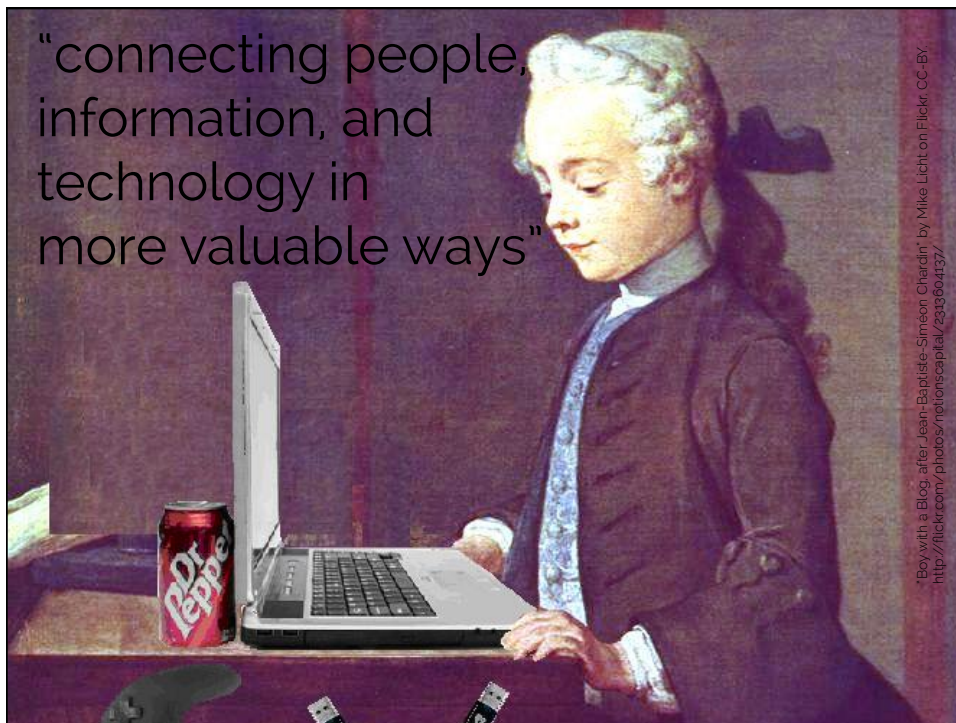


“Woman with Blog after Pablo Picasso” by Mike Licht on Flickr. CC-BY
<http://flickr.com/photos/notionscapital/2660276937/>

Rigorous Learning with Technology: Secondary Edition

Kristin Fontichiaro
U-M School of Information
Slides: bit.ly/fontblog
font@umich.edu
[@activelearning](https://twitter.com/activelearning)

AIMS - OCTOBER 7, 2013, 1:15 - 2:45PM
DETROIT COUNTRY DAY UPPER SCHOOL



“connecting people,
information, and
technology in
more valuable ways”

“Boy with a Blog after Jean-Baptiste-Simeon Chardin” by Mike Licht on Flickr. CC-BY
<http://flickr.com/photos/notionscapital/2315604137/>



- Where have we come from?
- How do we define rigor?
- Testing our thinking





Any guesses?

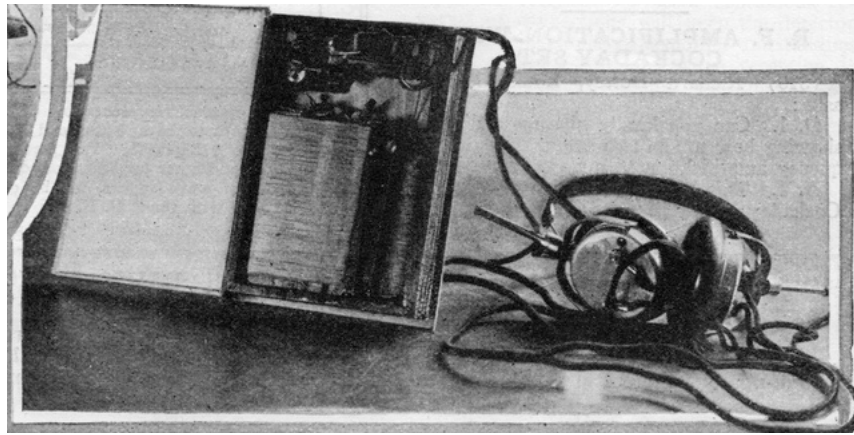
"With the everyday added perfections in the transmission and reception... Mary ... will enjoy her ... lessons as much as she now enjoys her bedtime stories. Everything will be an "open book" to her. [It] will take the place of bulky primers and readers. Home work will now be a great joy ... and lessons will be learned with much greater facility."



The Game-Changing Technology!



Close-Up!

