

# 21<sup>st</sup> Century Learning

- Program Review -

May 29, 2018

# DEFINING 21<sup>ST</sup> CENTURY LEARNING

Time-Based  
Textbook-Driven  
Passive Learning  
Teacher-Centered  
Fragmented Curriculum  
Printed Assessments  
Print  
Isolation  
Facts & Memorization



## 20<sup>th</sup> Century

Teacher-led  
instruction,  
committed to  
acquiring  
knowledge



## 21<sup>st</sup> Century

Student-centred  
instruction  
committed to  
developing  
competency

Outcome-Based  
Research-Driven  
Active Learning  
Student-Centered  
Integrated Curriculum  
Multiple Forms of Assess.  
Multimedia  
Collaboration  
Higher-Order Thinking

*21<sup>st</sup> Century Schools, 2010*

Re-defining schooling around learning outcomes that address skills, knowledge and attitudes, including:

Critical Thinking   Creativity   Communication   Collaboration  
Cross Cultural Competency   Global Awareness   Character education

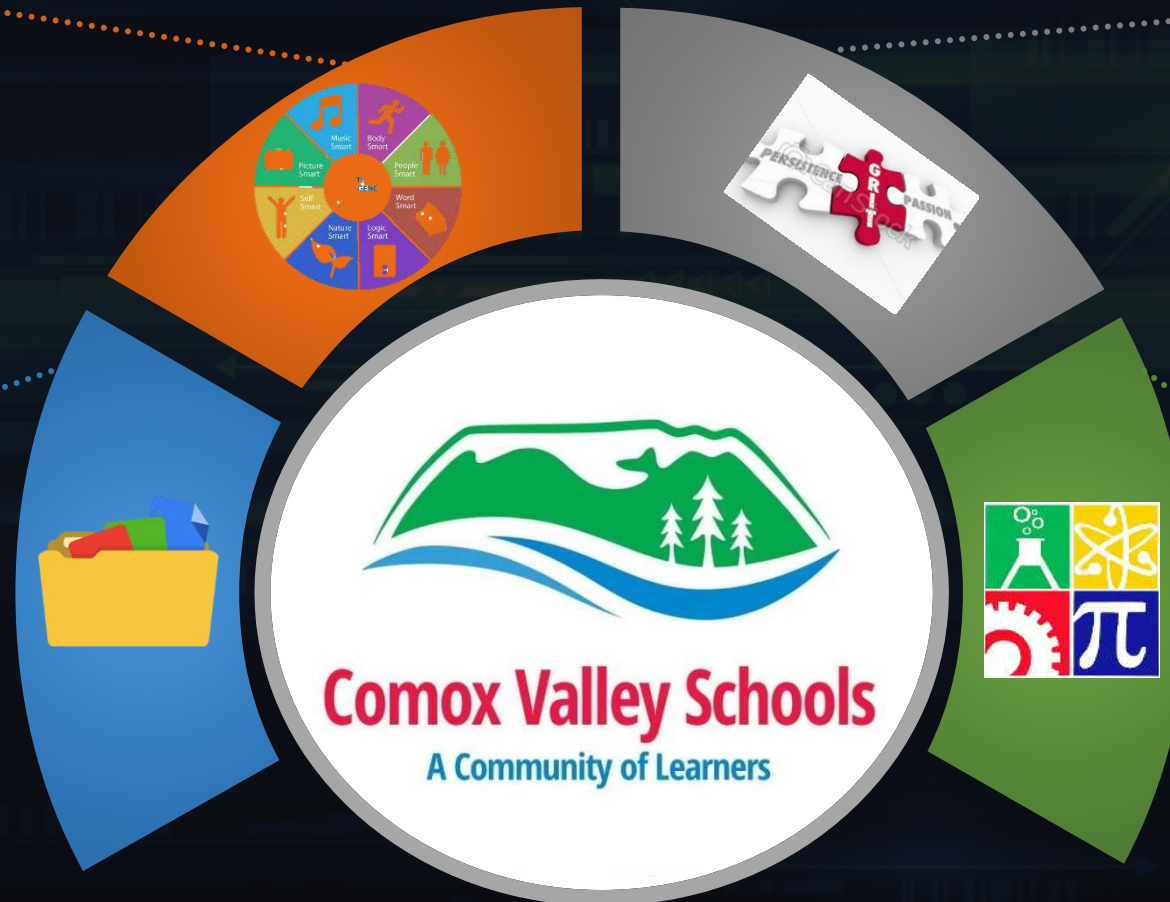
# Evidence of 21<sup>st</sup> Century Learning in SD71

