



UBC Teacher Candidate Mini Conference

Discussion-Based Learning, Collaboration and
Technology in the Mathematics Classroom

December 5th, 2017

Southridge School – South Surrey

- University Preparatory Day School (Independent)
- Founded in 1995
- Approximately 680 students
- Junior School (PYP & MYP - International Baccalaureate World School Grades K-7)
- Senior School (SSEP & AP)
- One-to-One Laptop Program (Grade 5-12)

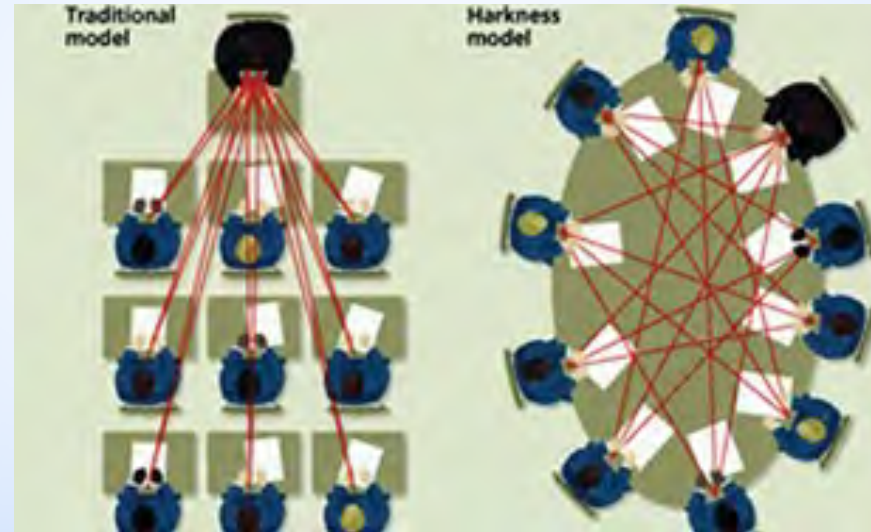


<http://www.southridge.bc.ca/page.cfm?p=965>

SSEP – Building our Educational Plan

Researched on Harkness Learning

- Developed and implemented at Phillips Exeter Academy, New Hampshire, USA
- Edward Harkness's gift: "What I have in mind is a classroom where students could sit around a table with a teacher who would talk with them and instruct them by a sort of tutorial or conference method, where each student would feel encouraged to speak up. This would be a real revolution in methods."
- Started Harkness approach to teaching in 1930.