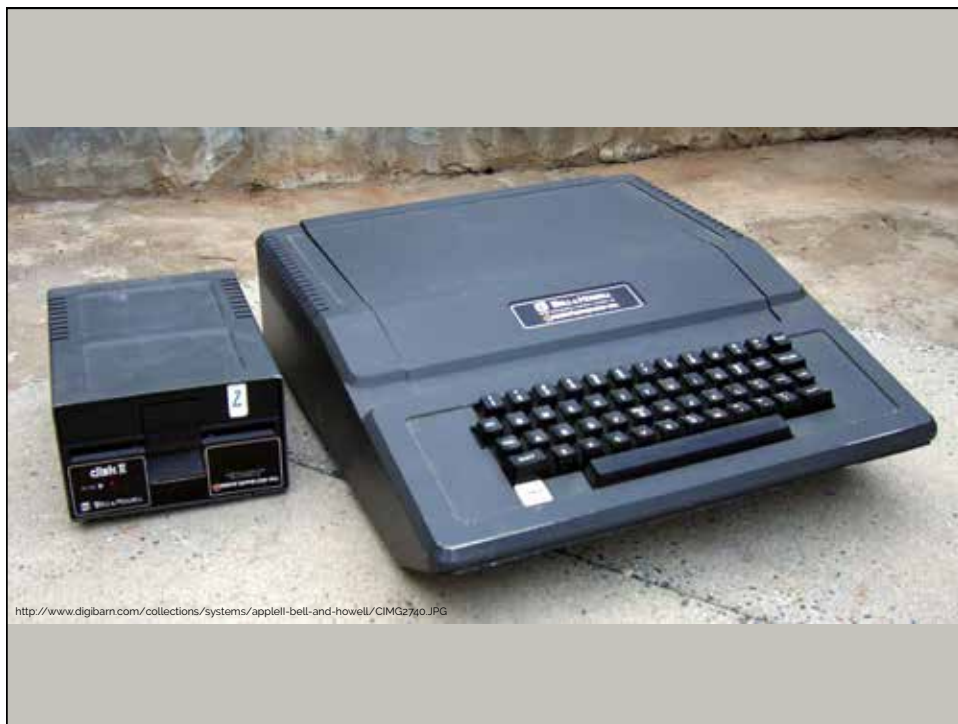


Text and images from: <http://paleofuture.gizmodo.com/this-radio-book-was-the-future-of-education-509067457> used under Fair Use exemption

Hands up if you have used the following technologies in your classroom.



"The Consumer Conjuror," after Bosch, by Mike Licht on Flickr. CC-BY. <http://flickr.com/photos/notionscapital/493202030/>









"Detail With Bust of Minerva and iPad, after Angelika Kauffmann" by Mike Licht on Flickr. CC-BY <http://flickr.com/photos/notionscapital/8088734277/>

TURN AND TALK:

How have past technology initiatives improved student learning?

What made them succeed?

Where have we fallen short?

Scribe at <http://todaysmeet.com/aims>



"Mrs. Duffee Seated in a Dressing Room, Reading Her Kindle, After Mary Cassatt" by Mike Lighton Flehr
CC-BY
<http://flickr.com/photos/notionscapital/4186999037/>

A related thought ...

What does it mean to be literate today?

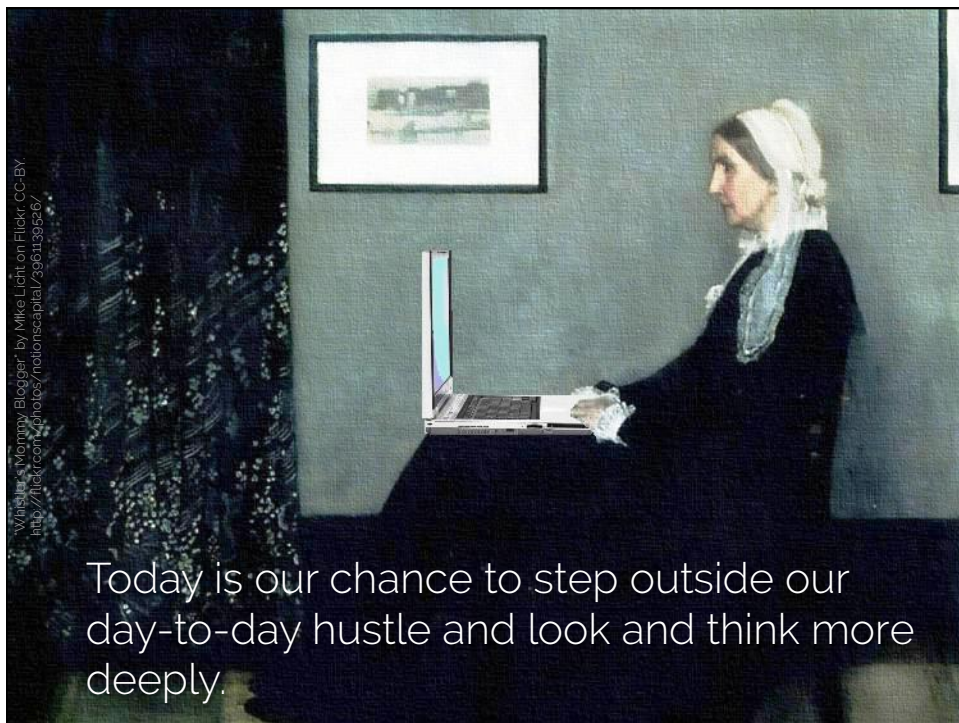
(Said differently: what skills do you need to navigate the physical and virtual worlds?)

<http://todaysmeet.com/aims>

How far have we come in using computers to promote cognitive growth in the past 35ish years?



Image: http://en.wikipedia.org/wiki/File:Bell_and_Howell_Apple_II.jpg by Jeff Keyzer, used with a Creative Commons Generic Attribution 2.0 License



FANCY NANCY syndrome:

Students make minimal cognitive investment and plug a few trivial infobits into a Web 2.0 tool. They are lauded for their "creativity" ... even though the software engineer did the hard work, not the student.

E-EFFORT syndrome:

Students make minimal cognitive investment and plug a few trivial infobits into a tool where they do a lot of the aesthetic construction.



Christopher
Columbus
was born in
1461.

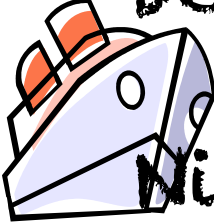


HE WAS
BORN
IN
ITALY.

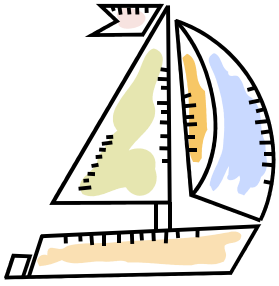


HOME OF PIZZA!!!!!!! yumm!!!


