

Web-Enabled Teaching

The “Skinny”

Victor Fitzjarrald

December 7th, 2012

University of Delaware



Who is this guy?

What I do...

- Technology Director
- STEM Director
- Teacher (9 courses 6-12th grade – math, science, STEM)
- Consultant (ISTE)
- Technology Chairman (SIGML)
- Faculty (Colorado College)

What I have done...



Contact Me!



@victorfitzjarrald



@victorfitzjarrald



@mrfitzjarrald



vfitzjarrald

<http://www.victorfitzjarrald.com/delaware>

Questions? Feel free to text me a question at any time and I will check my phone periodically...



719-357-7092

First...

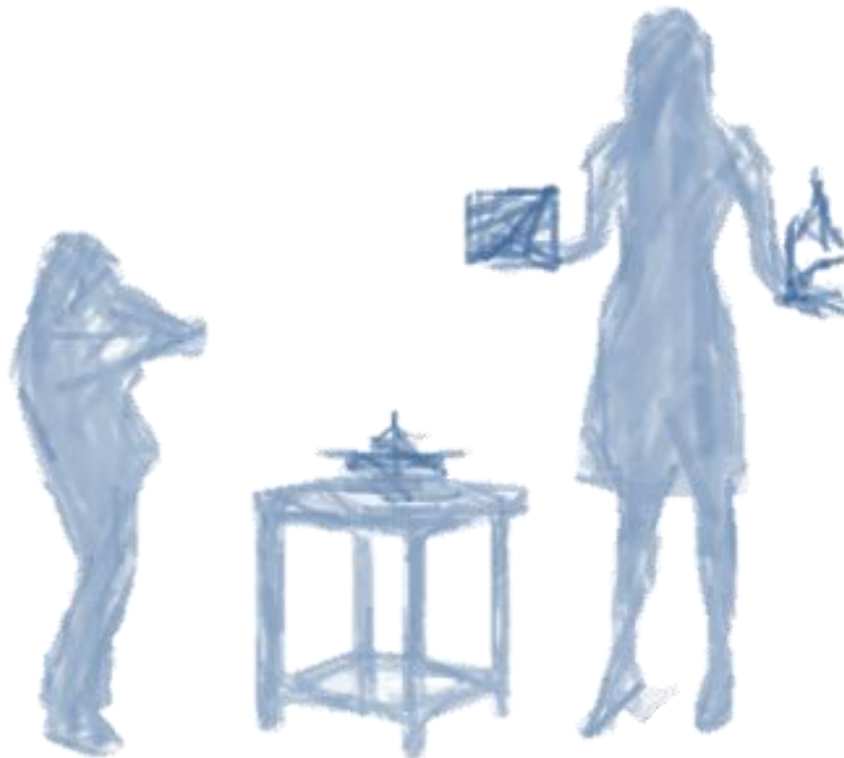
- Think, Pair, Share:
- Take a moment to think about your all time favorite lesson (2 Minutes)
- Share with your partner (3 Minutes)
- Send in your response... “What do these two lessons have in common?”

Lets get started...

1. What are we talking about (~30mins)
 1. Engagement
 2. Change
 3. Rigor
 4. Advancement
 5. What the data says
2. Suggestions (as much time as we have)
 1. How to implement? (~10mins)
 2. What to implement? (demonstrations)

Tech-Based Engagement

Wave of the future? The new
“Khan”? Or just a fad?



**“Any teacher that can be
replaced by a computer
deserves to be.”**

David Thornburg

What is different...



They both make us feel bad!



Is it the students fault if they do not learn from a lecture?
What do you think? 719-357-7092

Lecture

Engagement...



Mentality Check:

- My students are not engaged in this presentation that is amazing, there loss. Students need to pay attention.
- My students are not engaged in the presentation I made, should I present the same way again?

Is it the students fault if they do not learn from a lecture?

What do you think? 719-357-7092

The difference in Ed

- Elementary: Hands-on, small group
- Middle school: Group work with individual consequences
- High School: Transition to lecture...
- Post Secondary: Lecture!

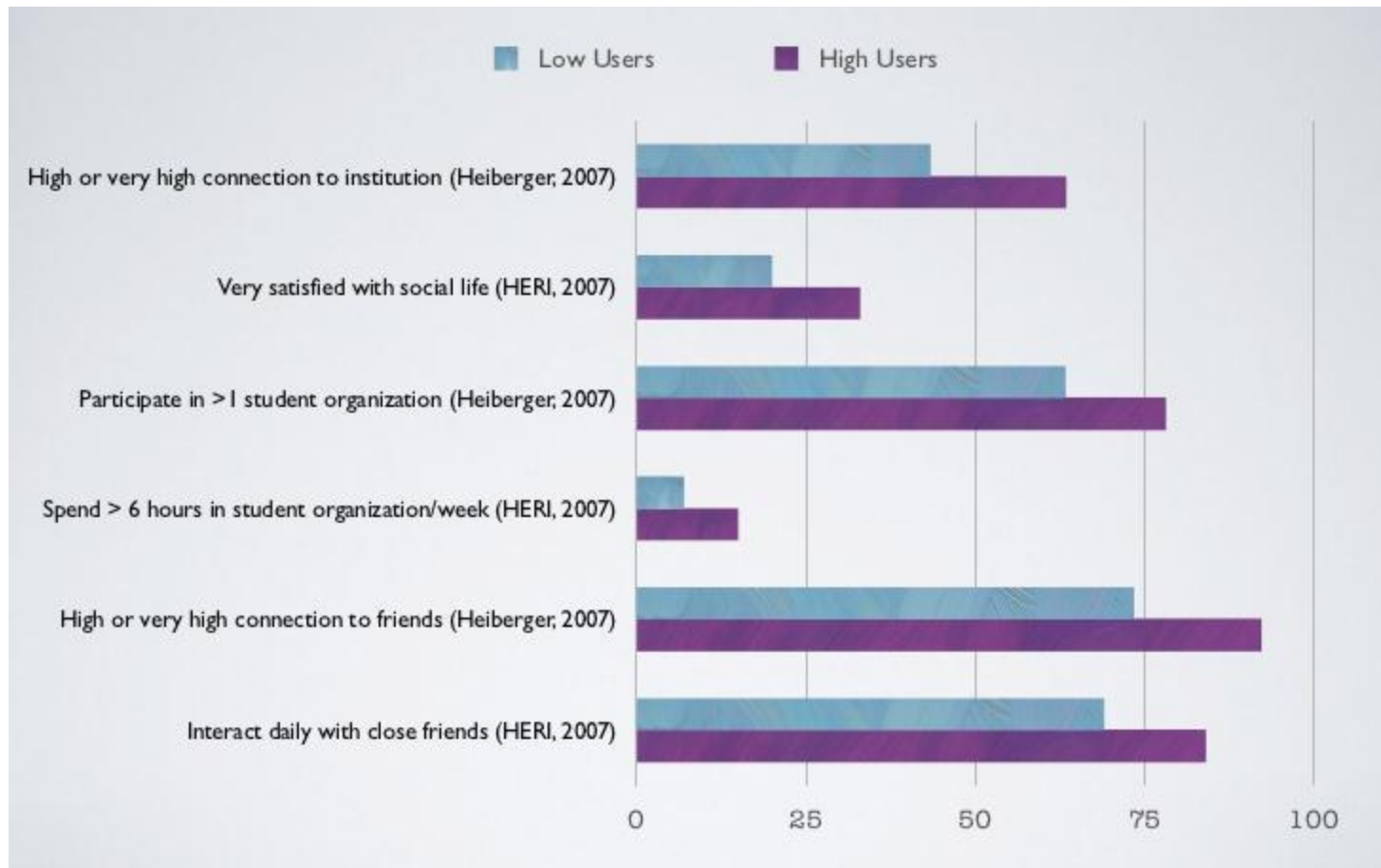


Lectures

- Can a lecture be engaging?
YES!
- Are all lectures created equal?
NO!
- Is powerpoint the only way?
NO!
- Clickers are engaging but are they for everyone?
NO!

