

Durham District School Board Response to Innovative Learning Grant Questions

Who participated (director only or director plus senior team)?

During this project, a committee was formed to support the research in Innovative Learning.

Learning Innovation Committee Members: Director Martyn Becket/Luigia Ayotte (Interim Director), Associate Director David Visser, Supt. Anne Marie Laginski, Supt. Silvia Peterson, Program Services Officer Tim Ralph, Brenda Coward, Manager of Facilities and Construction. 2 Secondary Principals and 1 elementary Principal.

Where was the program or project investigated? (Board, School, System, city, conference, etc.)

Project investigated innovative 21st Century schools at the following locations:

- Sept. 28: Regina Saskatchewan (3 school tours arranged as well as a working lunch with senior administration)
- Oct 5-7: San Diego, California (High Tech High, elementary, middle school and secondary)
 - Downtown Campus
 - Chula Vista Campus
- Staff Committee met throughout the 2015-2016 school year to discuss research and plan for next steps in the district.

What was learned (highlights, effectiveness at that location)?

The aim of the project was to explore and examine the intersection of architecture and classroom form on pedagogy and the resulting impact on student achievement and teacher practice. Our committee believes that the form, furnishings and environment of the school building affects the behavior of teaching and learning within that institution for both staff and students.

Our committee identified the following guiding principles which supported both learning as well as the construction of 21st Century schools. (as adapted from High Tech High, San Diego, CA)

- **Personalization:** A learner centered approach that supports and challenges each student.
- **Adult/World Connection:** Students connect their studies to the world beyond school, routinely creating work for authentic audiences and routinely showing their work to community and school members. Projects are created with community links and authentic purpose.
- **Big Ideas within the Curriculum** were at the fore of planning and teaching. Problem based learning and cross curricular studies were paramount. A value was placed on the 21st Century literate graduate. All curriculum was prioritized.
- **Common Intellectual Mission:** Students pursued a rigorous curriculum providing for entry to post-secondary and other multiple career entry points. Teachers deployed a variety of approaches to accommodate students within a diverse learning model.
- **Teacher as Designer:** Teachers worked within inter-disciplinary teams to design projects that they facilitated, taking the lead in staff meetings and within school groups. Schedules support team teaching, common rubrics and assessment toward graduation. Success was scaled and teacher driven through teacher committee and voice.
- **Teachers were connected to students.** All staff worked together to improve student achievement. All staff were connected to individual students to ensure that students were moving towards academic success.

The intersection of architectural form and pedagogy.

Physical construction of the buildings promoted teacher and student collaboration through transparency. The curation of student work throughout each building promoted high standards for student achievement. Community and public were invited into buildings to view the learning that was curated and displayed throughout the building. This provided pride in the learning that was taking place. Learning journeys and transparency was demonstrated on the walls of the schools. There was a feeling that the school had a plan and that staff were working to improve their learning.

Rooms were designed to promote collaborative teaching and learning for both staff and students with joining doors between rooms as well as doors

which would allow students to flow out into learning spaces outside their classrooms.

Enablers for Student Achievement Success at each school included:

- Very detailed interview/hiring process including teacher demonstration of a lesson in front of select staff and class of students as well as student voice included in the interview process.
- Teachers were regularly appraised and on an annual basis had contracts reviewed and renewed. Teachers chose to be in the schools and most we saw, had been teaching within annual contracts for a number of years.
- Teacher work areas were set apart from the classrooms and promoted collaboration.
- The offices of the schools were inviting and open and community based. Principal and Vice-Principal Offices were placed close to students and were welcoming and often found outside of traditional office space behind secretaries
- Buildings incorporated a great deal of transparency in terms of windows allowing natural light and a community approach to supervision
- Classroom furniture which was flexible and allowed for student collaboration was an important part of the learning

Monograph References used by the committee included:

- *Uncommon Learning*, Eric C. Sheninger
- *The Language of School Design*. Prakash Nair
- *The Third Teacher*. Cannon Design, VS-Furniture and Bruce Mau Design
- *Good to Great to Innovate*: Lyn Sharratt
- *What Works Best in Education: The Politics of Collaborative Expertise*, John Hattie.

Application in your district school board (what use will you be making of what was learned, value for students or staff or parents)?

The Learning Innovation Committee was intentionally created to make recommendations with respect to 21st Century design in new schools which would make a difference for teaching learning and positively impact student achievement. The committee has also taken on the role of creating a

catalogue of items that refurbishing schools might consider. The committee explored and produced a list of suggestions for the purchase of furnishings which will make a difference in terms of flexible, multi-use and personalized classroom items.

During the research phase, the Learning Innovation Committee met with a provincial school architect to examine trends in new school builds, a learning commons expert and executive member of the Ontario School Library Association, as well as Bev Feedman, educational consultant (bevfreedman.ca) to gain a better understanding of trends outside of our school board.

- The system team Principals and committee members worked with their staffs and schools to get feedback on what learnings could be brought to DDSB and why.
- The team used a template which identified features to include in classroom and learning spaces. They prioritized the features, commented on the features and stated guiding features on the form.
- A major learning piece for the committee was to bring start with the “Why”

The system team will be presenting to Principals at the June Principals meeting to assist them with their planning for the next school year’s purchases. This presentation will assist them in choosing furnishings and design elements which will have an impact on improving teacher practice and student achievement. The intention is also intended to assist staff in working more collaboratively to look at student success, differentiation and personalization. Principals on the team have experimented with furniture styles, begun the process of co-constructing the process through guiding principles. Principals will showcase the advances that have been made already through this year’s innovative re-design within our schools. They include redesign of learning commons, classroom re-design and furniture through learning.

Included in this report are two documents. One is a PowerPoint which summarized the key elements that were found in the initial 21st Century Design school visits. The second document is a spreadsheet of suggested 21st Century Design elements to be considered in new school builds as well as when refurbishing new schools.