He had three
boats:






Nina



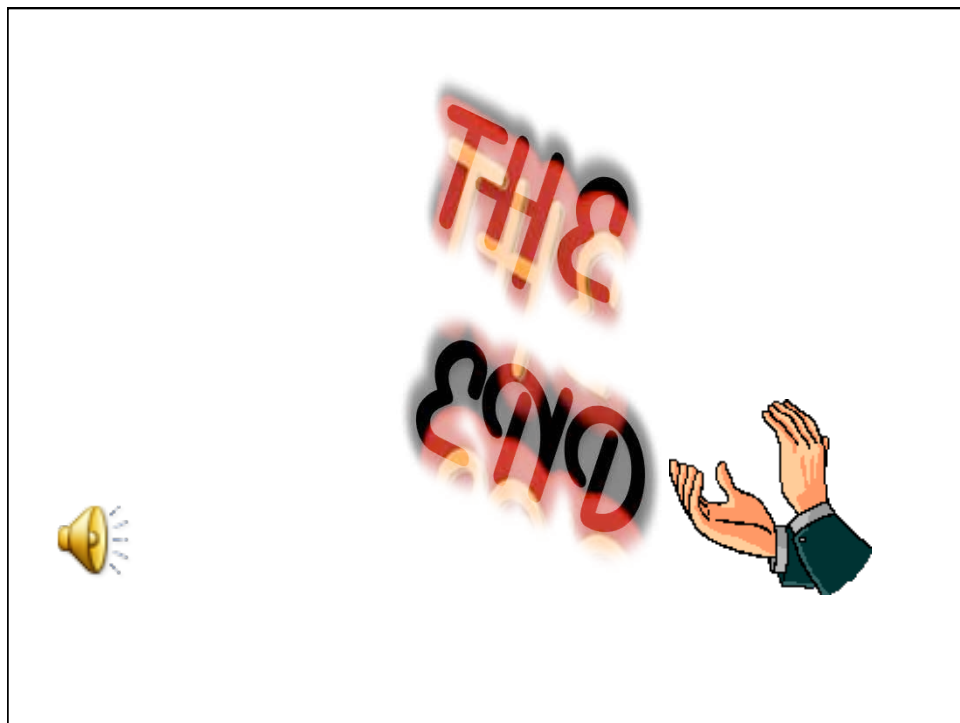
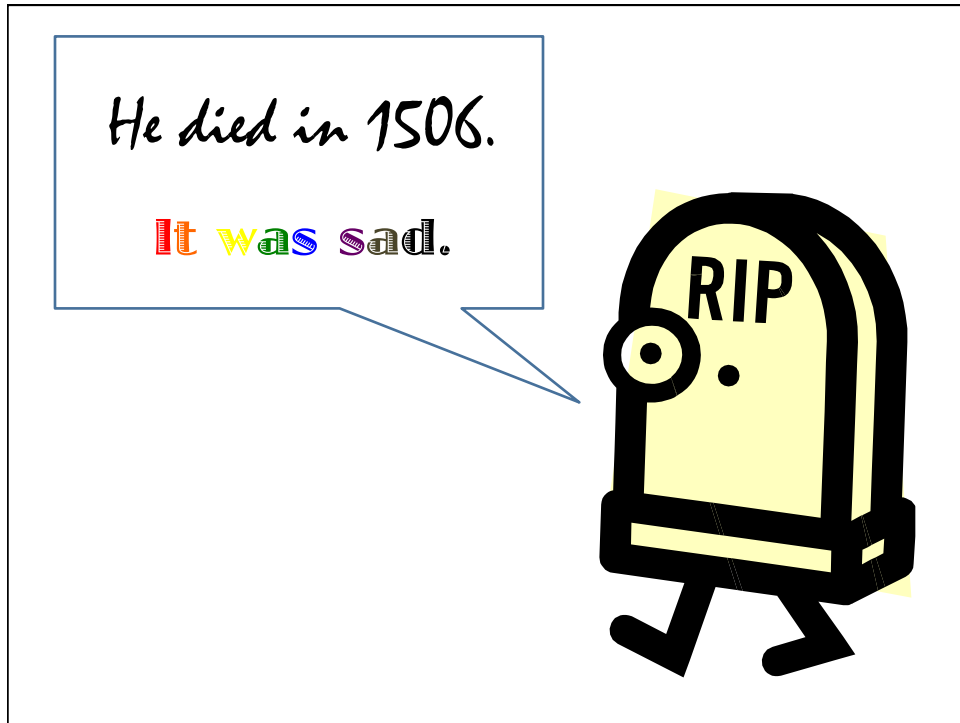
Pinta



Santa Maria



He
discovered
AMERICA!!!





Countess Buccuoi and Her iPad, after Elisabeth-Louise Vigée-LeBrun, by Mike Licht on Flickr. CC-BY. <http://flickr.com/photos/miclightonscapital/515678334/>

What do students gain from projects like this?