Engage or not?

Engage or not?

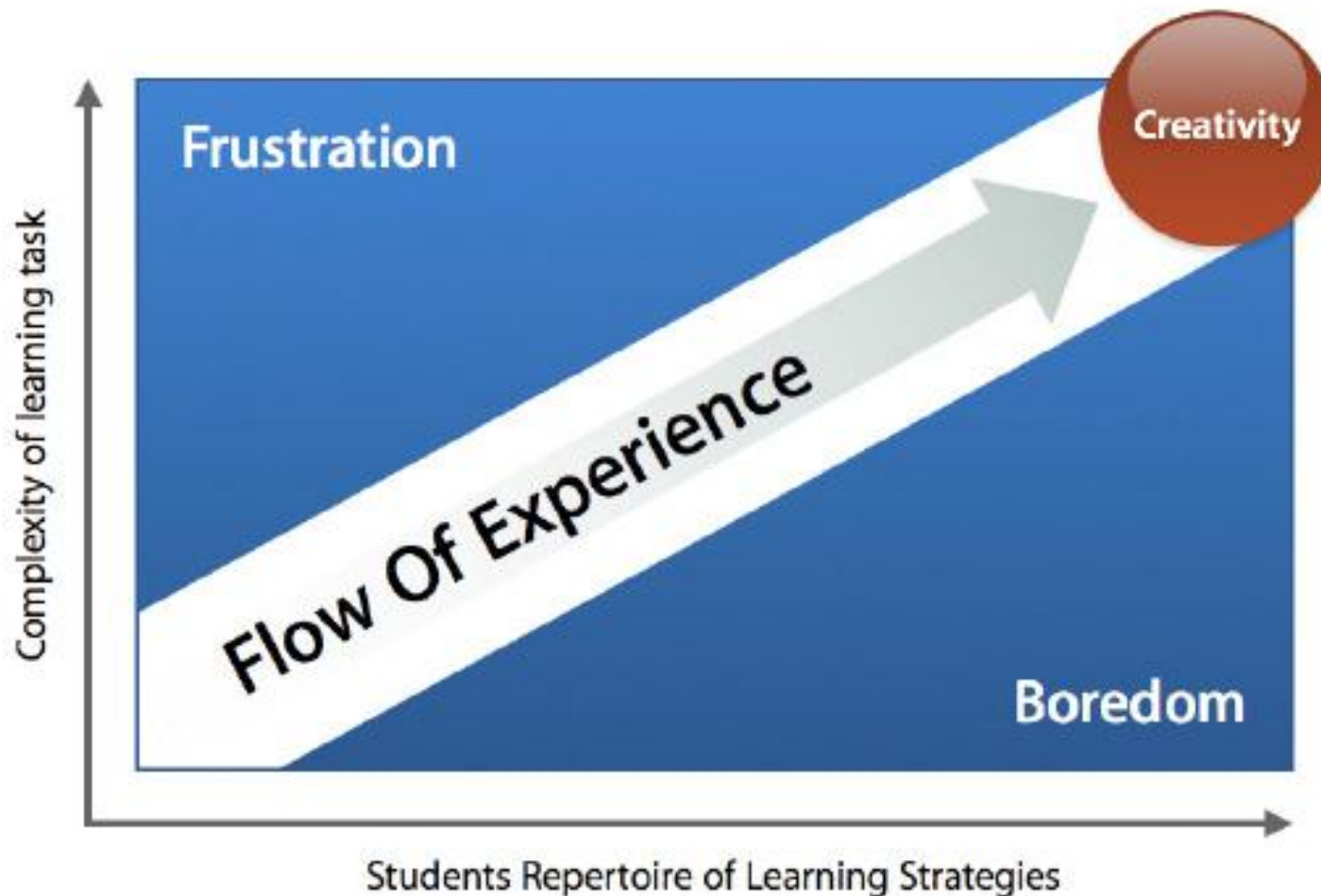


What are we talking about?

1. Student Engagement
2. Student Engagement
3. Student Engagement
4. Increasing Achievement
5. Increasing Relevance
6. Instructional Rigor
7. Differentiation as Instruction

Indicators of Success

What is engagement?



Keep students away from frustration and boredom.

This method of engagement in instruction can be done by multiple technologies and methods.

The Cone of Learning

Gardner (1989) – Not all students learn the same way (Multiple Intelligences)
Bloom – The questions that promote the most learning build upon each other.

sparkinsight.com

The Cone of Learning

After 2 weeks,

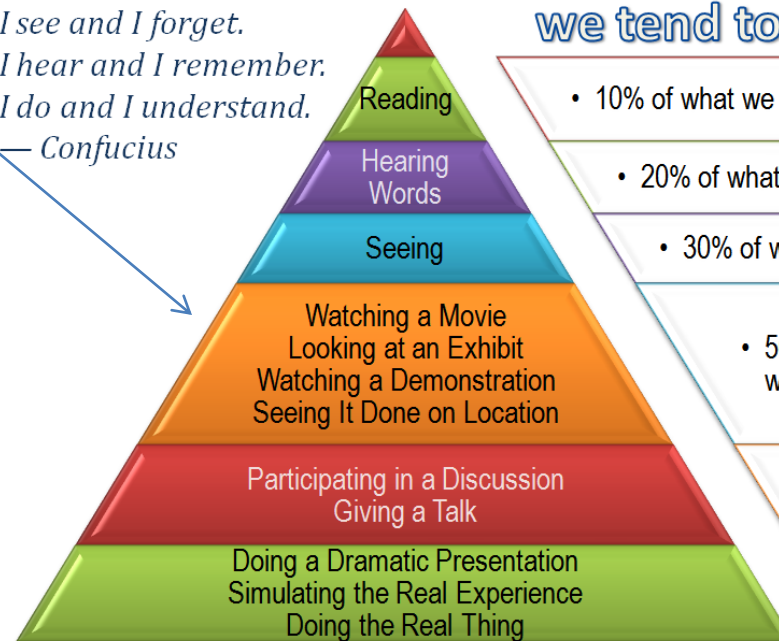
we tend to remember ...