Though much of our learning was centered on the intersection of form, classroom organization and pedagogy, time and time again in each school that we visited and consistently raised in our committee work was the importance of the leadership of the Principal of the school. Though a vision of 21st Century learning can be implanted through the strategic use of furnishings and building facets, the Principal of the school must bring this vision to the fore to staff, emphasizing how the guiding principles for learning are reflected in their teaching. Transparency in the form of classrooms joined together with glass doors, or transparency in terms of passive supervision through interior windows to hallways will not be truly effective unless a leader provides staff an understanding that all processes must be transparent. Clear feedback to students, transparent assessment for parents and open and honest collegiality between staff are mirrored in a 21st Century Learning environment. It is the role of the Principal to bring these attributes together.

Innovative Schools Design & Pedagogy



We were tasked to explore innovative design in school construction, innovative uses of technology and how these factors intersected with pedagogy.

Why?

To Prepare our Students to Become 21st Century Literate Graduates

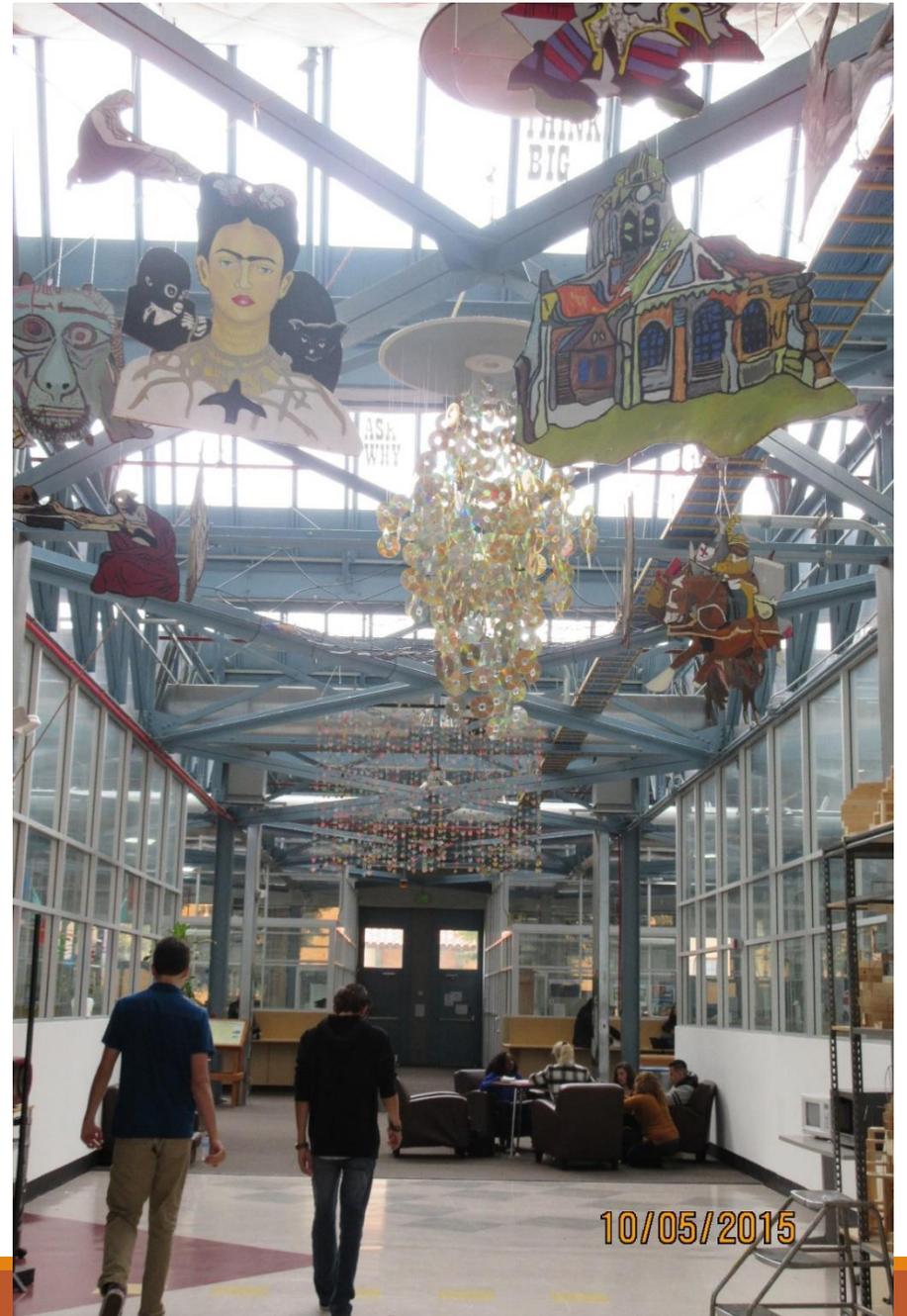


10/05/2015

Design — Pedagogy -- Technology



Exhibition of Evidence of Learning



10/05/2015

Hallway Exhibition of Learning – High School

HARK TANK

The Harchegani/Ishihara-Wing Corporation made an initial investment of **\$805**.
 With this money, the 9th grade math classes of HTHCV, made up of 18 teams,
 were able to generate combined revenues of **\$3,570** and combined profits of **\$2,765**.

CUPPED CAKES

Deliciously Versatile, Deliciously Fun!

Our product is cupped cakes, which are basically layered cups of cake in a cup. Our cupped cakes consist of chocolate cake, butter cream, and layered frosting, topped with various fresh fruit, sprinkles and more.

Available in 4 sizes: \$2.00, \$3.00, \$4.00, \$5.00



People's Pie

Our product is cupped cakes, which are basically layered cups of cake in a cup. Our cupped cakes consist of chocolate cake, butter cream, and layered frosting, topped with various fresh fruit, sprinkles and more.