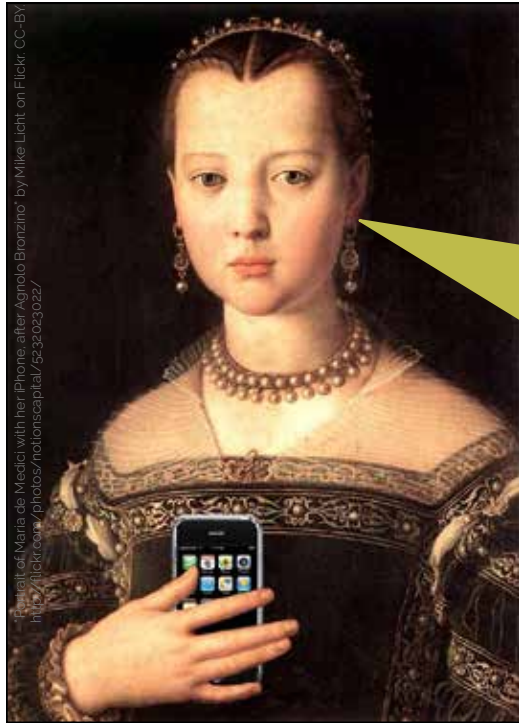
Countess Buccuoi and Her iPad, after Elisabeth-Louise Vigée-LeBrun, by Mike Licht on Flickr. CC-BY. <http://flickr.com/photos/miclightonscapital/515678334/>

Yes, they're using technology, and yes, it transcends pen-and-paper, but where is the knowledge-building?

student + tech > student

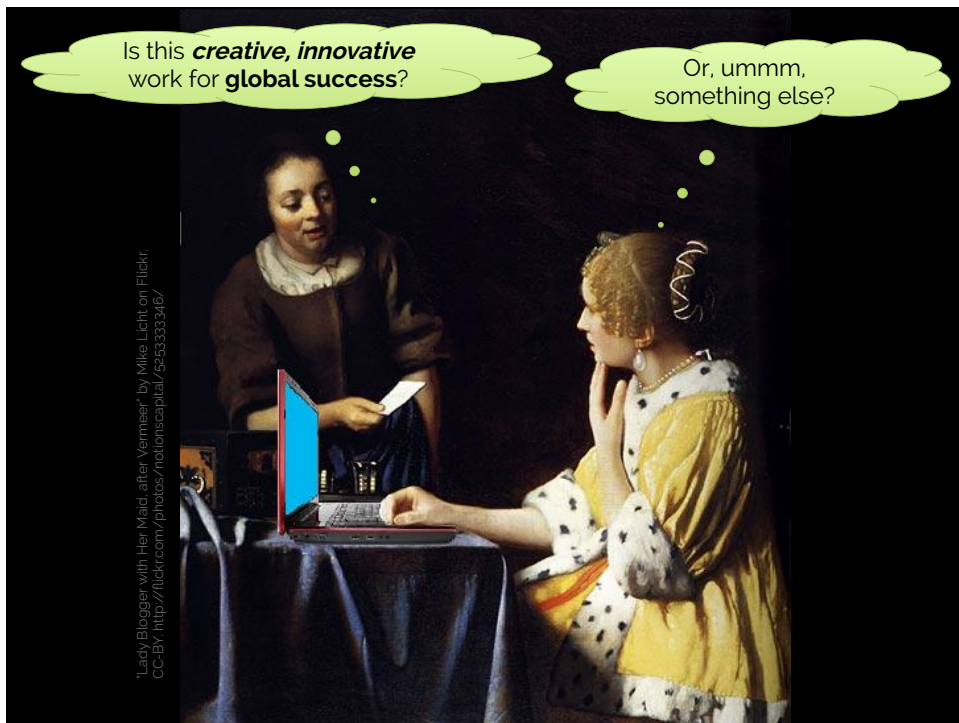


Which parts of this project could NOT be outsourced to India? (And who would buy it?)



Portrait of Maria de Medici with her iPhone, after Agnolo Bronzino, by Mike Licht on Flickr. CC-BY. <http://flickr.com/photos/notionscapital/5232023022/>

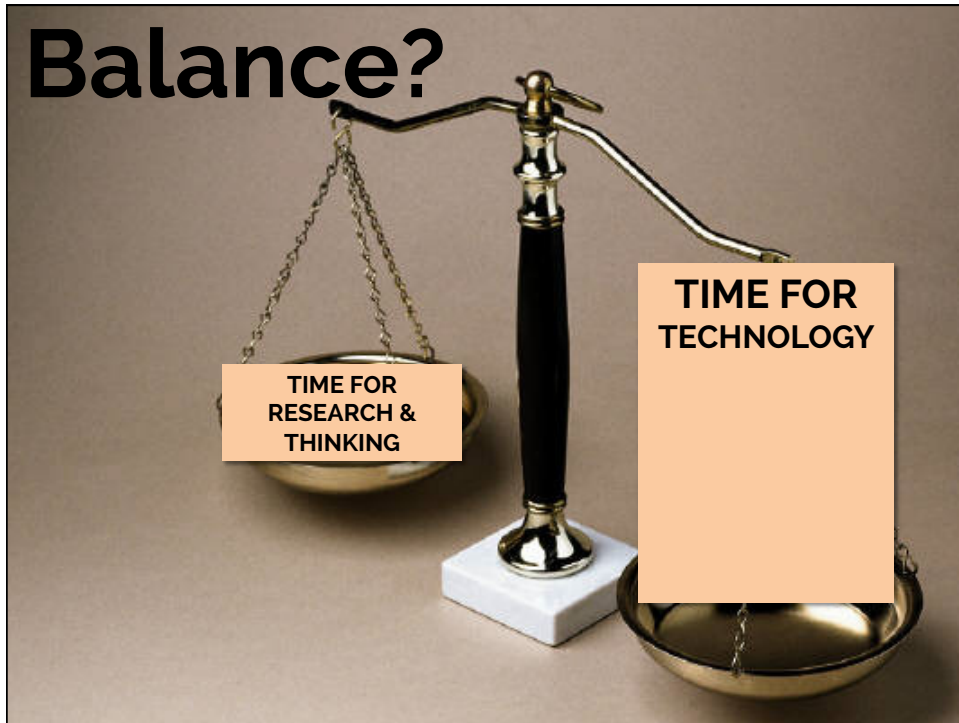
If I had turned in this assignment as a paper-and-pencil product, would you have been proud of me?