- 10% of what we READ
- 20% of what we HEAR
- 30% of what we SEE
- 50% of what we SEE & HEAR
- 70% of what we SAY
- 90% of what we SAY & DO

P
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*I see and I forget.
I hear and I remember.
I do and I understand.*
— Confucius

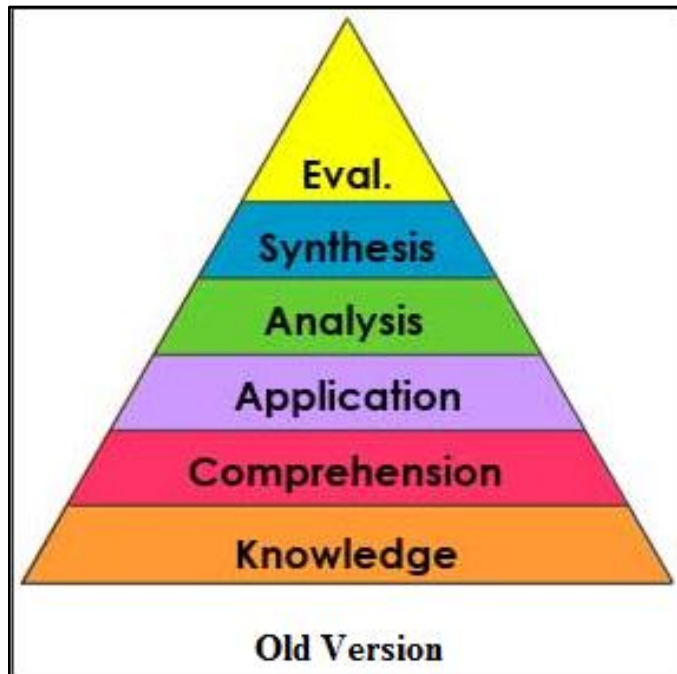


Source: Edgar Dale (1969)

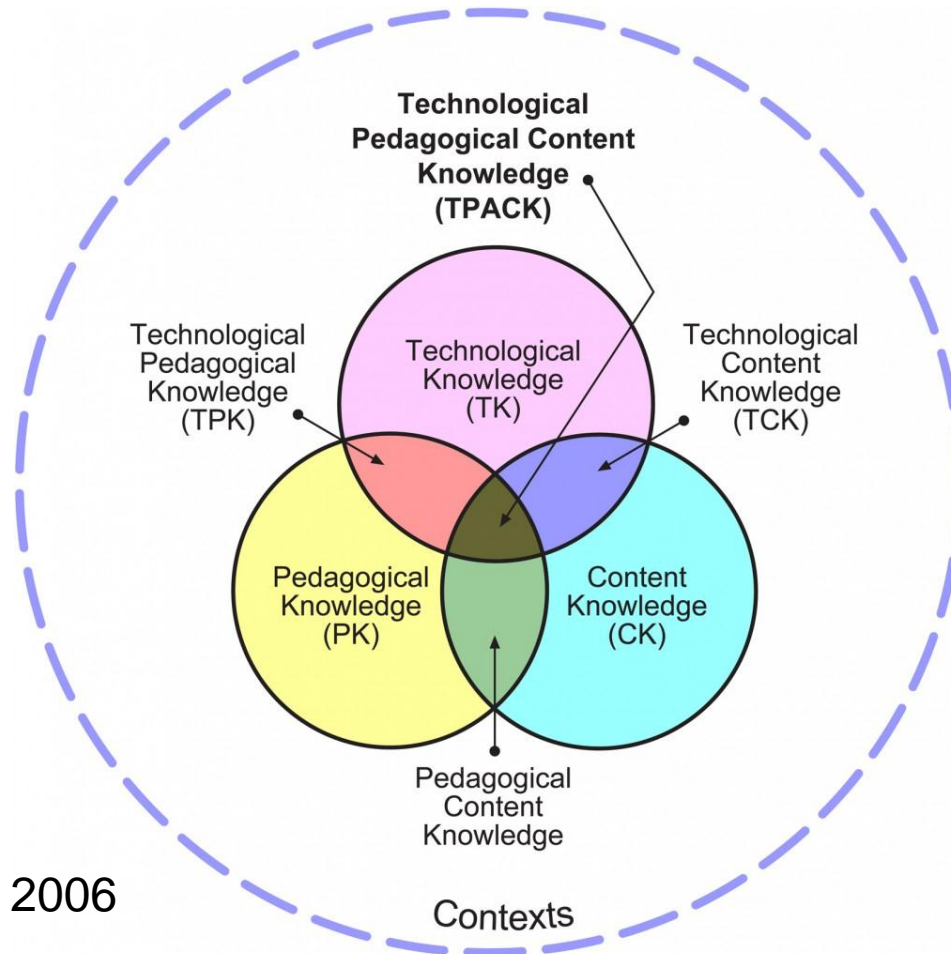
What is a ppt?

By moving into active learning, we can cover more... (higher retention)

Bloom's Revised Taxonomy



TPACK Model



<http://tpack.org>

Mishra & Koehler 2006

Thinkfinity Integration Framework for Educators

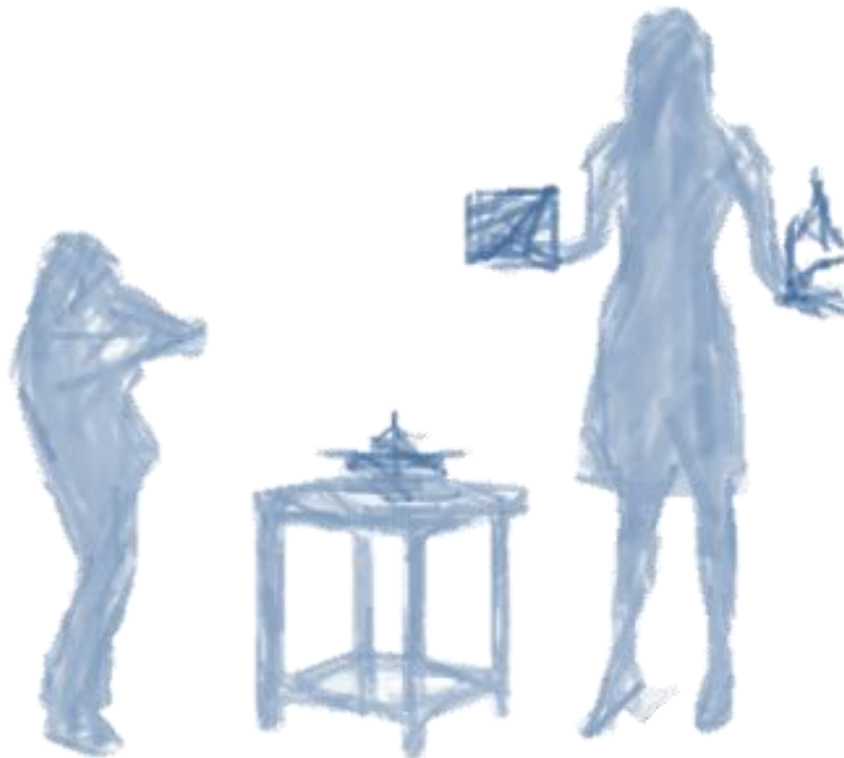
Process for Integration	Outcome	Guiding Questions
<p>I. Motivation and Selection Educator identifies an instructional need, then selects a resource to integrate that is related to the identified need</p>	<p>Appropriate resource identified, based on <i>Instructional Need</i></p>	<p><u>Instructional Need - The underlying purpose driving the selection and use of the resource</u></p> <ul style="list-style-type: none"> • What standards and skills are to be addressed? • What are the needs of the students regarding learning styles, working strategies, and ability levels?
<p>II. Consideration Educator thinks critically about the selected resource and develops a plan for the learning activity using the resource</p>	<p>Well thought-out learning activity using the selected resource, with focus on <i>Integration, Pedagogy and Logistics</i></p>	<p><u>Integration - The purpose and placement of the resource and the associated learning activity</u></p> <ul style="list-style-type: none"> • Within the specific learning activity, where and how will the resource be used? • How does the learning activity fit within the larger lesson or unit plan?
		<p><u>Pedagogy - Teaching strategies and methods</u></p> <ul style="list-style-type: none"> • What teaching strategies will be used in this learning activity? • How will this activity promote students' development of 21st century skills (creativity and innovation, critical thinking and problem solving, communication and collaboration)? • How will this activity promote students' acquisition of core content?
		<p><u>Logistics - Materials, scheduling, etc.</u></p> <ul style="list-style-type: none"> • What classroom configuration will be used during this learning activity? • What other materials does the activity require? • What elements of classroom management need to be considered?

