technologies that are changing teaching and learning

May 28 2015

rich halverson uw-madison
Paradox
Connected learning is a model of learning that holds out the possibility of reimagining the experience of education in the information age. It draws on the power of today’s technology to fuse young people’s interests, friendships, and academic achievement through experiences laced with hands-on production, shared purpose, and open networks.

Production Centered
Connected learning prizes the learning that comes from actively producing, creating, experimenting, and designing, because it promotes skills and dispositions for lifelong learning, and for making meaningful contributions to today’s rapidly changing work and social conditions.

Interests
Interests foster the drive to gain knowledge and expertise. Research has repeatedly shown that when the topic is personally interesting and relevant, learners achieve much higher-order learning outcomes. Connected learning views interests and passions that are developed in a social context as essential elements.

Shared Purpose
Today’s social media and web-based communities provide unprecedented opportunities for caring adults, teachers, parents, learners, and their peers to share interests and contribute to a common purpose. The potential of cross-generational learning and connection unfolds when centered on common goals.

Peer Culture
Connected learning thrives in a socially meaningful and knowledge-rich ecology of ongoing participation, self-expression, and recognition. In their everyday exchanges with peers and friends, young people fluidly contribute, share, and give feedback. Powered with possibilities made available by today’s social media, this peer culture can produce learning that’s engaging and powerful.

Openly Networked
Connected learning environments link learning in school, home, and community, because learners achieve best when their learning is reinforced and supported in multiple settings. Online platforms can make learning resources abundant, accessible, and visible across all learner settings.

Academic
Connected learning recognizes the importance of academic success for intellectual growth and as an avenue towards economic and political opportunity. When academic studies and institutions draw from and connect to young people’s peer culture, communities, and interest-driven pursuits, learners flourish and realize their true potential.

Active Relevant Real-World Effective Hands-On
teaching and learning in schools never seems to change
Technologies are transforming teaching and learning.

Paradox

Teaching and learning in schools never change.

halverson@education.wisc.edu
Garett entered group chat.

Garett: hi
me: hey
Nate entered group chat.
hey nate 😅
Nate: nice
me: how's that look?
Nate: pretty sweet
me: I see both of your profiles up
me: yes two profiles for me, and one for you
Nate: I can click on either of them to go into a private chat
me: this seems pretty intuitive to me
too bad you can't use the real google talk client
Nate is typing...

---

“Philosophy is written in that great book which ever lies before our eyes — I mean the universe — but we cannot understand it if we do not first learn the language and grasp the symbols, in which it is written. This book is written in the mathematical language... without which one wanders in vain through a dark labyrinth.”

---

The Beauty of Algebra

Khan Academy · 1,792,856 views

Like · 1273 · Share · Add to

1.083,104

---

halverson@education.wisc.edu
designing her own learning environment
Two Models of Teaching and Learning

halverson@education.wisc.edu
teaching

schooling

learning
learners

affinity spaces

halverson@education.wisc.edu
learners

affinity spaces

discourses

halverson@education.wisc.edu
participatory cultures
participatory cultures

understanding learning in the wild

halverson@education.wisc.edu
Confronting the Challenges of Participatory Culture
Media Education for the 21st Century

Henry Jenkins
with Ravi Purushotma, Margaret Weigel, Katie Clinton,
and Alice J. Robinson

MacArthur
The John D. and Catherine T. MacArthur Foundation
Participatory cultures

Authentic audience

Jenkins, et. al. 2006

MacArthur Foundation Digital Media & Learning Project
Participatory cultures

Access to mentoring
Authentic audience

MacArthur Foundation Digital Media & Learning Project

Jenkins, et. al. 2006
Open questions
Access to mentoring
Authentic audience

Participatory cultures
Jenkins, et. al. 2006

MacArthur Foundation Digital Media & Learning Project
Quality contributions matter

Open questions

Access to mentoring

Authentic audience

Participatory cultures

Jenkins, et. al. 2006

MacArthur Foundation Digital Media & Learning Project
Scaffolded participation
Quality contributions matter
Open questions
Access to mentoring
Authentic audience