Available in 4 sizes: \$2.00, \$3.00, \$4.00, \$5.00



Sweet Treats

Our product is cupped cakes, which are basically layered cups of cake in a cup. Our cupped cakes consist of chocolate cake, butter cream, and layered frosting, topped with various fresh fruit, sprinkles and more.

Available in 4 sizes: \$2.00, \$3.00, \$4.00, \$5.00



Space Bubbles

Our product is cupped cakes, which are basically layered cups of cake in a cup. Our cupped cakes consist of chocolate cake, butter cream, and layered frosting, topped with various fresh fruit, sprinkles and more.

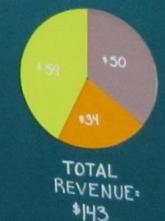
Available in 4 sizes: \$2.00, \$3.00, \$4.00, \$5.00



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SHARK TANK PROCESS

Our company sells what is known as shark bones. A shark bone is a hard-packed, moist cube of chemicals with several essences. They are used to add essential oils, scents and colors to bath water, make big your bath more relaxing.



INITIAL INVESTMENT
 COMPANY COST
 3 WEEKS PROFIT
 EXHIBITION PROFIT

10/07/2015



Storefront Classrooms

Projects Displayed inside and Out.

T-shirts

Interactive Music Display



Celebrating the life of a student killed in Gang fight.

HOW CAN WE REDUCE THE AMOUNT OF VIOLENCE IN THE US?

KICKSTARTER

BEFORE THE SCHOOL YEAR BEGAN, A FOCUS GROUP OF STUDENTS FROM OUR TEAM DECIDED TO EXHIBIT OUR ANSWER TO THE DRIVING QUESTION IN THE FORM OF A DOCUMENTARY FILM. AFTER REALIZING WE WOULD NEED AT LEAST \$10,000 TO PRODUCE A FILM, ALL 45 STUDENTS ON OUR TEAM RESEARCHED AND DISCUSSED HOW TO FUND OUR PROJECT. AT THE END OF A HEATED CAUCUS-SY-LE DEBATE, WE DECIDED TO USE THE CROWDFUNDING PLATFORM KICKSTARTER TO FUND OUR FILM.

DOCUMENTARY

WE KNEW WE WANTED TO PRODUCE A DOCUMENTARY, BUT WE HAD NO IDEA HOW TO DO THIS. WE WATCHED A FEW DOCUMENTARIES WITH THEMATIC CONNECTIONS TO OUR PROJECT, THE INTERRUPTERS AND INTO THE ABYSS, AND THEN WE DISCUSSED AND DEBATED: "WHAT MAKES A GREAT DOCUMENTARY?" WE THEN USED OUR ANSWERS TO GUIDE OUR WORK. AT THE SAME TIME, WE ENGAGED IN DEEP RESEARCH ABOUT WHY PEOPLE COMMIT ACTS OF VIOLENCE AND WHAT CAN BE DONE TO PREVENT VIOLENCE.

branding / messaging

social media

event planning / outreach

publicity

washington d.c.

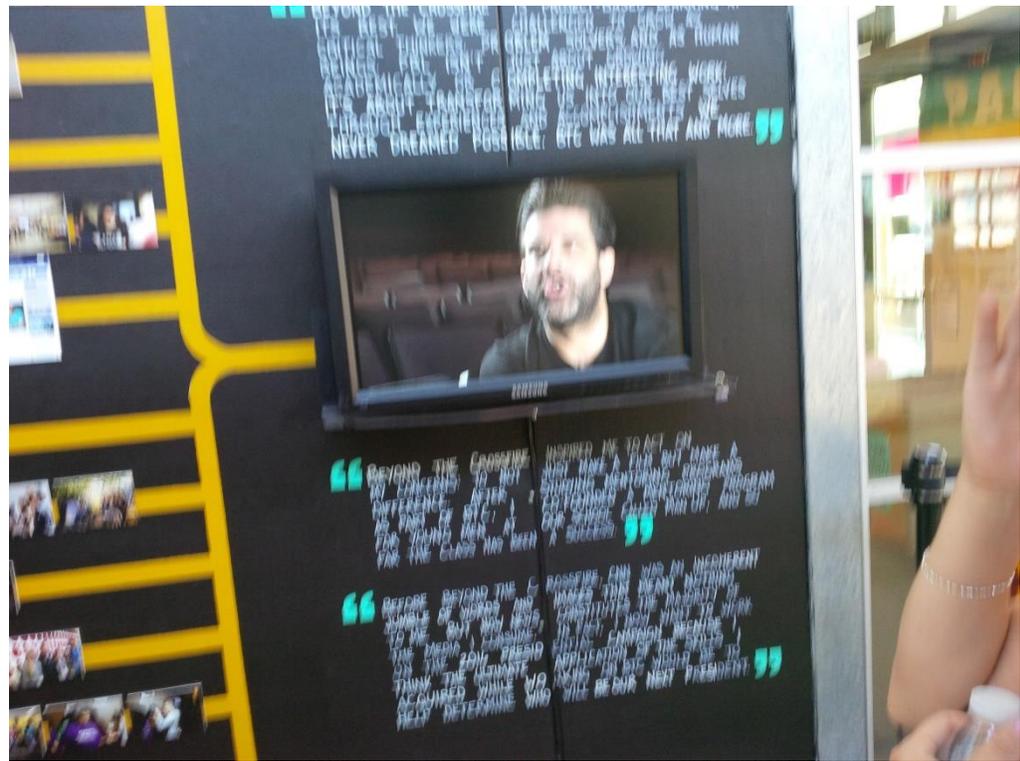
filmmaking bootcamp

mentoring

brain health

opportunities for youth

juvenile justice



Exhibition of Learning – How Can we Reduce The Amount of Violence in the US?