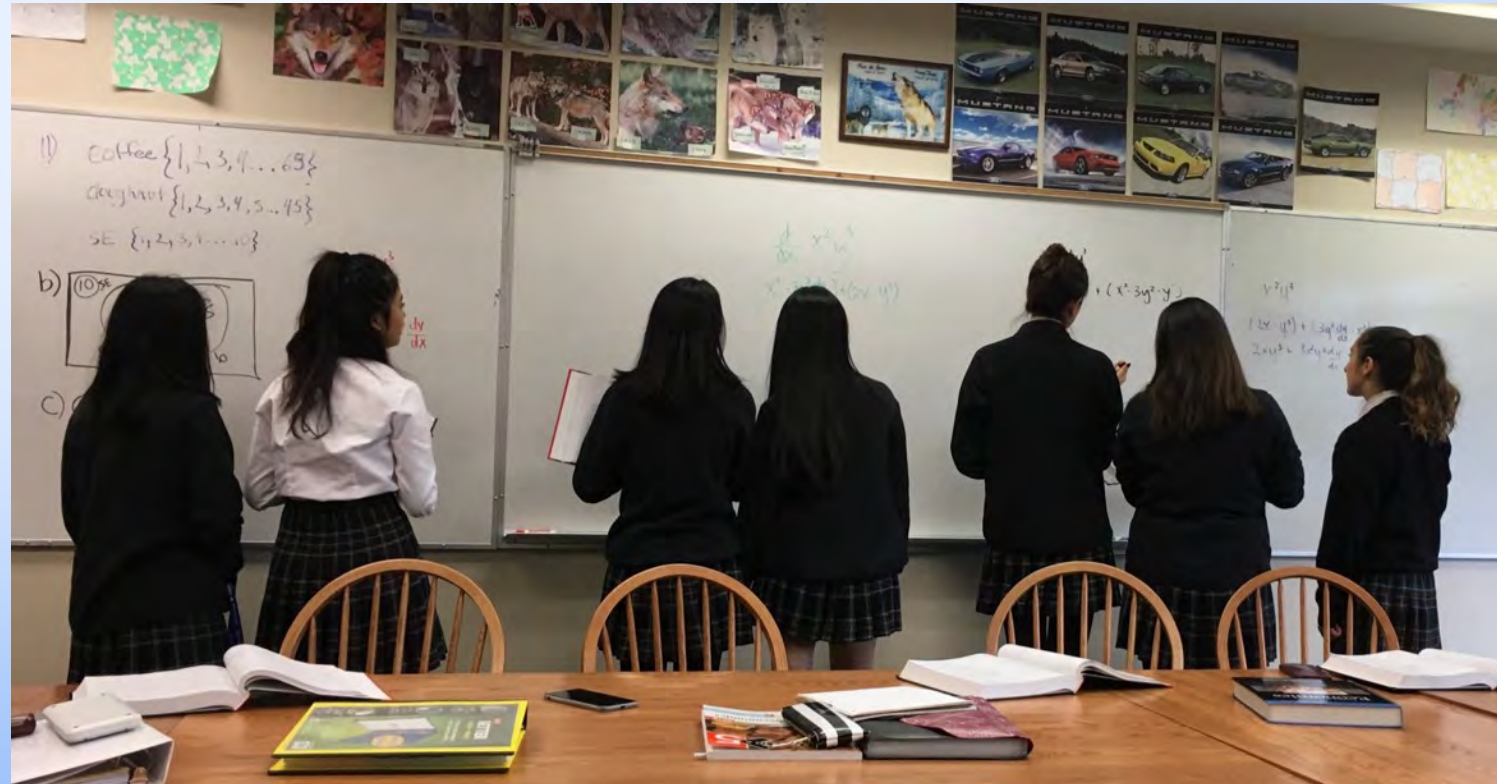
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https://www.exeter.edu/media/content/harkness_Flash_harkness3_rdax_422x294_75.jpg

Discussion-Based Collaborative Learning Environment

- Students come to class prepared to discuss the current topic.
- Questions are brought to the table, 5-10 minutes spent discussing topics from the video and questions that the students have.
- Students work on questions on the whiteboards or tablets in small groups.
- Once questions are attempted, the whole group is brought back to the table for a summative discussion to formalize the process, offer suggestions to questions that are incomplete and/or assist students who struggled.