Thinkfinity Integration Framework for Educators

III. Preparation Educator gets materials ready and sets up logistical elements	Availability of materials and arrangement of logistics	<ul style="list-style-type: none">• Has the technology needed for the learning activity been reserved or acquired?• Have all of the resources been prepared and set up?
IV. Implementation and Observation Educator implements the learning activity and monitors student behaviors and outcomes	Learning activity execution based on prior planning and immediate student response	<ul style="list-style-type: none">• Is the learning activity going as I had envisioned? If not, is that okay?• How are students responding to the learning activity?• Do I need to adjust the activity based on student response?
V. Reflection Educator reflects on the learning activity, recognizes areas of success and considers ideas for improvement	Meaningful assessment of learning activity	<ul style="list-style-type: none">• How successful was the learning activity overall?• What expected and unexpected student outcomes occurred?• What prior planning helped the success of the learning activity?• What additional considerations would help this learning activity be even more successful?

Technology Change

What is the “Skinny”



The “Skinny”

The skinny is finding the smallest number of High-Leverage, easy-to-understand actions that unleash stunningly powerful consequences (Fullan 2009)

For Technology and Teaching:
Focus on impact not on a number!

Technology “Skinny” - Data

Connected college students

Frequent US College
% of resp

Percentage of American adults in each group who use the internet, have broadband at home, and connect wirelessly

2009



2010



Daily

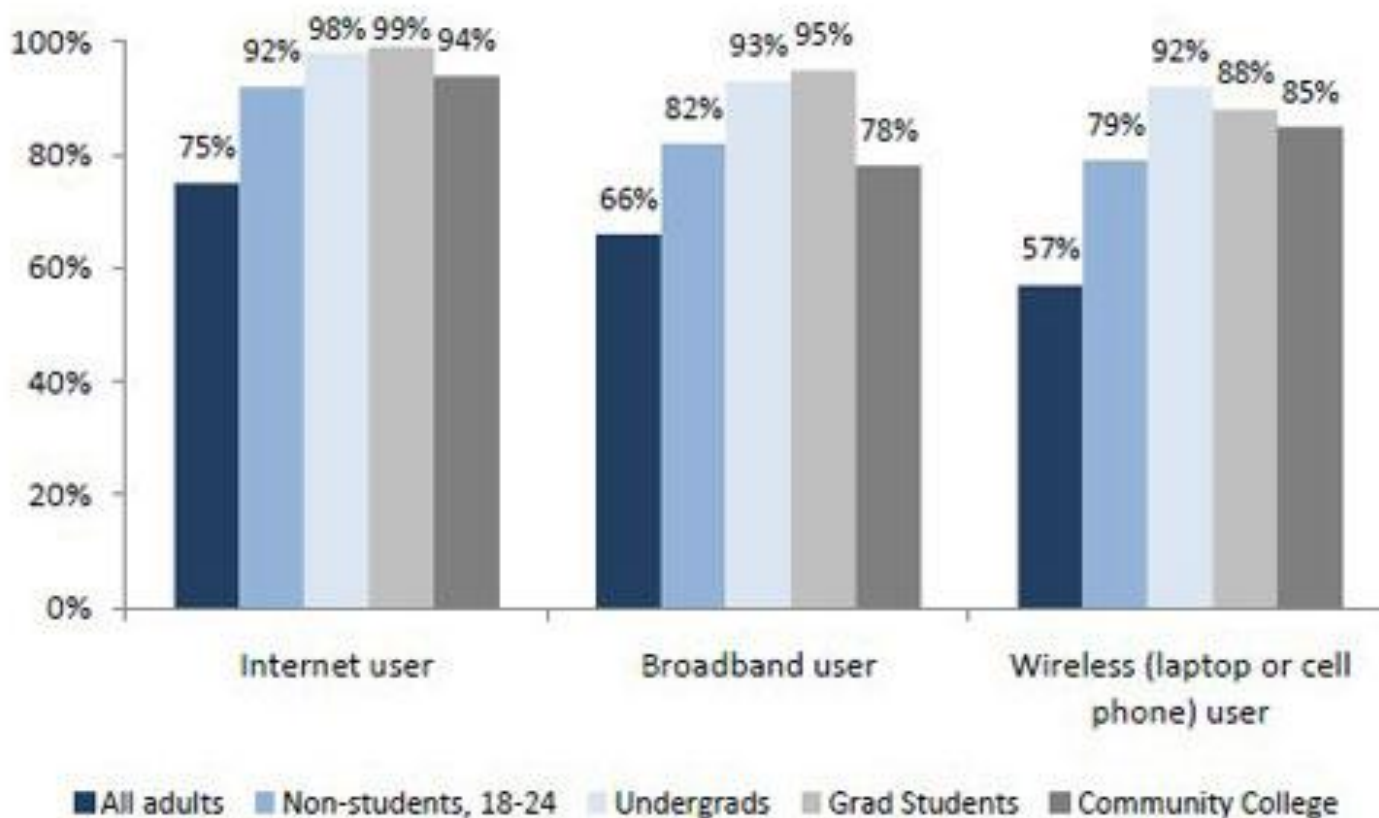
Several

Weekly

Monthly

Note: 2009 / capable for
Source: EDI Undergradu
Study, Vol. 6

121574



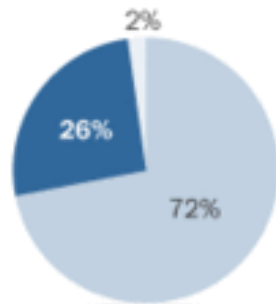
19.54

IM

Source: Pew Research Center's Internet & American Life Project 2010 tracking surveys. All include landline and cell phone interviews. N for all adults=9,769; n for 18-24 year old non-students=717; n for four-year undergrads=246; n for grad students=112; n for community college students=164.

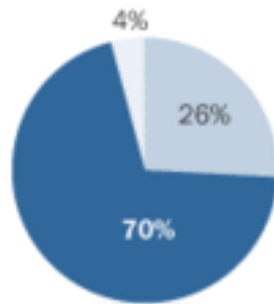
Technology “Skinny” - Data

Percent of faculty who ■ Never use it ■ Use it at least some ■ Do not know what it is



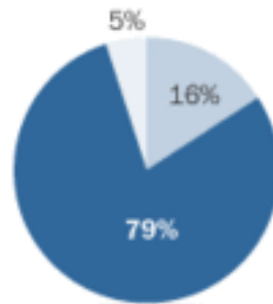
Course management systems

WebCT, Blackboard, Desire2Learn, Sakai, etc.