Participatory cultures
Jenkins, et. al. 2006

MacArthur Foundation Digital Media & Learning Project
Pinterest

user-generated professional learning communities

halverson@education.wisc.edu
48.7 million users each month

http://www.edutopia.org/blog/teachers-stuck-on-pinterest-kendra-jarvis

halverson@education.wisc.edu
48.7 million users each month

500,000 education pins daily

http://www.edutopia.org/blog/teachers-stuck-on-pinterest-kendra-jarvis
reinventing professional networks
Citizen Science

halverson@education.wisc.edu
Citizen Science
crowdsourcing science
halverson@education.wisc.edu
SETI@home Multi-Beam

Computing Fast Fourier Transform
Doppler drift rate \(-1.5306 \text{ Hz/sec}\)
Best Gaussian: power 2.96, fit 1.305, score \(-2.317\)
Resolution 0.149 Hz

Data info
From: 10 \text{ hr 11}' 6'' \text{ RA}, +19 \text{ deg 20}' 20'' \text{ Dec}
Recorded on: Sun Feb 17, 05:05:00 2008
Recorded at: Arecibo 1.4GHz Array, Beam 4, Pol 0
Base frequency: 1.420136719 GHz

User info
Overall 2.3611% done
CPU time: 5 min 28.11 sec

Name: Softonic
Team: 
Total credit: 0.00

SETI@home
The Search for Extraterrestrial Intelligence
Point Beach State Forest

Point Beach State Forest is a 2,903-acre (1,175 ha) Wisconsin state forest near Two Rivers, Wisconsin in Manitowoc County. The forest is located along 6 miles (9.7 km) of the Lake Michigan coast. Point Beach State Forest was established in 1938.[1] The Point Beach Ridges, a National Natural Landmark, are located within the forest.[2]

Images [edit]

Point Beach Ridges

References [edit]


External links [edit]

- Point Beach State Forest website
The Science Behind Foldit

Foldit is a revolutionary new computer game enabling you to contribute to important scientific research. This page describes the science behind Foldit and how your playing can help.

Page Contents:
- What is protein folding?
- Why is this game important?
- Foldit Scientific Publications
- News Articles about Foldit
- News Articles about Rosetta
- Rosetta@Home Screensaver
- Community Rules
- Let's Foldit Podcast
- Instructions for Educators
- Terms of Service and Consent
- Credits

What is protein folding?

What is a protein? Proteins are the workhorses in every cell of every living thing. Your body is made up of trillions of cells, of all different kinds: muscle cells, brain cells, blood cells, and more. Inside those cells, proteins are allowing your body to do what it does: break down food to power your muscles, send signals through your brain that control the body, and transport nutrients through your blood. Proteins come in thousands of different varieties, but they all have a lot in common. For instance, they're made of the same...
SEANET

The Seabird Ecological Assessment Network (SEANET) is a citizen science program that brings together interdisciplinary researchers and members of the public in a long-term collaborative effort to identify and mitigate threats to marine birds.

SEANET was initiated by the Tufts Center for Conservation Medicine, in collaboration with the Lloyd Center for Environmental Studies in Massachusetts, during Autumn 2002. Since this time, the project has expanded to beaches throughout New England, New York and New Jersey and more recently, to the southeastern US, with beaches in South Carolina, Georgia and Florida. For the latest SEANET news and updates, visit the SEANET Blog.

SEANET volunteers conduct year-round beached bird surveys in order to identify and record information about bird mortality along the east coast of the United States. Data collected by hundreds of SEANET volunteers are used to examine the spatial pattern of bird carcass deposition and how it varies across time.

These surveys provide baseline information about bird mortality and can help to detect mass mortality events due to oil spills, algal toxins, and disease outbreaks. Marine birds can serve as indicators of ecosystem and human health; monitoring the threats they face and their mortality patterns can teach us about the health of the ocean.
Start Playing

Mystery #243

change cell


Welcome to EyeWire
Citizen Science
Real participation in authentic science inquiry
Citizen Science

Real participation in authentic science inquiry

Hub and spoke model: distributed networks of data collection and analysis
Gaming
VIRULENT
Dr. Yeong:
Remember to keep an eye on the Health Meter.
[Guild] [Alinna]: so we don't get blamed for fucking up
[Guild] [Alinna]: haha
[Guild] [Eldith]: LOL
[Guild] [Eldith]: n1.
[Guild] [Alinna]: and plus i got tests this week
[Guild] [Alinna]: so im not sure
[Guild] [Alinna]: [Exclam]: we want him to go for tank after tank and never rush the healer/ranged grous
leadership
leadership

theory-crafting

halverson@education.wisc.edu
leadership
theory-crafting
cheating
Decimal Island
Published by MisterA • 10 months ago • 0
This map is a math adventure. Students will spawn on an isolated island where they will quickly be tasked with finding the three hidden quests on the island. Each question will have to do with addition and subtraction of decimals.