## Multiple Learning Styles

Trades Training  
Blended Learning  
Flipped Classroom  
ENTER, E2, FAE

## New Assessment

E-Portfolios  
Self-Assessment



## Personalized Learning

Independent Directed  
Studies  
Inquiry Projects  
Capstone

## STEM

Destination Imagination  
Robotics Club  
Coding kits

# An example of articulated implementation

**Coding Through the Grades**

	Grade												
	K	1	2	3	4	5	6	7	8	9	10	11	12
Coding Program/Product	Beebots/Bluebots												
	LittleCodr												
	Scratch Junior												
	Dash and Dot												
	Cubelets												
		Sphero (Complexity of projects increase with age-start with driving pad and move up to coding.)											
		Code.org and Hour of Code											
			Tickle										
			Ozobots										
				Swift Playground									
				Scratch									
				Makey Makey									
					Arduino Lilypad (Complexity of Projects increases with age.)								
					Microbit (can later be joined with Raspberry Pi and Arduino)								
						Lego Mindstorms							
						Khan Academy Programming Courses							
							Arduino Sparkfun Kit						
								Arduino					
								Raspberry Pi					



# What we know about successful implementation

## Readiness- the first overlooked step

Sometimes we purchase what no one asked for, or create training opportunities few people are interested in.

## Integration- Ensuring students benefit

Having the equipment and providing the training is most of the way there, but the new practice must be integrated into pedagogy for students to benefit.





# CHAMPIONS





# Barriers to Change



# FINANCIAL REVIEW

Staff Involved:		Expenditure	Total Cost
	Randy Grey – coordination of career programs and applied skills		
	Kara Dawson- technology support		
	FAE		
	ENTER		
	Curriculum Support Teachers		
School and District Programs			
	ADST implementation		
	Destination Imagination		
	District Musical		
	Infrastructure and equipment replacement	\$100,000 budgeted this year	\$100,000
	VEX Robotics		
	IMaker, Makerspace		
	ADST and coding initiative – Kara Dawson	\$80 000 (provided by ministry of education)	\$80 000
	Secondary High Tech Equipment (3-D printers, robotics, lasers, CNC)		
	Elementary Maker Kits		
	Explore Program/ Outdoor Ed. Programs (Elementary)		
	Scholantis EPortfolio Program		
	Blended Learning – Release time, professional development, dinner workshops		

21<sup>st</sup> Century Learning is a way to work, not something extra to do. Therefore, our biggest expenses are already being paid for.

This initiative requires creativity and commitment from us before it requires more money.



# STAFFING

As 21<sup>st</sup> Century Learning is a pedagogical approach more than it is a program, we don't have specific staff attached to implementing a change that all are expected to embrace.

01



## Champions

Setting the example and showing what is possible

Generating interest for others to take part

02



## CSTs, Librarians

Professional Development

In-class, shoulder to shoulder training

03

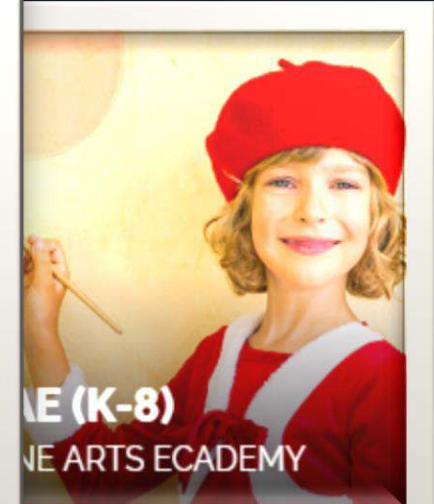


## Administrators

Collaboration opportunities

School-based budget decisions

# PROGRAMMING



Moving to a new form of educating students will entail new ways providing their education. Here are some examples of the flexibility we need to be prepared to adopt.