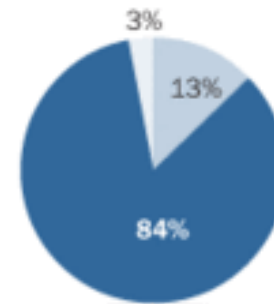
Plagiarism detection tools

Turnitin, DOC Cop, etc.

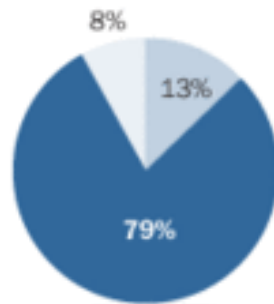


Collaborative editing software

Wikis, Google Docs, etc.

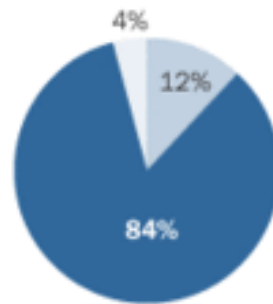


Blogs



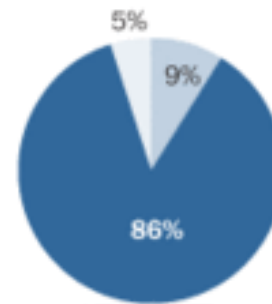
Student response systems

Clickers, wireless learning calculator systems, etc.



Videoconferencing or Internet phone chat

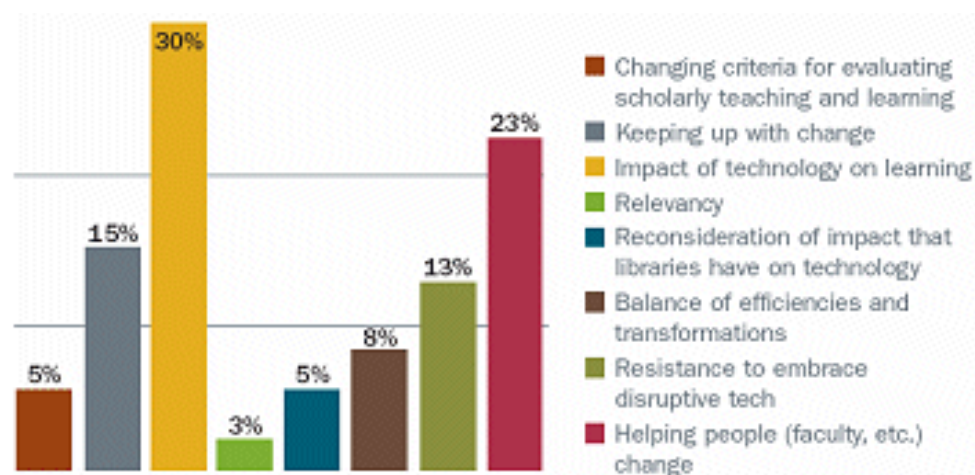
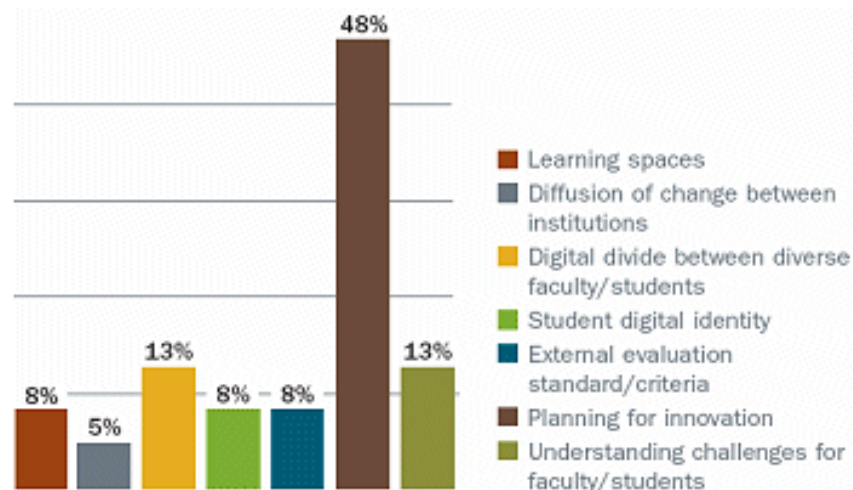
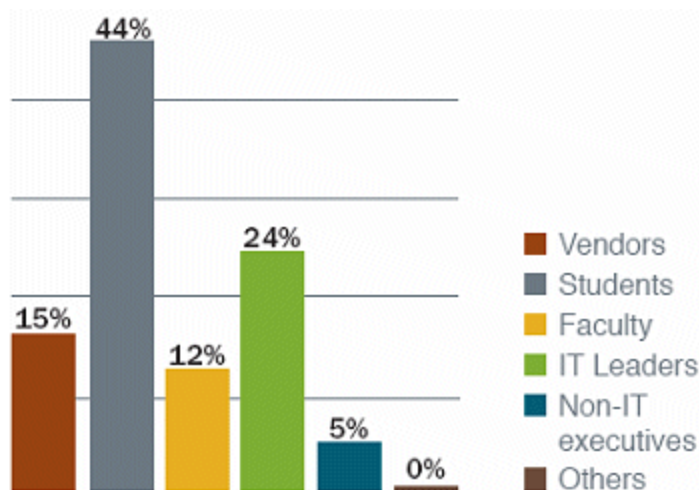
Skype, TeamSpeak, etc.



Video games, simulations, or virtual worlds

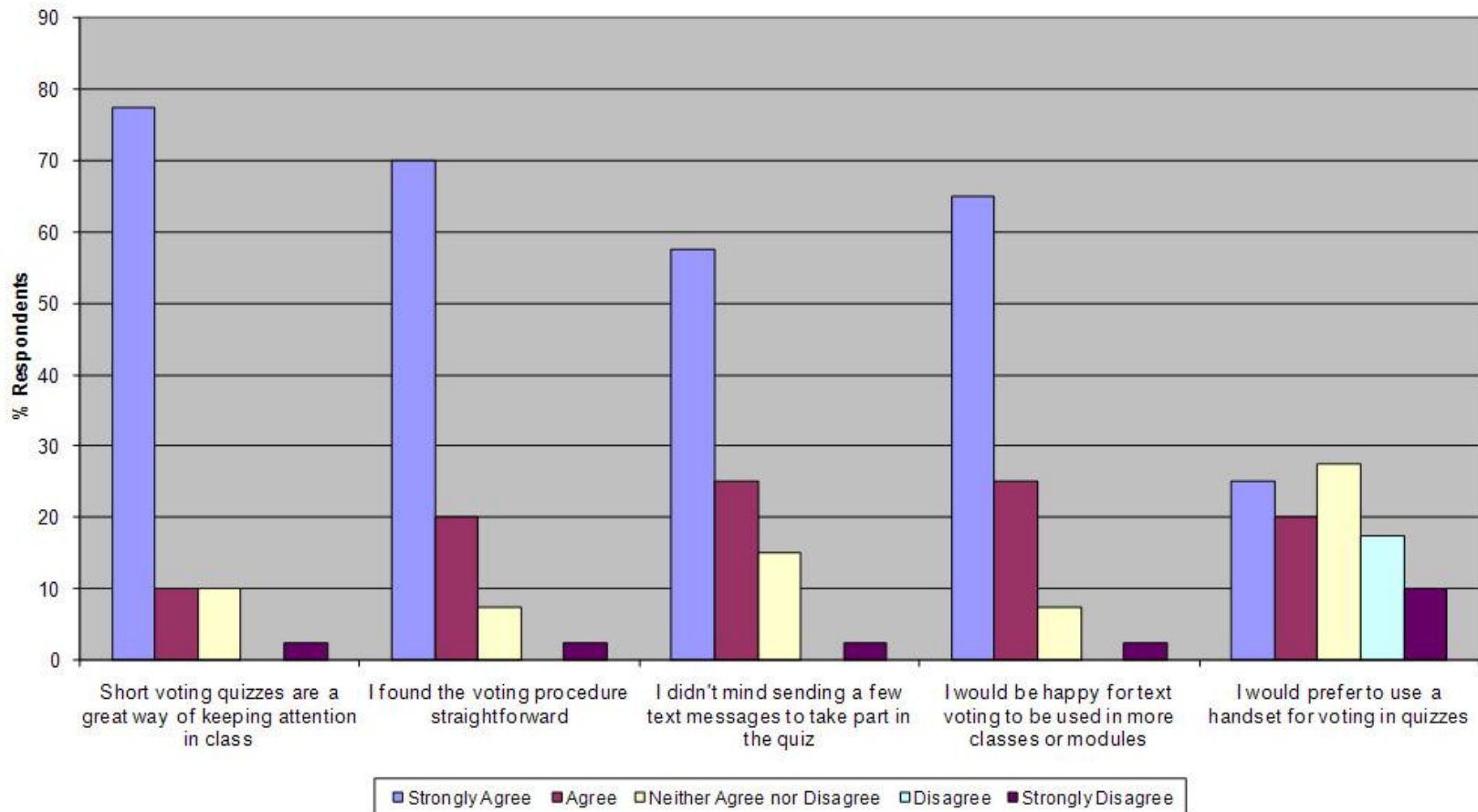
Ayiti, EleMental, Second Life, Civilization, etc.