Is this **creative, innovative** work for **global success**?

Or, ummm, something else?

"Lady Blogger with Her Maid, after Vermeer", by Mike Licht on Flickr. CC-BY. <http://flickr.com/photos/notionscapital/525333346/>



* Bernajean Porter;
** Joanne Yatvin

Where's the Beef?*

How Do We Know ~~Rigor~~ When We See It?

*Vigor***

Norms Matter.



"Harrison Roses" by Susan Noakes McCord, around 1860.
From the collection of The Henry Ford.
http://www.thehenryford.org/exhibits/quiltinggenius/quilts/73_120_1.htm



Quilt for Bobby Unser by "Racing's Quilt Lady" Jeanette Holder.
From the collection of The Henry Ford.
<http://www.thehenryford.org/exhibits/pic/2010/may/quilt.asp>

Rigor means
exciting challenge,
not rigor mortis!
Insert VIGOR if you
prefer

Rigorous
Learning with
Technology

(with thanks to Roberta Sibley, Laurie Olmsted, Jeff Stanzler, and Raya Samet for contributing their feedback!)

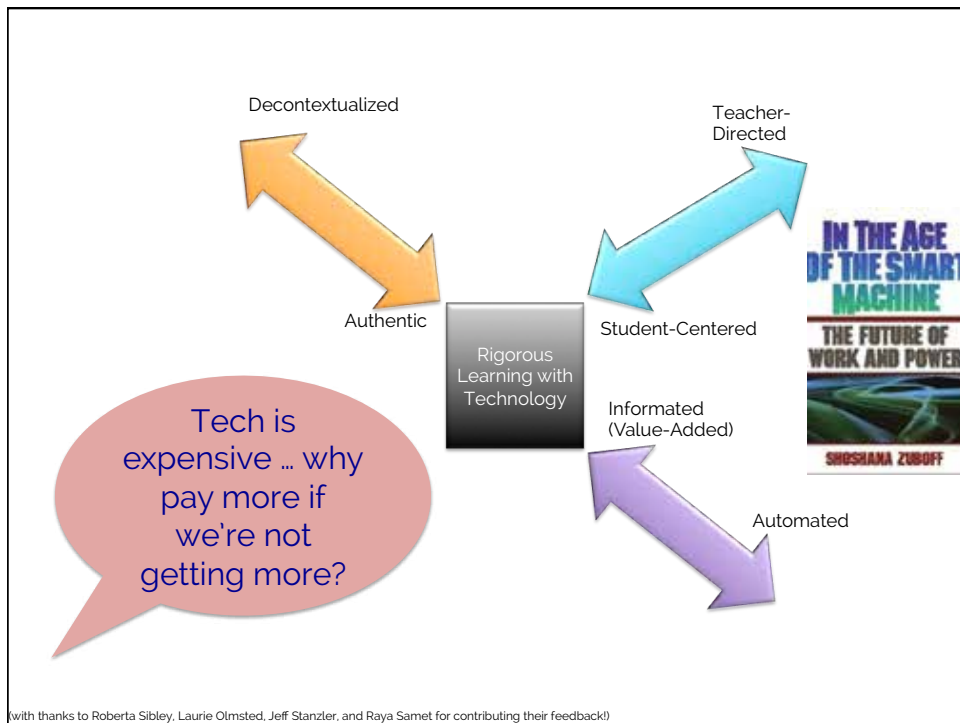
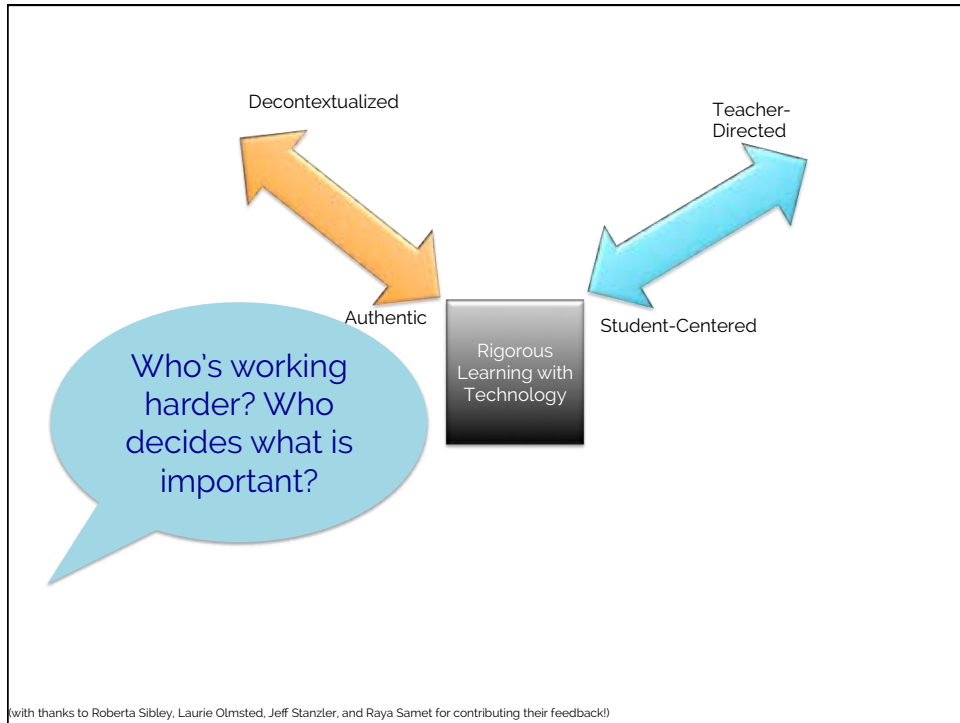
A diagram illustrating the concept of informatics. It features a person icon on the left, followed by a plus sign, a computer monitor and keyboard icon, a greater-than sign, and another person icon with an asterisk to its upper right. Below this sequence is a dark grey rectangular box with the text "Rigorous Learning with Technology" in white.

