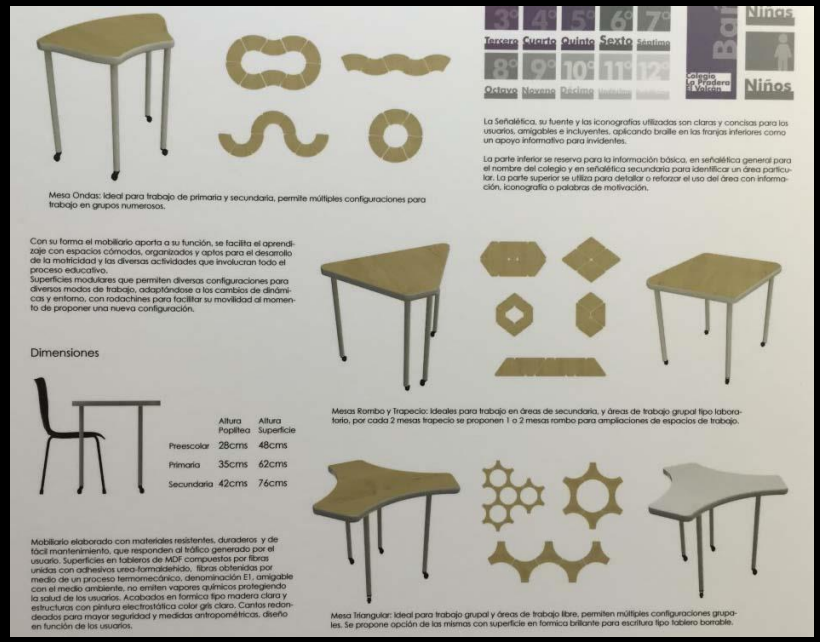
Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