Math > Numeracy and Operations - Decimals (Addition and Subtraction)

Coordinate Hunt
Published by MisterA • 9 months ago • 0
In this map students will use coordinate grid skills to find a vast amount of items hidden on the course. They will document the item and coordinates they were found on in a digital journal. Ready...set...go!

Math > Measurement and Data - Coordinate Grids

Division Farms
Published by MisterA • 9 months ago • 0
Welcome to the Momilani Farms! I hope you brought your boots and gloves, because we are going to put you to work!

Ages 7-12
maker spaces
the new third space

maker spaces
What is open source?

The term "open source" refers to something that can be modified because its design is publicly accessible.

While it originated in the context of computer software development, today the term "open source" designates a set of values—what we call the open source way. In general, open source projects, products, or initiatives are those that embrace and celebrate open exchange, collaborative participation, rapid prototyping, transparency, meritocracy, and community development.

What is open source software?

Open source software is software whose source code is available for modification or enhancement by anyone.

"Source code" is the part of software that most computer users don't ever see; it's the code computer programmers can use to change how a piece of software works. Programmers who have access to a computer program's source code can improve that program by adding features to it or fixing parts that don't always work correctly.

What's the difference between open source software and other types of software?

...
WHAT'S HOT: Halloween Pirate Shipwreck Yard Display

By: Andrew Salomone

Well, this incredible Halloween yard display, featuring a full-sized pirate ghost ship that seems to have collided with a house...
big data

fantasy sports

halverson@education.wisc.edu
See How Chicago is Solving its Dropout Crisis by Focusing on Ninth Grade

2011 - 2014 increase in graduation rates largely attributable to focus on Freshman On-Track
On-Track Focuses Attention on What Matters: Grades and Attendance in 9th Grade

High schools that experienced sustained success approached On-Track with four underlying principles.

- **Student Data:**
  District provides data on students most at risk of going off track, to the right people within schools, in a timely way.

- **Leadership:**
  Principal prioritizes on-track and ensures buy-in among teachers, counselors and larger school community.

- **Collaboration:**
  9th grade teachers collaborate and share strategies within a school, and across schools.

- **Personalization:**
  Interventions are tailored to each child’s specific needs based on deep knowledge of their individual course performance.

The Network for College Success Coaches Schools to Get On-Track Results

Monitoring and Support Keeps 9th Graders on Track to Graduation

NCS Supports High Schools to Implement On-Track Strategies

Learn Why 9th Grade is a Key Leverage Point for Graduation
When To Pay Attention To The Stock Market (And When To Ignore It)

10:00 AM  By BEN CASSELMAN

Republicans have a **62.2%** chance of winning a majority.

Democrats have a **37.8%** chance of keeping the majority.
COGNITIVE SURPLUS
CREATIVITY AND GENEROSITY
IN A CONNECTED AGE

CLAY SHIRKY
# Week 6 - Final Results

<table>
<thead>
<tr>
<th>Team</th>
<th>Score 1</th>
<th>Score 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rivieras</td>
<td>102.36</td>
<td>112.90</td>
</tr>
<tr>
<td>Wide Receivers</td>
<td>109.56</td>
<td>107.20</td>
</tr>
<tr>
<td>GUAPPOS</td>
<td>87.72</td>
<td>89.02</td>
</tr>
<tr>
<td>BearJews</td>
<td>97.90</td>
<td>84.64</td>
</tr>
<tr>
<td>Bernie's Babies</td>
<td>118.22</td>
<td>80.92</td>
</tr>
<tr>
<td>Safety Dancers</td>
<td>152.84</td>
<td>89.88</td>
</tr>
<tr>
<td>Slobbernocker Pigs</td>
<td>76.64</td>
<td>119.04</td>
</tr>
<tr>
<td>The JV Squad</td>
<td>112.90</td>
<td></td>
</tr>
<tr>
<td>Norwood's Avengers</td>
<td>107.20</td>
<td></td>
</tr>
<tr>
<td>Hormonal Crunch</td>
<td>89.02</td>
<td></td>
</tr>
<tr>
<td>gin and jews</td>
<td>84.64</td>
<td></td>
</tr>
<tr>
<td>MOOKS!</td>
<td>80.92</td>
<td></td>
</tr>
<tr>
<td>Children of Da Coach</td>
<td>89.88</td>
<td></td>
</tr>
<tr>
<td>Mighty Mangosteen</td>
<td>119.04</td>
<td></td>
</tr>
</tbody>
</table>