# ASSET MANAGEMENT

## Evolution of Libraries

Developing the Learning Commons, including laptop carts rather than computer labs allow students to remain in their original learning environment



## Lesson Integration

Ensuring students benefit from what we purchase and train on.



## Professional Development

Making better use of our time dedicated to Pro-D by bringing more people together to work toward a common goal.



## Equipment Repair/Replacement

More hands on learning means more purchasing, but this might be offset by savings from photocopying.

# ARTICULATION

## What's working

- Coding through the Grades (slide 4) is a good example
- ENTER grades 6-7, ENTER2 8-9, iMaker grades 10-12

## Not so much

- EPortfolios and assessment for learning starting in Elementary school and not fully continuing in high school
- FAE – does not articulate past grade 8 presently
- Cross-curricular classrooms (elementary) to divided departments and classes (high school)
- Segregation by subject area at high school makes self-assessment of core competencies more challenging



Do current offerings and directions in the area of 21C Learning in SD#71 demonstrate alignment and coherence with Ministry and District Goals?

- It is the opinion of the Program Review Committee that we are seeing excellent examples of 21<sup>st</sup> Century Learning in all sites by various individuals and programs.
  - There is a direct correlation between these results and the presence of Champions at these sites.
- There is also significant reticence to move into these new pedagogical and assessment practices, for a variety of reasons which include lack of knowledge, lack of conviction, lack of resources, lack of oversight and a general attachment to established practice and general mistrust of change.
- The Committee believes that the implementation of the Applied Design Curriculum is proceeding effectively at the elementary level and is making headway at the secondary level.
- The Committee believes that 21<sup>st</sup> Century Learning is moving forward on a ragged front, with early adopters making headway, but the effort is not coordinated.

# IMPLEMENTATION METHODS

## Rely on our Champions

This, by necessity, means we achieve success in pockets which may or may not grow or even be sustained

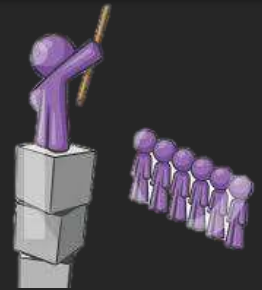
1



## Proclaim the Change

Today's Learning for Tomorrow's World could be construed as a District kick-off to 21<sup>st</sup> Century Learning

2



## Align the Organization

Build trust and respect in the organization and then emphasize a common need to move in this direction, involving all stakeholders.

3



Today's Learner



for Tomorrow's World



# OUR PREFERRED FUTURE



## Flexible

Flexibility in terms of space and time (timetable)-eg. Blended learning, time to finish a course, multi-age groupings (skill groupings), Choice programs

1



## Relevant

connect their learning to their life and their desired future. Graduate students who have the skills, abilities and passion to move forward.

2



## Personalized

More community connection, more fluidity between world, community and classroom, more wellness, health, life skills support, more interdisciplinary courses

3

# RISKS TO CONSIDER

- Sometimes programs may not appear to align with district and ministry goals initially – an element of patience may need to be present in order to see impact of new programs. It can be 3-5 years before a vision can come to fruition
- Burnout of staff, particularly of our champions and early adopters
- Failure being seen as "wasted time" for the kids involved in the program start ups
- Creation of programs that require very particular skill sets – can be difficult to find people for specialized positions. Expensive new programs require succession planning.
- Potentially damaging competition between schools
- Competition among staff within schools, competition for students, timetabling decisions that have far-reaching program implications



# REVIEW TEAM



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