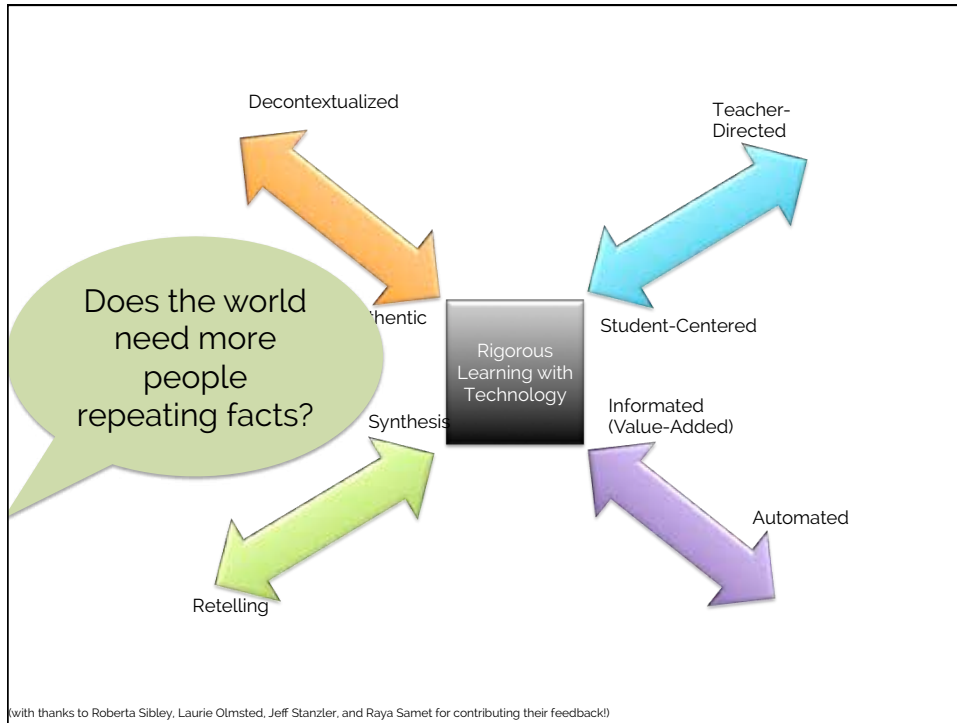
* Charles Friedman, definition of Informatics

"Man" by Michael McMillan and "Computer" by Alyssa Mahlberg from thenounproject.com collection.
Used under a Creative Commons CC-BY 3.0 license.
(with thanks to Roberta Sibley, Laurie Olmsted, Jeff Stanzler, and Raya Samet for contributing their feedback!)

A diagram illustrating the relationship between decontextualized and authentic learning. A double-headed orange arrow connects the word "Decontextualized" at the top to the word "Authentic" at the bottom. To the right of "Authentic" is a dark grey rectangular box with the text "Rigorous Learning with Technology" in white. To the left of this box is a blue speech bubble containing the text: "What's in it for me? How does this apply to me? Why does this matter to me?"

(with thanks to Roberta Sibley, Laurie Olmsted, Jeff Stanzler, and Raya Samet for contributing their feedback!)





By Liz Martin Kubit

Engage, Enhance, and Extend Learning!

Find out what these terms really mean when you integrate technology into your lessons.

Educators often say that technology is itself a goal, a goal to be pursued or added on, and that it should engage, enhance, or extend learning in ways that traditional tools do not. So we set out to define these terms, and they were so confusing, especially for teachers and novice teachers, that we decided to write this book. We're committed to an ongoing conversation about technology integration in our classrooms. We asked a group of our middle school teachers to create technology-enhanced performance assessments for eighth graders who had been involved in book clubs. We told the students that the technology was "engage, enhance, or extend" the learning in some profound way that traditional strategies could not.

After the performance assessments were handed in, we found the students' reactions to be quite interesting. Some said that the technology was "engage, enhance, or extend" the learning in some profound way that traditional strategies could not. Others said that the technology was "engage, enhance, or extend" the learning in some profound way that traditional strategies could not.

Engage: The student is using technology to develop understanding of learning goals that could not have been accomplished without the technology.

Enhance: The technology brings learning to a level that could not have been accomplished without the technology.

Extend: The technology brings learning to a level that could not have been accomplished without the technology.

DEFINITIONS

Engage the technology:

- Allow students to learn at their own pace and in their own way.
- Allow students to learn at their own pace and in their own way.
- Allow students to learn at their own pace and in their own way.