Technology “Skinny” - Data



Technology “Skinny” - Data

Student Responses to the Use of In Class Voting via Text Messaging



“Budget, Cell Phone Ban, Sex Offenders Dominate Final Days of Legislative Session”

-Maryland

“School Cell Phone Ban Causes Uproar”

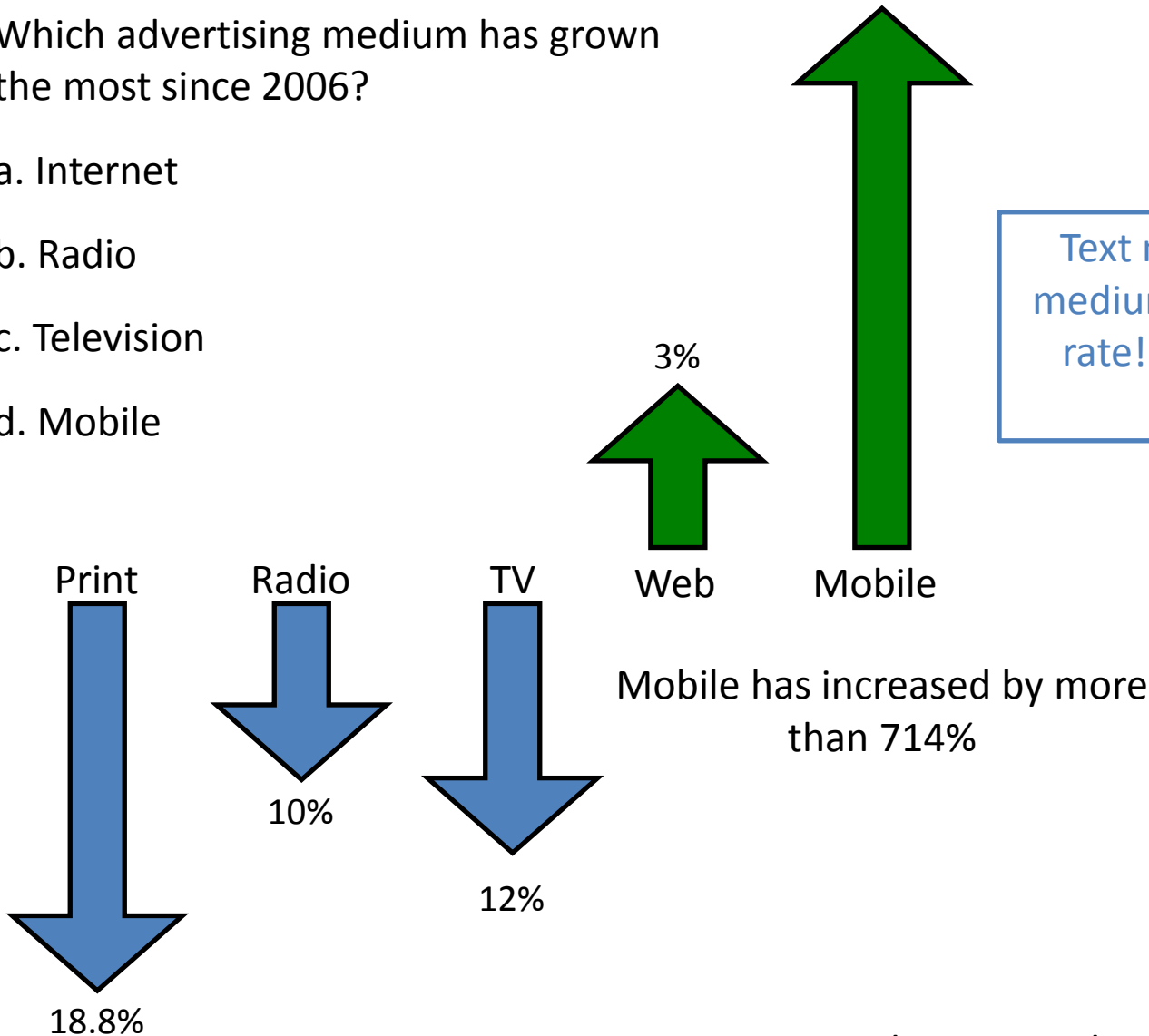
-New York

If you had to diagnose him,
what would you say? Text your
response to 719-357-7092

Why Mobile for Instruction?

Which advertising medium has grown the most since 2006?

- a. Internet
- b. Radio
- c. Television
- d. Mobile



Text messages are the only medium that has a 100% read rate! Every text message is read!

My Contribution...