Interactive Project

Video shown to community at local theatre

ARTIST STATEMENT

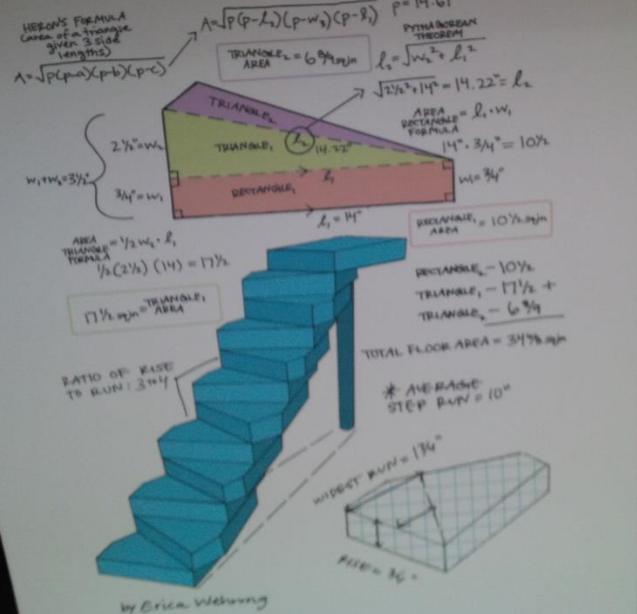
This display illustrates the movement towards and away from equity throughout U.S. history. It also shows how the Civil Rights Movement has evolved dramatically. Each gear was created by students on our team who chose to research the event it represents. The print image and size of each gear portrays the impact of the event. The person on the bottom crying embodies the past, showing all the pain and tears our ancestors sacrificed for us to be where we are right now. The woman at the top represents a modern woman who bows down to no one. The tree reminds us that whoever we are, deep in our roots, blood and tears have been shed fighting for equality. The gear that has equity written on it is isolated - unreachable, because that's what we aim for, yet there's still a long way to go.

- Lidia Vasquez, HTMCV 8th Grader 2015



THE STAIRWAY TO NOWHERE PROJECT

1:10 MODEL



10/05/2015



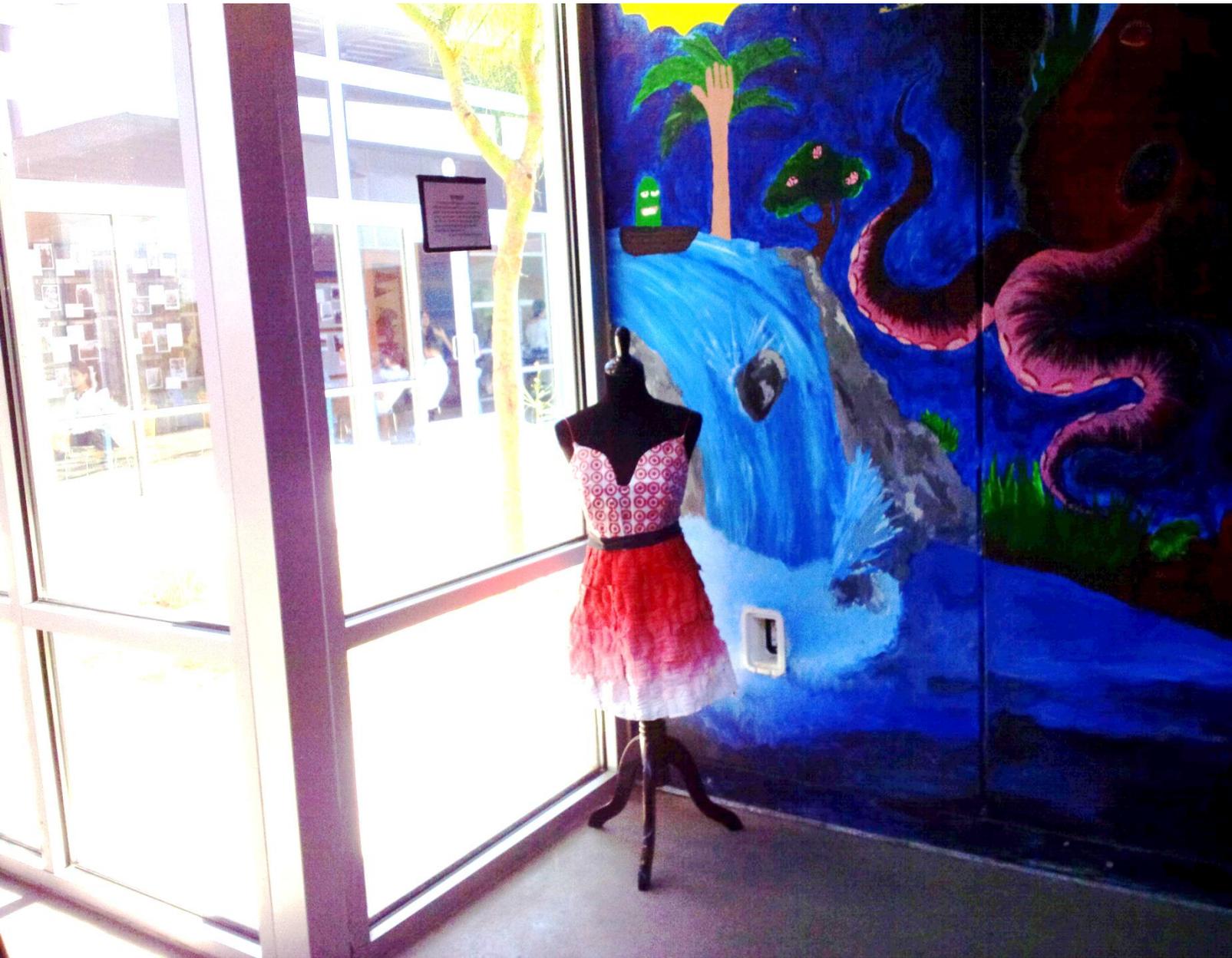
10/05/2015



Please, turn the gears of change, gently. It takes more than one person turning the gears in unison to get them all moving. We must work together to make progress. To learn more about each gear and the event it represents, please scan the QR code to the left or visit our project web page:

<http://cstaf2.wix.com/gears-of-change>





Personalized to Student Interest with
an Adult World Connection



Final project for senior class was to Envision, plan, write a book and Publish it on Amazon.com

How: The Intersection of Design and Pedagogy.



