

Innovate High School, Edmonton Public Schools

Background

1. Innovate is a hands on project-based program that supports student learning in real world context.
2. *We use a student-centred approach known as andragogy and believe that it takes an entire community to raise a student.*
3. This results in students imagining great possibilities where they can create, ideate and innovate. They are encouraged to reinvent the wheel and make it better, to fail and try again. *Students connect to the greater community and discover career pathways.*
4. As a result of student-led initiatives through Innovate, Queen Elizabeth was recognized as the greenest school in Canada. They've completed many projects such as photovoltaics on the roof, growing food, building solar lanterns for Haiti, life straws for clean water for Haiti, building 3-D printers and creating prosthetics for children, and energy management.

Energy Management

- Our most iconic project to date is **Energy management**. Students get to monitor energy usage in real time of schools and city buildings. The data is used to identify areas of energy waste and then students determine solutions **reduce carbon footprints** and operational **costs to tax payers**. In this way, we hope to raise generations of energy literate Albertans.

Road Blocks

- We would love to see Innovate all schools but there **are many road blocks to widespread implementation...**there needs to be time and FTE funding for PROJECT DEVELOPMENT and PROJECT MANAGEMENT
- Project development takes time, and teachers do not have such time built into their FTE so that they can
 - Find funds for the initiative (Grant writing, seeking sponsors)
 - Make purchases from vendors who first of all have to be approved by the school board (have to send them a form)
 - Constant networking to connect with experts in a variety of disciplines

- Create and deliver presentations
- Forming community partnerships...so that students can work and learn in real world settings
- Ongoing Communication with decision-makers (admin, schoolboard facilities, consultants, granting agencies and sponsors, parents, students, other.....)
- PROJECT MANAGEMENT
 - In order to implement a project, a teacher must become aware of any potential liabilities (this happens through communications with various stakeholders such as administrators, schoolboard facilities staff, etc...)
 - Need to find resources and spaces within schools to house equipment, maintain it, etc...
 - Organize field trips and have them approved by admin and the schoolboard, send home a variety of pertinent forms (FOIP for media, itinerary, book transportation to and from....)
 - Facilitate the process of student learning
 - Figure out how to evaluate and measure learning outcomes....

Overcoming obstacles

- The amount of effort it takes and often in the face of traditional school systems that do not like to do things differently, teachers step away as they have to get through their teaching. This is why it is absolutely crucial that large schools or schoolboards hire EXPERIENCED TEACHERS as Project Coordinators who act as consultants and organizers of initiatives and take care of a lot of the obstacles that get in the way of implementing project-based learning.
- We need to create models of implementation (project coordinators would help figure out how to incorporate developments in curriculum and infrastructure so that we make buildings or spaces within buildings that actually teach by having observable elements of sustainability built into the design)
- The more teachers focus on student-centred approaches, things fall into place easier than trying to micro-manage every little detail of a student's learning – let others be involved in supporting student's development.

- We need to fund pilot projects and put them into action so that committees having something real life to reference in their meetings to better understand how things can change.

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