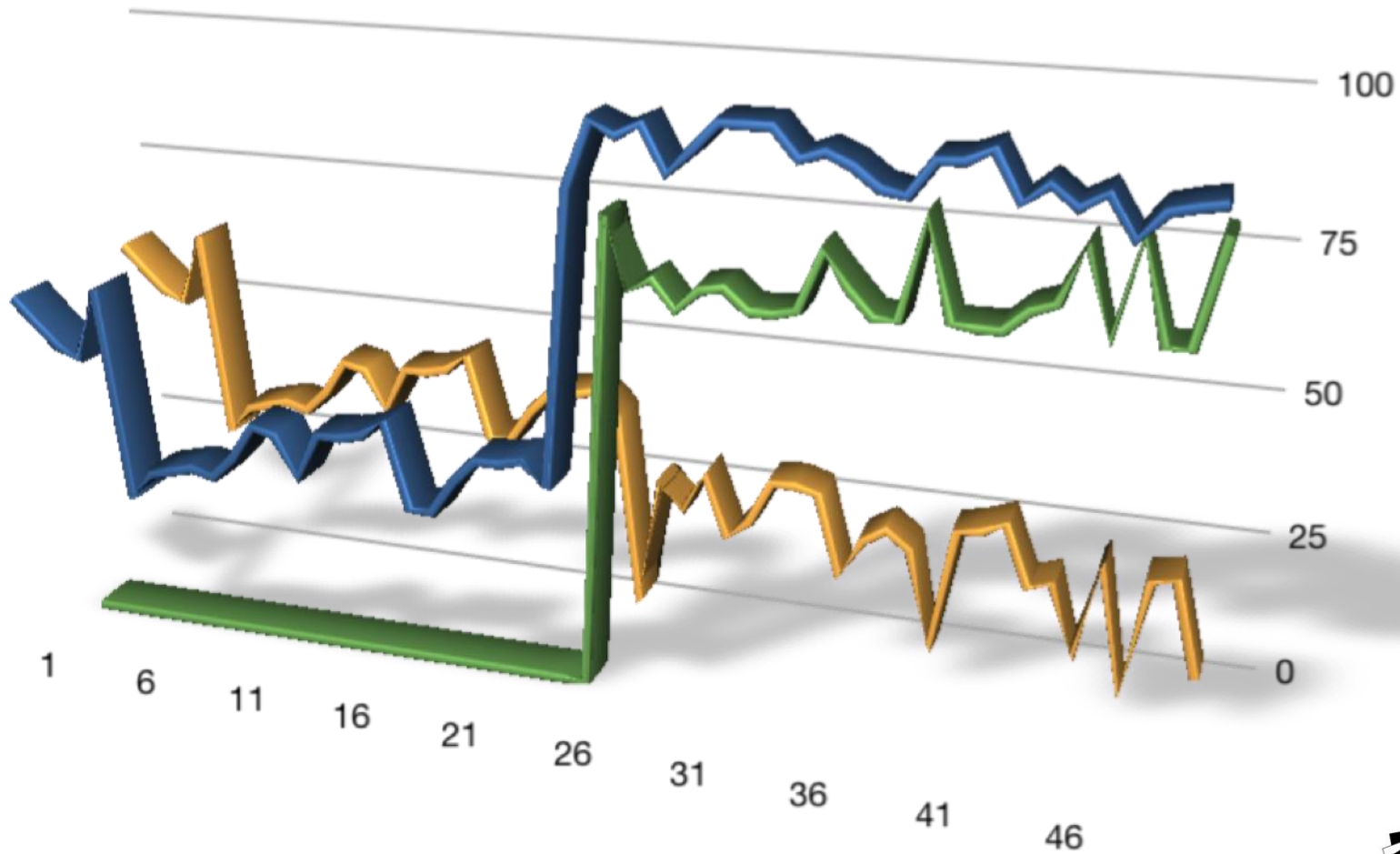
Design:

- 1.Public Low-Income School
- 2.Free tools!
- 3.Student phones (all models)
- 4.Evaluate engagement and achievement

The Experiment: 204 Students, 2 Years, 468,008 questions, 72% Free-And-Reduced Lunch!