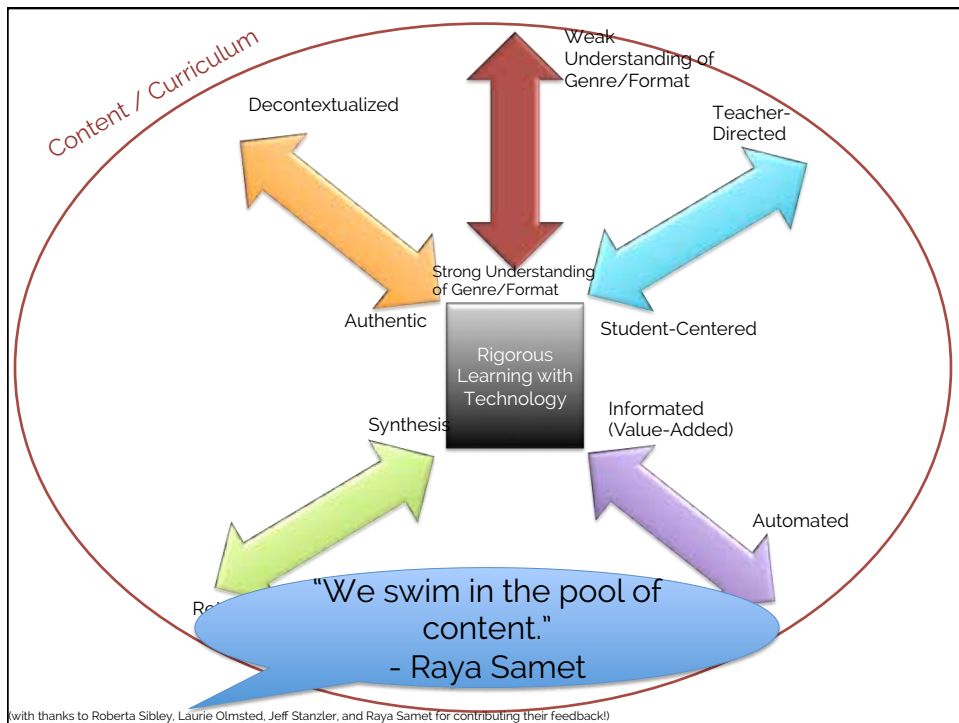
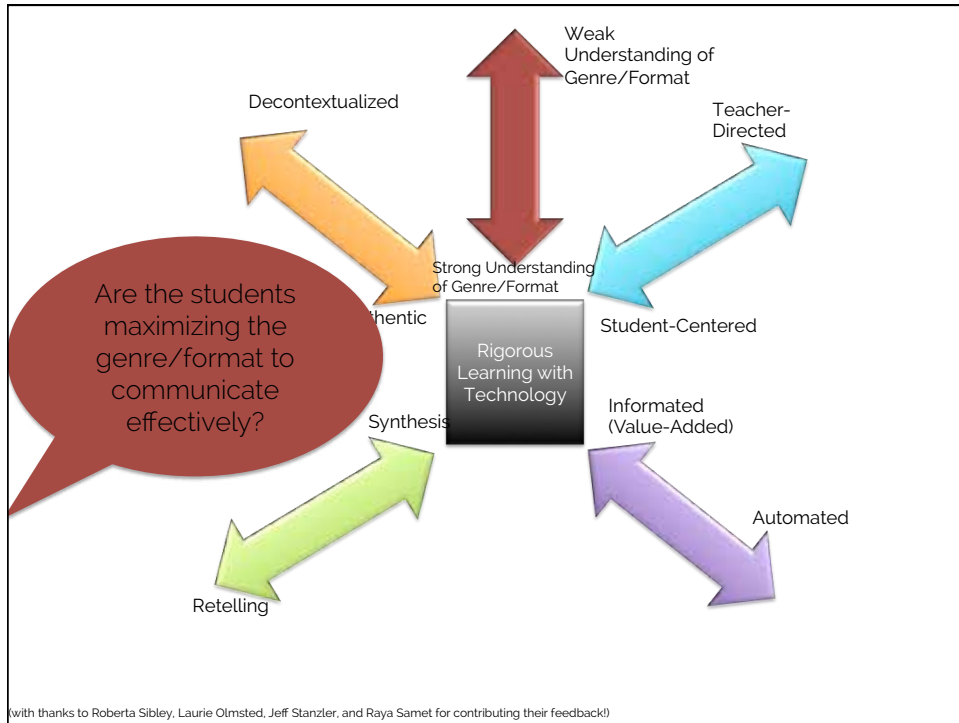
Enhance the technology:

- Allow students to learn at their own pace and in their own way.
- Allow students to learn at their own pace and in their own way.
- Allow students to learn at their own pace and in their own way.

Extend the technology:

- Allow students to learn at their own pace and in their own way.
- Allow students to learn at their own pace and in their own way.
- Allow students to learn at their own pace and in their own way.

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Portrait of Laura Battiferra With Her iPad after Agnolo Bronzino by Mike Licht on Flickr CC-BY
<http://flickr.com/photos/notionscapital/5268001834/>

Silent Partners

- Creativity
- Motivation
- Enthusiasm
- Engagement
- "Hands on keyboards"

Creativity
is intelligence
having fun
-Albert Einstein

<http://www.wileyvalentine.com/blog/wp-content/uploads/2013/10/creativityisintelligence.jpg>



Hamlet
video essay

[http://bit.ly/
hPn588](http://bit.ly/hPn588)

<http://bit.ly/hPn588>



Glogster
me, baby!

[http://bit.ly/
watsons1963](http://bit.ly/watsons1963)

<http://bit.ly/watsons1963>



<http://bit.ly/watsons1963>

CLICK
HERE!!!!

The bombing
happened at
Sunday, 15th
September,
1963. At the
16th Baptist
Church.

Check it
out!!!!!!

Addie May Collins,
Carole Roberston
[sic], Denise Mcnair,
and Cynthia Wesley
had all died the day
of the bombing.

The explosion
blew a hole in the
church's rear wall,
destroyed the
back steps, and
left intact only the
frames of all but
one stained glass
window.

<http://bit.ly/watsons1963>

CLICK HERE!!!!


The bombing happened at Sunday, 15th September, 1963. At the 16th Baptist Church.

Check it out!!!!!!!

Addie May Collins, Carole Roberston [sic], Denise Mcnair, and Cynthia Wesley had all died the day of the bombing.