Transparency

Elementary
Classroom

“when everyone sees
into my classroom, it
can’t help but up my
game to be honest. –
Grade 2 teacher.







Science Classroom

Project Based

Hands-on Equipment
Technology Infused
BYOD/10-15 laptops
In each class



Multiple Functions within
Classrooms

Integration of Subjects

Humanities
Science/Math
Engineering

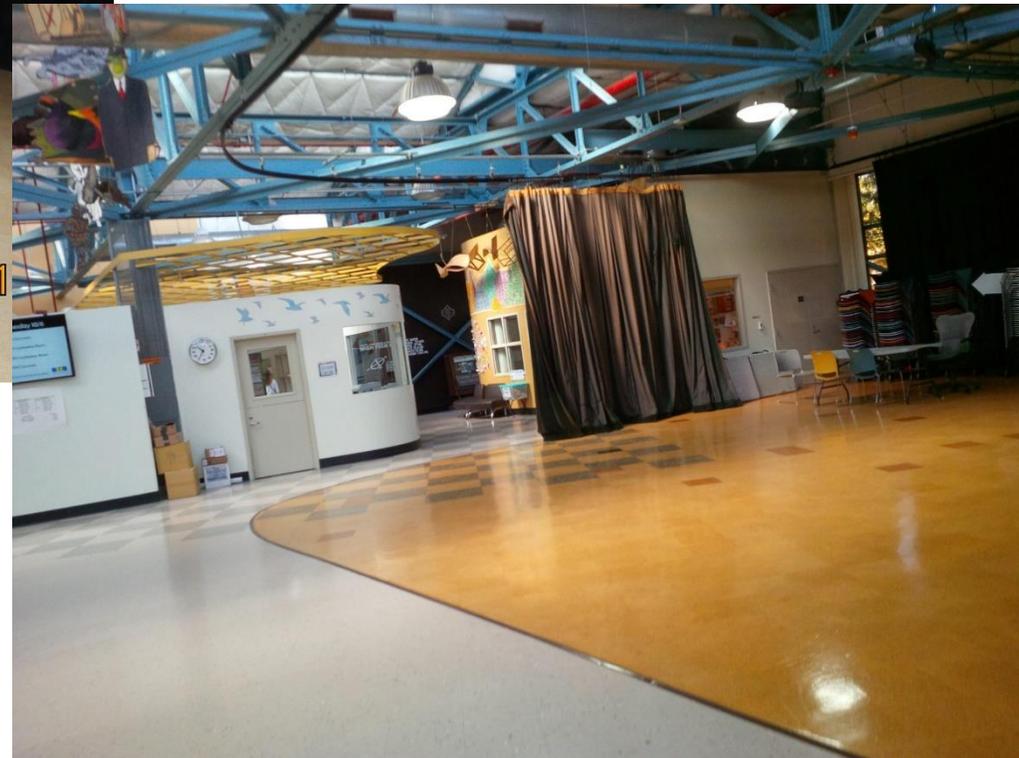




10/05/201

Flexible Space throughout
The school

Performance Space in Hallways





Flexible Design allows for
Solid dividers in open spaces

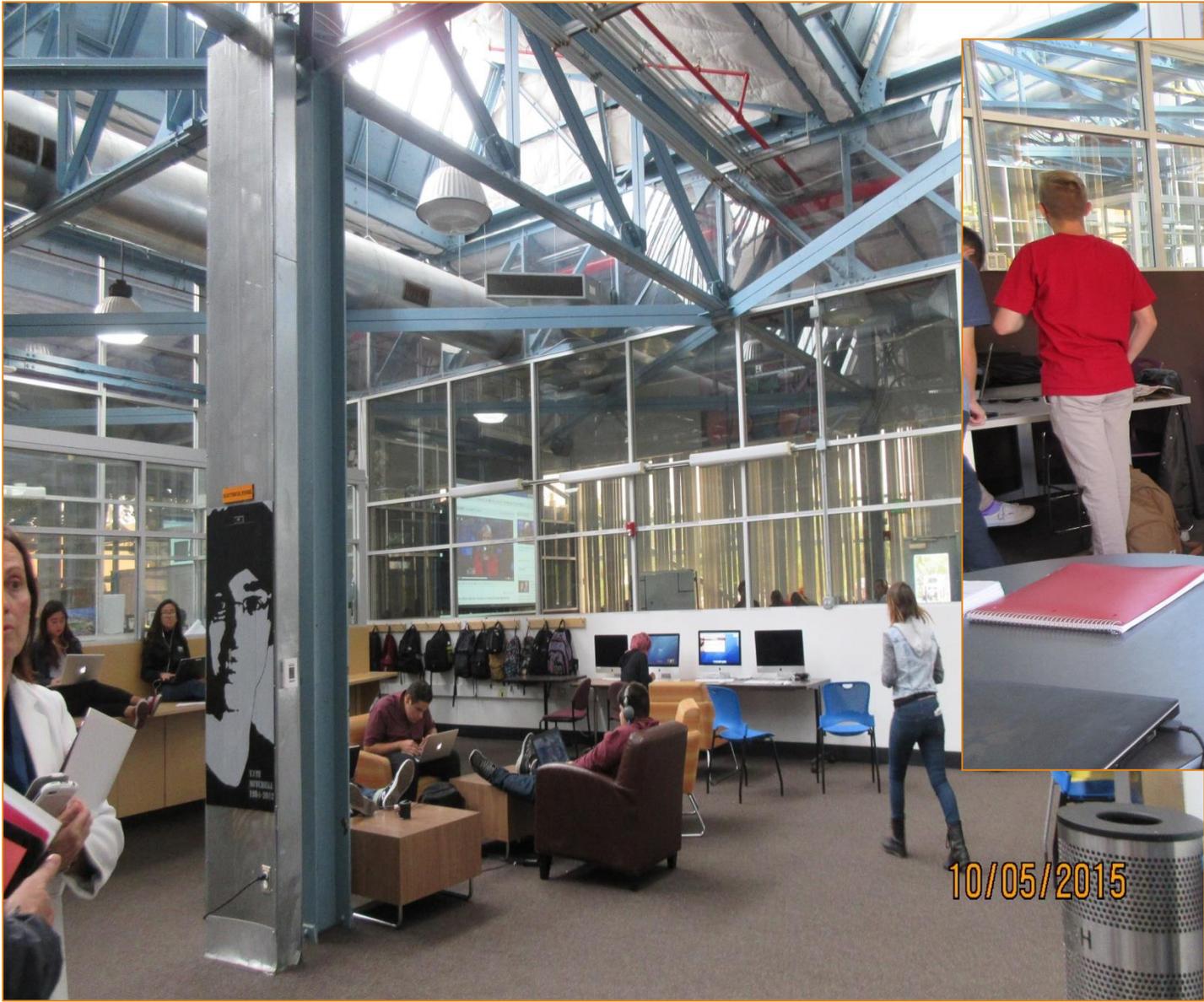
Flexible design uses includes

- Garage doors to open space
- Garage doors between rooms
- Sliding doors between rooms



Team Teaching

Design allowed for collaboration
And structured team approach



Technology is not highlighted but visible Everywhere.



Technology Tools – both computer and hands-on



Passive Supervision

Shared Classroom Space
Is invented and created
With students.

Shared space outside of
4-5 classrooms



Student Trust and Student Ownership

Student created benches

Students working on cloud technologies outside of classes in a grade 10 wing.

Microwaves in each shared student space for heating snacks and lunches





School Within a School

Principal Office open and transparent to Grade 9 area

Vice-Principal Office open and transparent to Grade 12 area



Principal Office



Learning commons becomes a Flexible learning space in the school

Here all classrooms surround the stacks.

Grade 7-8 students look down on this Area from balcony



Library stacks of books separated
By division and left in flexible
Learning spaces outside classroom
Clusters.



Administrative Areas

Welcoming, transparent
Service oriented.

09/28/2015



Office Area is welcoming and Open.