INFORMED BY INNOVATIONS AT GIMNASIO LOS CAOBOS

Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS



Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

Bogota 21st Century Schools Initiative

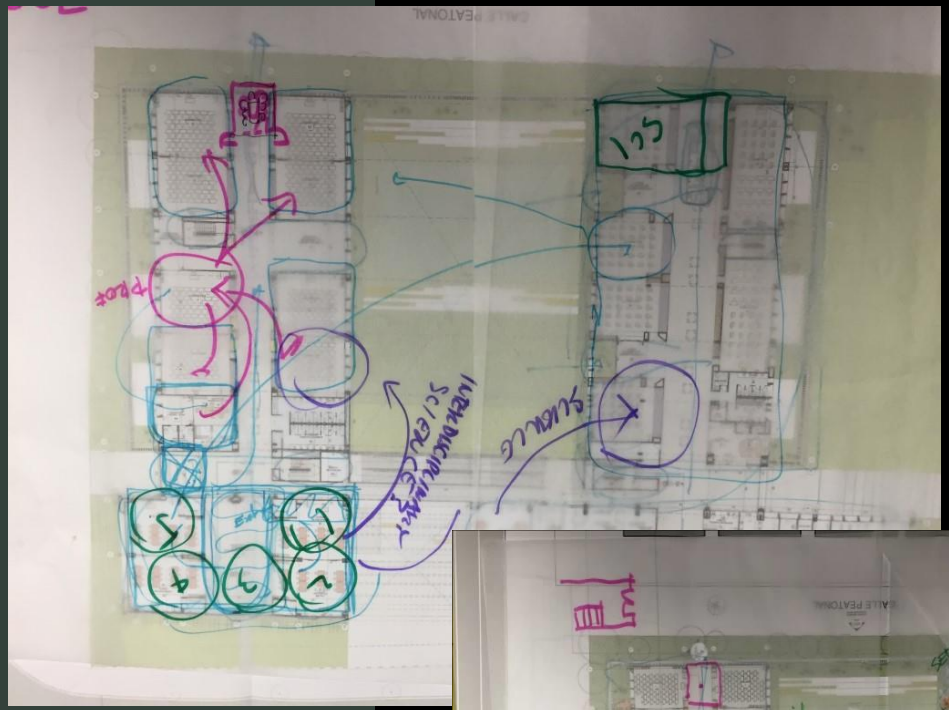
CAPITAL DISTRICT SCHOOLS +
COLOMBIA SOCIETY OF ARCHITECTS

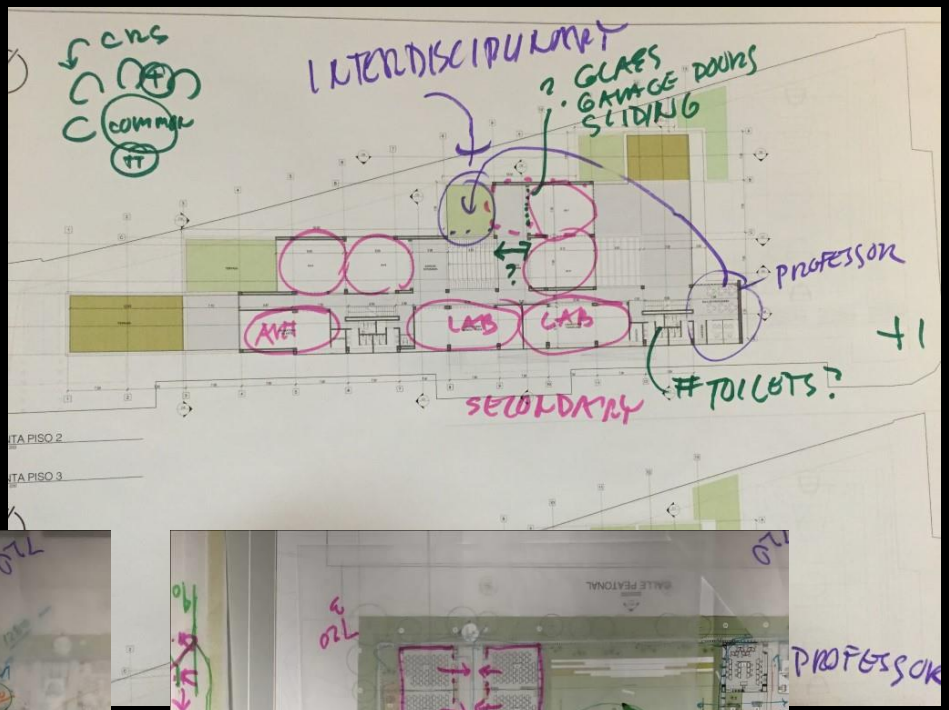
DESIGNS NOW EXPANDED TO 10+ SITES WITH 6+ ARCHITECTS

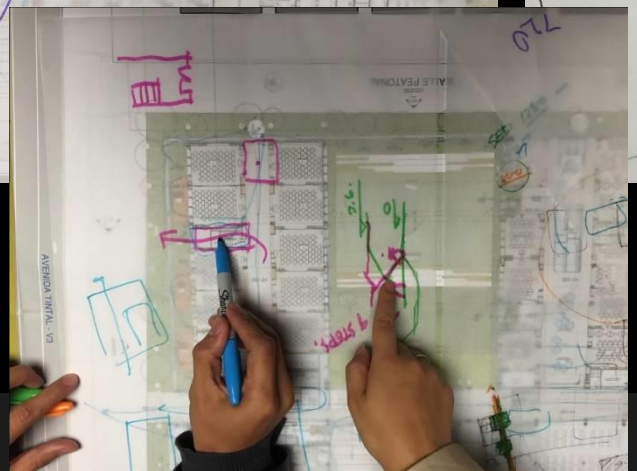
Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

DESIGNS NOW EXPANDED TO 10+ SITES WITH 6+ ARCHITECTS







Bogota 21st Century Schools Initiative

CAPITAL DISTRICT SCHOOLS + COLOMBIA SOCIETY OF ARCHITECTS

WINNER, COMPLETE SCHOOL COMPETITION