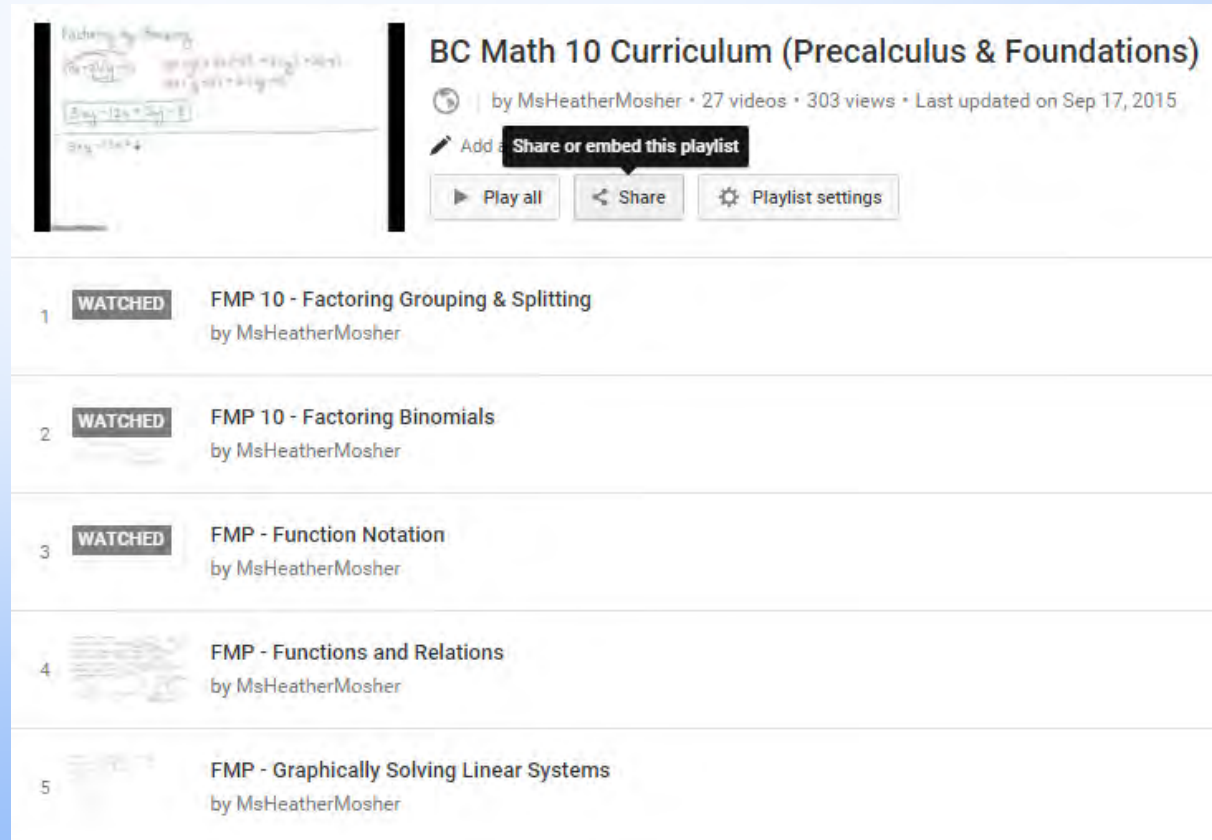


Creating Videos and Integrating into Classroom Discussion

The videos provide the opportunity for the students to gain exposure to the topics prior to the class.

Suggestions:

- Record your own videos so students hear your voice and you maintain ownership of the content and direction for the next class.
- Keep the videos short and concise.
- Make the videos accessible.
- To ensure students have watched the videos, include questions that will be discussed at the next class, in various locations in the video.



BC Math 10 Curriculum (Precalculus & Foundations)