Counters Common

Administrative Staff (P and VP) are
Down the hall or in another wing





Secondary Office Area – Secretaries and Guidance Secretaries



Design Principles in Pedagogy

Personalization

Adult World Connection

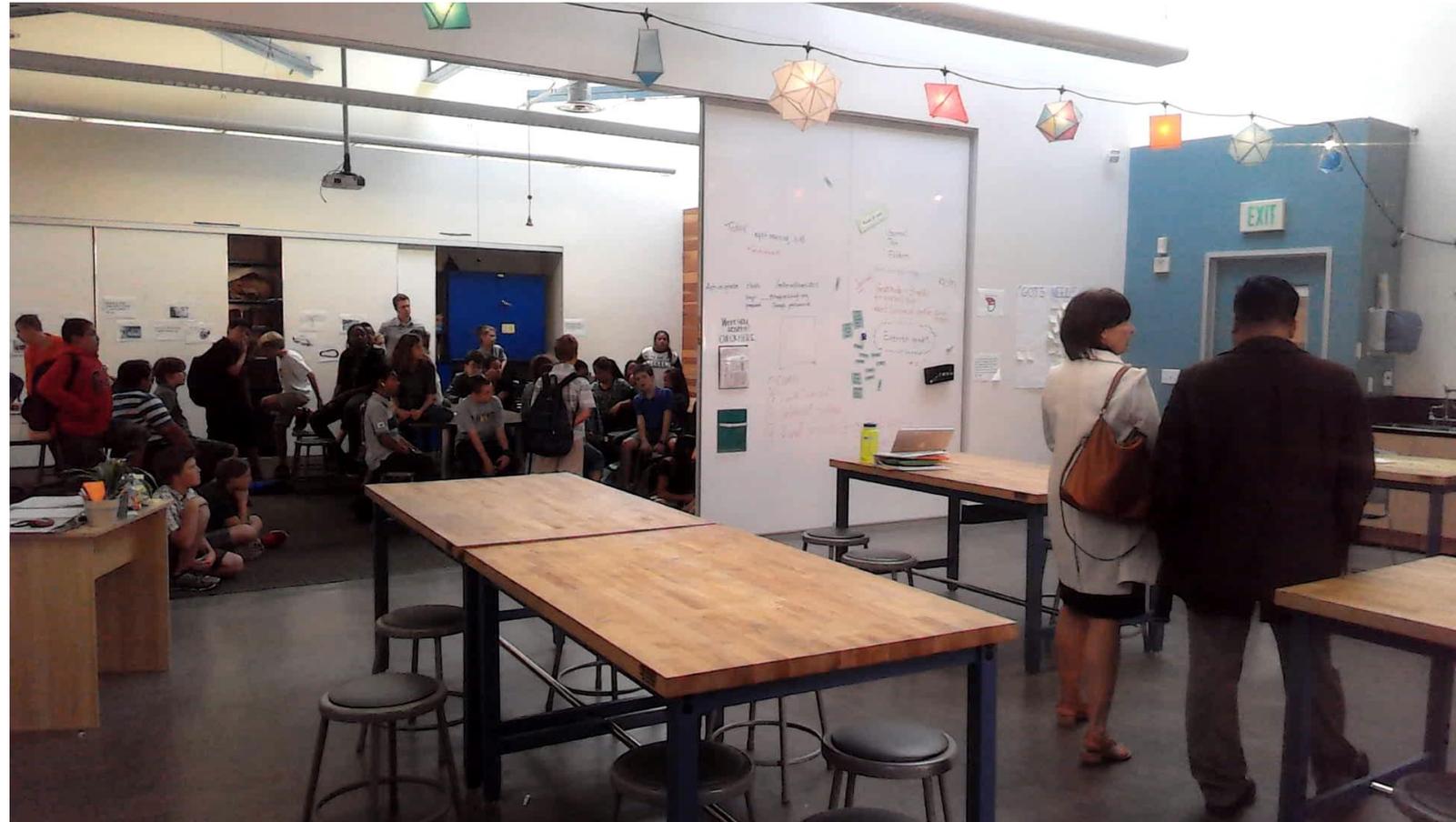
Common Intellectual Mission

Teacher as Designer

Design Principles for Facilities

Transparency

High-Performance Work Environment



High Tech High responds directly to the needs of students. All four principles connect to the broad mission of preparation for the adult world. The design principles permeate every aspect of the school; personalization through advisory, emphasis on integrated, project based learning and student exhibitions, the requirement of all students to perform internships in the community and the provision of ample planning time for teacher teams during the work day.

<http://videos.hightechhigh.org/>



School Successes

- Thirteen schools (five high schools, four middle schools, and four elementary schools) at three locations.
- Approximately 5000 students (63% students of color; 42% qualify for free or reduced lunch).
- 600+ employees.
- 96% of graduates have gone on to college, 66% to four-year institutions.**
- Students accepted by blind, zip code based lottery.
- 80% of students who enter as a 9th grader graduate from an HTH school (others change schools, move, etc.).**
- 34% of graduates major in STEM (compared to 17% nationally).
- First charter management organization to operate its own [Graduate School of Education](#) (GSE) fully embedded within a K-12 learning community.
- Approximately 250 educators enrolled in formal credentialing and master's degree programs.
- Annual operating budget: approximately \$40 million
- HTH schools operate on effectively 85% of the public dollars of other California public schools, since there is a building cost for California charter schools.
- Approximately 2000 visitors per year.

High Tech High – San Diego, CA

**Learning Innovation
Elementary School Building Features**

| <u>Features to Include</u> | <u>Priority</u> | <u>Comments</u> | <u>Guiding Principle/Why</u> |
|---|-----------------|---|---|