The JV Squad Brings Down Rivieras to Grab Ninth Place

Read Recap
The IEM is an online futures market where contract payoffs are based on real-world events such as political outcomes, companies' earnings per share (EPS), and stock price returns. The market is operated by University of Iowa Henry B. Tippie College of Business faculty as an educational and research project. More...

Who can participate in the IEM?
Are the participants playing with real money?
Can markets predict the future?
Can I get historical data from the IEM?
How do I start trading?
I need more information about the IEM...

2014 U.S. Congressional Election Markets

On Wednesday, December 26, 2012, the IEM opened markets in the 2014 U.S. Congressional elections. The IEM 2014 Congressional Control markets are real-money futures markets where contract payoffs will be determined by the outcomes of the 2014 U.S. Congressional elections.

Prospectuses:
- 2014 Congress
- 2014 House
- 2014 Senate

Federal Reserve Monetary Policy Market

The IEM Federal Reserve Monetary Policy Market B (FedPolicyB) is a real-money futures market. Contract payoffs are determined by monetary policy decisions of the Federal Open Market Committee regarding the federal funds target rate.

Closed Markets

News

View All

October 16, 2014
'My Two Cents in Five Minutes'

October 14, 2014
UI Program Helps Small Businesses Go Global

October 8, 2014
Berg and Mote Honored at Annual Celebration

September 9, 2014
U.S. News Ranks Tippie 22nd Among Public Undergraduate Business Programs

August 20, 2014
Tippie Welcomes New Students

August 8, 2014
In the USA, Predictive Market Pioneer Is More Accurate Than Surveys

August 8, 2014
Researchers Studying Market Formula That Predicts Election Results
youth media arts organizations

halverson@education.wisc.edu
new literacies in action

youth media arts organizations

halverson@education.wisc.edu
reading text

phonology - speech sounds
orthography - spelling
syntax - grammar
morphology - word formation
semantics - meaning

learning to read
phonological awareness
phonics - decoding
syntax
vocabulary

fluency and comprehension

Mastering each of these sub skills is necessary for students to become proficient readers.

Report of the National Reading Panel, 2000

halverson@education.wisc.edu
is this how anyone becomes literate?
If we see literacy as “simply reading and writing”
—whether in the sense of encoding and decoding print, as a tool, a set of
skills, or a technology, or as some kind of psychological process—

we cannot make sense of our literacy experience.
discourse
meaning-making
meaning

production

contestation
distribution

refinement
exchange

halverson@education.wisc.edu

Knobel & Lankshear, 2006
slip of the tongue
poem by adriel luis (youth speaks, san francisco)
film by karen lum (youth sounds, oakland)
Creative Studio:
Platform for Reflection, Expression, and Innovation

view featured media

Producing top level media is what we do. Providing education and career opportunities for diverse youth is how we do it.

Announcements:
10.07.14 Burning Down the House Book Party with Nell Bernstein
09.23.14 Youth Radio Day @ Whole Foods, Thursday, September 25th
09.23.14 Party @ Pican

support our work
sign up for our e-newsletter
contact us
The Future of Technology

http://indiafuturesociety.org
SKYNET
SAC NORAD

Artificial Intelligence Controlled
Network Defense Computer System
The Gray Goo Scenario

1. The first assembler is created to convert organic matter into other materials.

2. The assembler is programmed to create new units identical to itself.

3. Each new unit follows the same programming instruction to consume and multiply.

4. The manufacturing rate becomes exponential producing greater and greater numbers of assemblers.

5. Eventually the assemblers would strip the Earth of all organic matter, leaving only nanomachines behind.
Education

Learners

School

World

halverson@education.wisc.edu
technologies that are changing teaching and learning

halverson@education.wisc.edu