by MsHeatherMoshier • 27 videos • 303 views • Last updated on Sep 17, 2015

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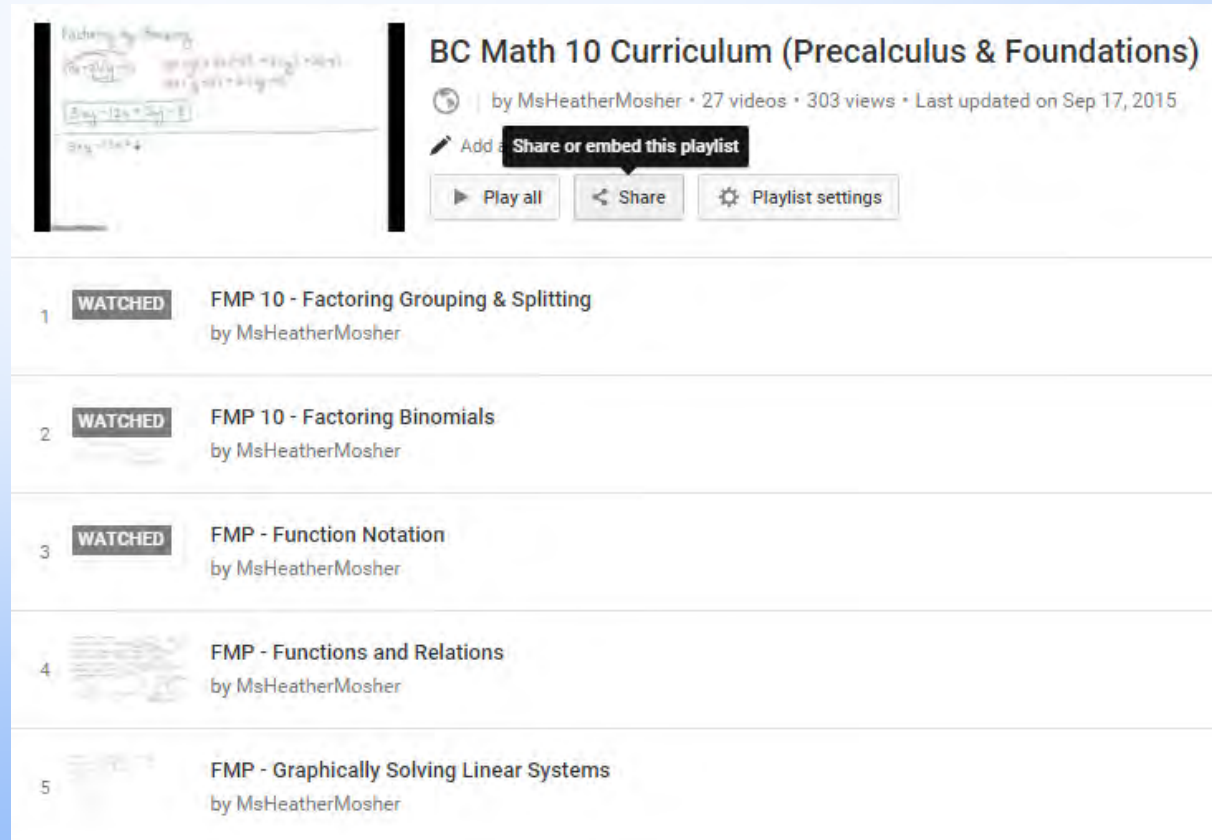
Creating Videos and Integrating into Classroom Discussion

How I create videos for my students:

- Tablet with OneNote (or laptop with USB writing pad).
- Screencast-o-matic (<http://www.screencast-o-matic.com/>) and save as a MP4.
- Post to my school's LMS via my YouTube Channel.

Other software:

- Microsoft Office Mix (Office 365 Extension)
- Explain Everything (iPad)
- ShowMe (iPad)
- Screen Chomp (iPad)
- Educreations (iPad)
- Moovly



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Formative Assessment through Discussion

Creating an environment for discussion:

- Less focus on being correct; discussions grow with mistakes.
- Focus on good questions from students.
- Let students answer each other's questions.
- Small groups & knowing students comfort levels to create safe discussions.
- Let every voice be heard.
- Know what the students know.
- Don't focus on note taking.



Vertical Non-Permanent Surfaces

- Peter Liljedahl (SFU) & Darien Allan (SFU) have presented on their research on using vertical non-permanent surfaces and how it increases students engagement.
- Students in my classes work in small groups, collaborate and work on windows, whiteboards and tablets.
- We have a scribe for questions done on the whiteboard, as it is presented to the class, so that even though there is no risk to work on the boards, a copy is shared with the students to refer back to.
- Utilizing Windows OneNote Class Notebooks as a way to keep the students organized.



Heather Mosher @MsHeatherMosher · Oct 30

#sridge @SouthridgeNews Grade 12's dressed as superheroes today and are fighting calculus in style!



Integration of Tablet PC's

- One-to-One laptop program in our school.
- Students are utilizing Schoology, Google Apps and OneNote Class Notebook (Office 365) to access resources.
- Students are creating videos to showcase their understanding.
- LanSchool to help students share and explain problems.
- Using AirParrot in conjunction with AppleTV to showcase students work.



Videos

Snapshot of our Classrooms

- <https://www.youtube.com/watch?v=ZUZOlwJ2TqA>

YouTube Playlist

- https://www.youtube.com/watch?v=mukkEfRLTeI&list=PLYFJ9RQgn1kHgJE0_kKKaqN8JDioF8Eja

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