| <p>1 Standard Classroom</p> <ul style="list-style-type: none"> • additional corridor windows into classrooms • half lockers if required for corridor wall space • connecting doors between classrooms • whiteboard wall for students • provide maker space in all classrooms • reduce millwork (remove teacher's closets and upper cupboards and bookcases) | | <p>Is there a 3/4 locker available?</p> <p>replace tackboards</p> <p>additional counter height power - furniture</p> <p>provide cook hook and lockable desk/purchase moveable bookcases</p> | <p>transparency</p> <p>teacher and student collaboration</p> <p>increase room flexibility for furniture</p> |
| <p>2 Art/Science Studio convert to Learning Studios</p> <ul style="list-style-type: none"> • place either side of library learning commons - connecting doors and windows • industrial type floor finish • eliminate dropped ceilings • white board wall for students • provide makerspace • reduce some millwork (demonstration desk and art sink peninsula) • reduce amount of perimeter sinks • remove science prep room • remove kiln space and rough-ins | | <p>investigate options. polished concrete not acceptable</p> <p>area with counter height power</p> <p>provide portable demo desk no sink/power. Sink available close by</p> | <p>work bench type furniture to be purchased</p> <p>increase room flexibility for furniture</p> |
| <p>3 Music</p> <ul style="list-style-type: none"> • remain as is due to acoustics and storage of equipment | | | |
| <p>4 Library Learning Commons</p> <ul style="list-style-type: none"> • flexible space • perimeter accessible power for device charging • remove/reduce size of librarian workroom | | <p>furniture driven - booths, comfortable seating, café seating</p> <p>provide lockable storage in library commons</p> | <p>Locate on second floor - closer to intermediate students for free flow</p> |
| <p>5 Stage Area as flexible multi-purpose space</p> <ul style="list-style-type: none"> • whiteboard on stage moveable wall • stage drape storage area so stage drapes are out of the way when not in use • some glazing in corridor wall for transparency with blinds for lockdown • keep counter with sink | | | |
| <p>6 Miscellaneous</p> <ul style="list-style-type: none"> • ends of corridors @ window - nook for built in bench • incorporate built in furniture in corridor where possible • office - provide more welcoming space • whiteboards in corridor for students • student commons for intermediate students • add storage in school for before & after school child care • remove built-in reception counter in general office | | <p>not just wood, p. lam with funky colours</p> <p>If space allows - consider supervision</p> <p>Purchased furniture to coordinate with office furniture</p> | <p>Lock down? Security? AC?</p> |