The explosion blew a hole in the church's rear wall, destroyed the back steps, and left intact only the frames of all but one stained glass window.

Copied verbatim from Timelines.com



Fred's U.S. History students take turns leaving a weekly blog post in which they articulate a comparison between something in current events and something the class has studied in class to date. The other students, using a protocol articulated by Fred, comment on the poster's argument.



Wikis

When students in chemistry class are in the early stages of understanding unit concepts, they engage in identical experiments in small groups. (They later engage in original inquiry at the end of the term.)

After they complete the experiment, they go to the class wiki, where Maria has already set up a table with a row where each group can report its data. By pooling data onto a single table, students have a larger data set from which to draw conclusions and see anomalies.



How's
our
time??

*Charles Dickens, Blogger, after artist William Howell Firth by Steve Firth on Flickr. CC BY <http://flickr.com/photos/meliorcapital/682220050/>

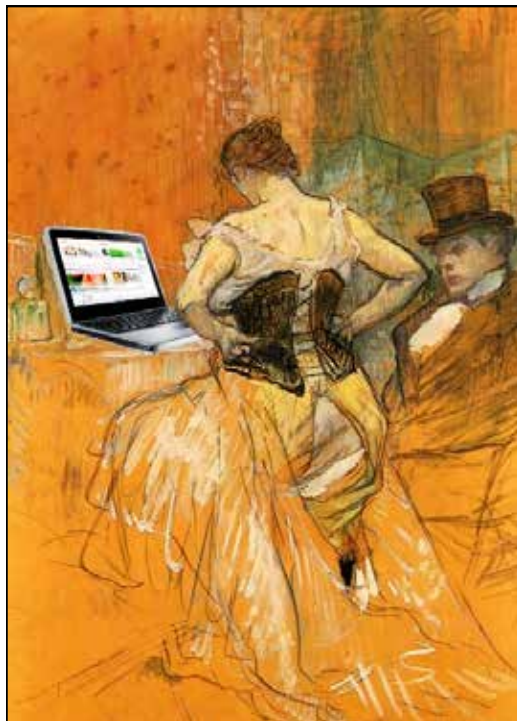


With your group, choose one of the sample projects you saw and discuss

- how you could tweak it to deepen the level of cognition, problem-solving, decision-making, or critical thinking

or

- how you could build further discussions around the artifact so as to deepen the overall experience.



Ed Tech Manifesto

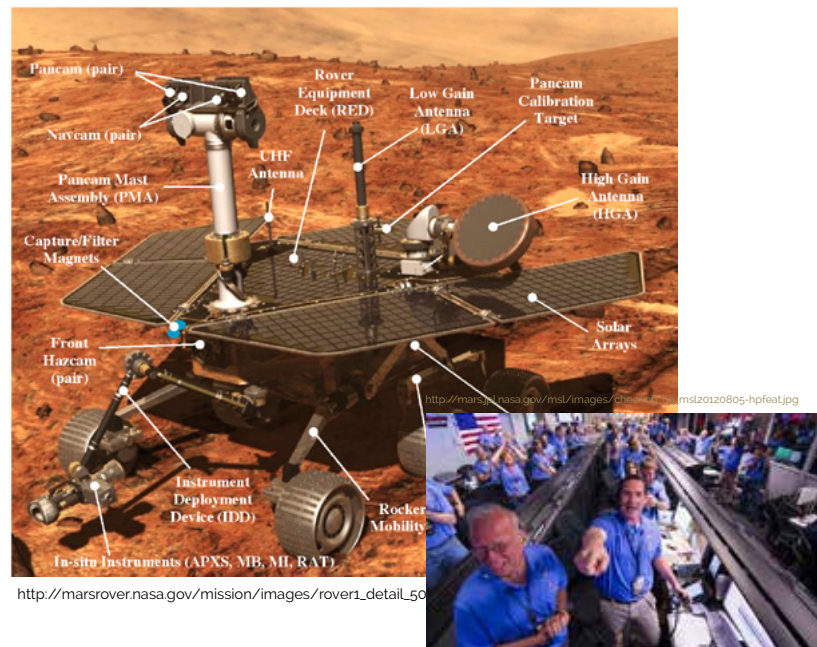
Finish one of these sentences:

I believe in using technology that _____.

When using educational technology, I will maximize _____ and minimize _____.

(Or create your own!)

Aren't we really trying to get our students to be able to ...



http://news.cnet.com/8301-11386_3-57488731-76/google-self-driving-car-300000-miles-and-counting/

CNET News Cutting Edge

Google self-driving car 300,000 miles -- and counting

Company registers progress but cautions of "a long road ahead" (pun intended), especially when navigating snow-covered roadways and interpreting temporary construction signals.

by Charles Cooper | August 7, 2012 4:07 PM PDT

[Follow](#)



(Credit: Google)

Google screws around with a lot of far out, even cockamamie projects -- well, because it can and it's fun. Two good reasons that few can fault. And it's also a good way to push the proverbial tech envelope. So it is that Google's update about the company's [self-driving car project](#) suggests this is turning into something more than Sergey & Larry's homebrew experiment.

Our vehicles, of which about a dozen are on the road at any given time, have now completed more than 300,000 miles of testing. They've covered a wide range of traffic conditions, and there hasn't been a single accident under computer control.



http://cdn.ientry.com/sites/webprnews/pictures/magicarms_616.jpg



**"Monday"
Morning
Takeaway?**

<http://todaysmeet.com/aims>

[Riced out](http://www.flickr.com/photos/65694461@N00/350982994)
<http://www.flickr.com/photos/65694461@N00/350982994>

Questions?
font@umich.edu
@activelearning
<http://bit.ly/fontblog>