**Learning Innovation
Secondary School Building Features**

| <u>Features to Include</u> | <u>Priority</u> | <u>Comments</u> | <u>Guiding Principle/Why</u> |
|---|-----------------|---|---|
| <p>1 Standard Classroom</p> <ul style="list-style-type: none"> • additional corridor windows into classrooms • half lockers if required for corridor wall space • connecting doors between classrooms • whiteboard wall for students • provide 2 or 3 sets of classrooms with folding partitions with whiteboard surfaces • provide one on each floor a multi-purpose studio space classroom, for inquiry based learning/cross curriculum • ceiling power available in all classrooms • high fold down counter for student use of devices • reduce millwork (remove teacher's closet and bookcases) | | <p>investigate 36" sidelights, how many lockers would we lose? Is there a 3/4 locker available - glazing above window</p> <p>replace tackboards moveable by teachers - manual larger space than standard classroom. Convert one of the existing computer lab spaces for this classroom. Similar to the converted staff room at DAWSS</p> <p>power at top of counter height, locate at back of classroom</p> <p>purchase moveable bookcases where needed</p> | <p>transparency</p> <p>teacher and student collaboration for student use</p> <p>merging of academic disciplines</p> <p>increase room flexibility for furniture</p> |
| <p>2 Science Labs and prep rooms</p> <ul style="list-style-type: none"> • reduce size of demonstration desk • is gas needed in all science classrooms • reduce size of prep room, combine staff work room | | | <p>Virtual experiments highly used</p> |
| <p>3 Art Rooms</p> <ul style="list-style-type: none"> • design more like a studio space • industrial flooring (sealed concrete?) open ceiling space, no dropped ceilings • provide track flexible lighting in ceiling space and drop down power source • remove dark room and kiln | | | |
| <p>4 Music</p> <ul style="list-style-type: none"> • remain as is due to acoustics and storage of equipment | | <p>acoustics still an issue - sound traveling</p> | |
| <p>5 Theatre Arts</p> <ul style="list-style-type: none"> • remain as is | | | |
| <p>6 Computer Labs</p> <ul style="list-style-type: none"> • reduce quantity to 3 or 4 for 1200 pp school • provide perimeter and island desks - desktops still being used • room could be smaller | | | |
| <p>7 Technology - Transportation - Construction -</p> <ul style="list-style-type: none"> • remain as is | | <p>stainless steel counters in work area preferred no motion sensor for opening overhead doors review equipment layout/power/ducts</p> | |

**Learning Innovation
Secondary School Building Features**

| | | | |
|---|--|---|---|
| <p>8 Gymnasium/Weight Room</p> <ul style="list-style-type: none"> • work room with other staff • instructor room only with showers/washroom connected to gym | | | |
| <p>9 Staff Workrooms</p> <ul style="list-style-type: none"> • amalgamate 10 small workrooms to 4 large workrooms (2 each floor) • no perimeter work stations flexible island stations for multiple configuration • provide small kitchenette in each • provide small private room off work room for phone calls, private conversations | | <p>provide for at least 75 staff for 1200 pp school furniture purchase including support staff - E A s Quiet area for phone calls, etc</p> | <p>multi discipline use for cross curriculum colaboration</p> |
| <p>10 Library Learning Commons</p> <ul style="list-style-type: none"> • flexible space • perimeter accessible power for device charging • remove/reduce size of librarian workroom and circulation desk • cubbies for back packs at entrance to remain • display of books to invite students into the space • reduce quantity of built-in bookcases • Two seminar rooms are good - add moveable partition with whiteboards between them | | <p>furniture driven - booths, comfortable seating, café seating</p> <p>provide lockable storage in library commons</p> <p>Noise from Music Room can be hear - review acoustics</p> | |
| <p>11 Stage Area as flexible multi-purpose space</p> <ul style="list-style-type: none"> • whiteboard on stage moveable wall • stage drape storage area so stage drapes are out of the way when not in use • keep counter with sink | | <p>Small control room for theatre arts Projector in theatre arts</p> | |
| <p>12 Cafeteria</p> <ul style="list-style-type: none"> • add whiteboards for flexible teaching space • provide projector if possible • furniture - café seating, booths, comfortable seating, computer bar • storage for caf tables to create more flexible space | | <p>dual purpose as student commons area additional store high counter @ exterior windows could be additional gym space</p> | |
| <p>13 Miscellaneous</p> <ul style="list-style-type: none"> • ends of corridors @ window - nook for built in bench • incorporate built in furniture in corridor where possible • office - provide more welcoming space • whiteboards in corridor for students • student commons | | <p>not just wood, p. lam with funky colours</p> <p>Reception desk outside main office? Can't remove screen - too noisy</p> <p>If space allows - consider supervision - connect to café or library</p> | <p>Lock down? Security?</p> |

Features to Include

1 **Built -in Bookcases**

- quantity at da Vinci reasonable amount
- provide more high bookcases for intermediate students and for reference material

2 **Circulation Desk**

- Vincent Massey circulation desk design ideal layout
- provide space for student check-out, librarian's computer, file drawer and book drop
- power/data - locate higher in desk for easier access - provide race way
- mutiple levels to desk to accommodate smaller students

3 **Projection Screens**

- remain as is due to acoustics and storage of equipment

4 **Workroom**

- reduce size to 1/3 current size
- counter and cupboard for storage
- no sink required
- good location for private phone calls
- cart counter/dock is no longer required

5 **Computers - data & power**

- provide raceway of data and power for 12 computers
- provide power and data at any columns in library learning commons
- provide power and data in as many places as possible

6 **Connection to Science/Music/Art**

- connection to Science would be great, with Art connected to Science
- provide maker space connection between science and library commons
- music - isolated location and remain as is, consider accoustics for location

7 **AV Storage**

- rename space
- used for guided resourses
- power outlets for charging device carts

8 **Furniture**

- area for casual seating (ie: 4 soft chairs, cube seating, benches, café tables, booths)
- provide flexible moveable furniture for various configurations
- moveable shorter bookshelves to accommodate separating the room into zones for different classes

9 **Miscellaneous**

- confirmed best location for the library commons is the second floor
- power right inside library commons entrance for charging of device carts
- no computer lab - provide solid wall (no windows) good location for high bookcases
- open flexible space
- Higher ceilings where possible - open ceiling not dropped ceiling, painted structure above

**Library Learning Commons
Building Features**

Priority Comments

| | |
|--|--|
| | dual language books required depending on the location of the school |
| | |
| | |
| | doesn't need to be by circulation desk drawers are useful in workroom storage cabinet |
| | Use power outlets with USB charging ports above counter/desk height one high power outlet for tv or monitor |
| | maker space part of science with glazed screen with door to library commons |
| | |
| | |

| | |
|--|--|
| | <p>two lower shelves are rarely used</p> |
|--|--|

| | |
|--|--|
| | <p>If no accoustic ceiling - provide accoustic wall panels</p> |
|--|--|