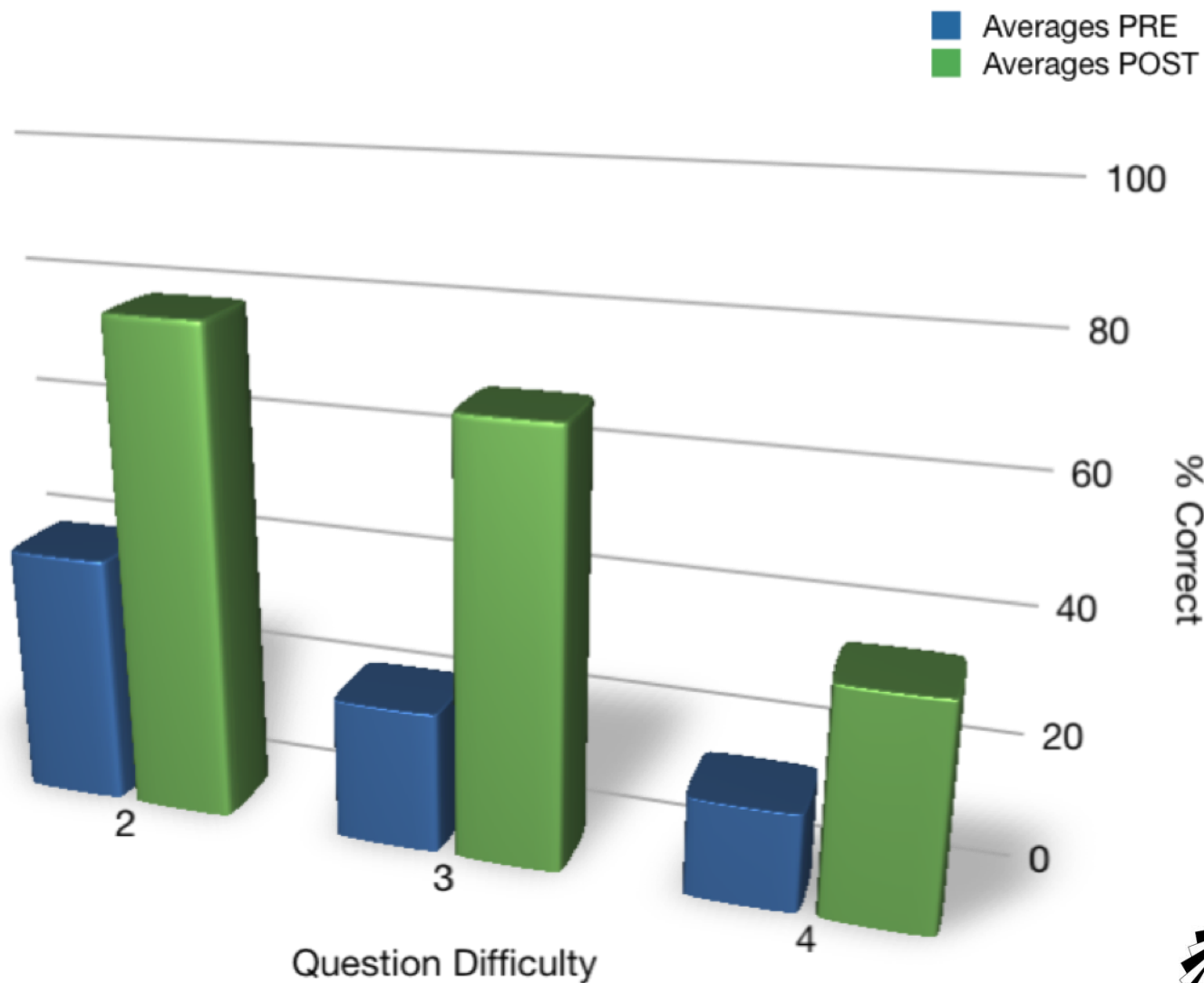
Participation in % of Students Present

— Total Participation — Mobile Participation — Written Participation



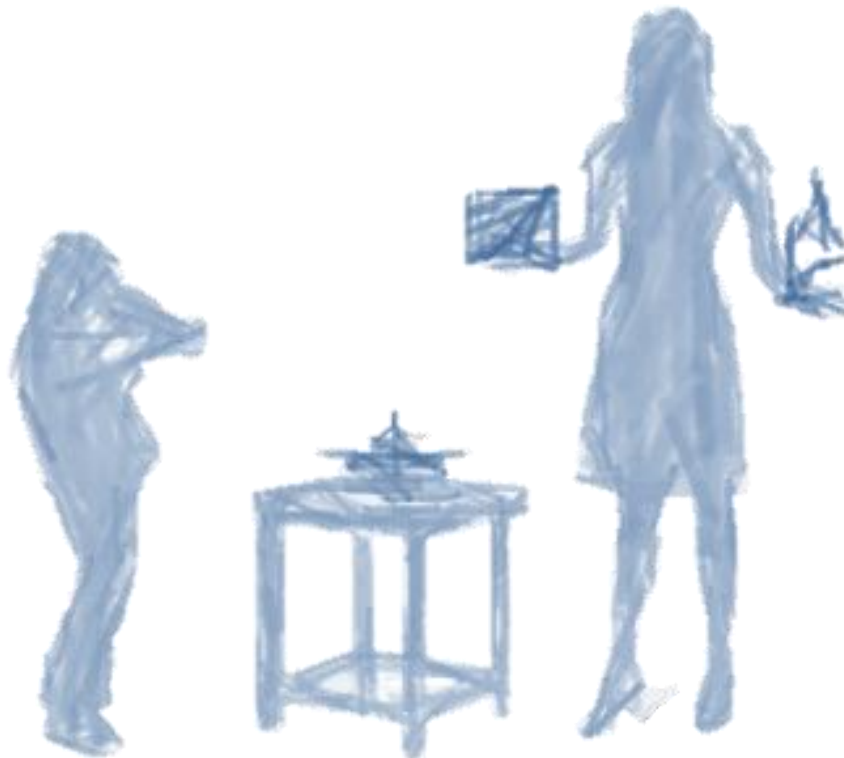
Question Score vs Difficulty

RESULTS



What can you do?

Knowing the resources is the battle!



Clickers? (research)

- **What is the purpose of having students use clickers in class?**
- Integrate a “Game Approach” to Learning (Martyn, 2007)
- Engagement and Assessment (Duncan, 2006)
- Not as another “Test” (Weiman, 2005)

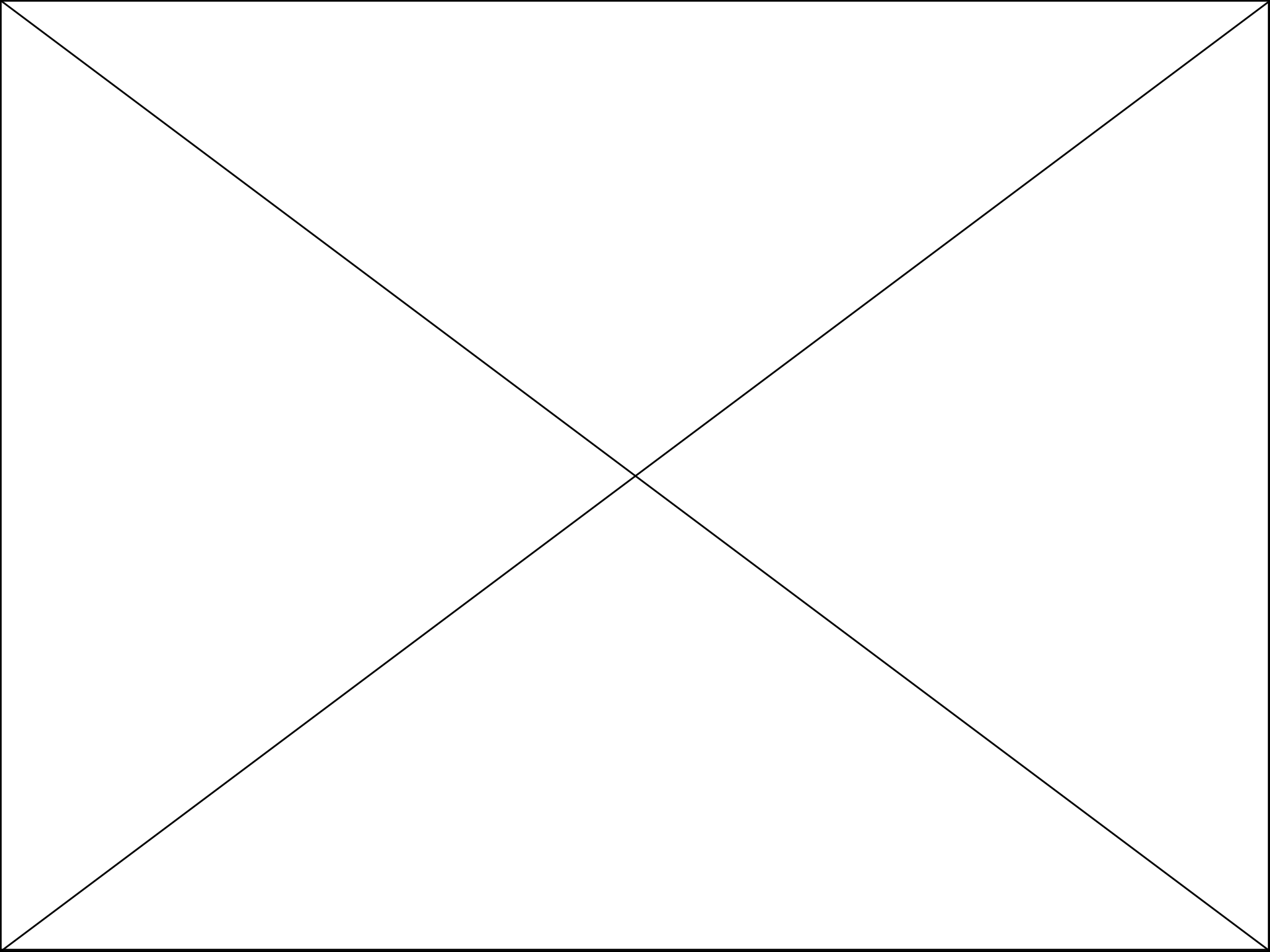
Introduction to PollEverywhere

What is your favorite color?

To vote: Text a **CODE** to **22333**

Cellular





Truly “Mobile” Clickers

Multiple choice poll

“Choose your favorite color”



What is it?

With multiple choice polls, you define a list of possible answers. Graphs will display the results in real-time.

Clever uses

Audience choice awards for live performance events, live feedback for presenters, quick quizzes and customer profiling and market research.

Free text poll

“What is your name?”



What is it?

Your audience can text in anything. Gather feedback or identifying information, like names or ID numbers.

Clever uses

Ask people to respond with their name, an ID number, or their phone number. You can use this later to identify their other answers by matching up results from many polls. Public speakers can collect questions from very large audiences privately and choose which to address. Radio stations use free text polls to have listeners submit questions to the DJ. Educators can ask students for short answers. Use it to support silent auctions!

Goal poll

“Set goals and raise money”



What is it?

Receive pledges for donations to your non-profit from people via text messages! During your fundraising event, you can use our pledge thermometer which shows live pledges to add excitement and encourage other people to pledge.

Multiple Question Types
Easy to Use
Free for Educators
Multiple Responses



Poll Everywhere

Limitations:


1. Only allows for a maximum of 30 participants in the free version
2. No cross correlation of responses for the free version
3. No moderation

Polling for Instruction & Assessment (Examples)

What is a Star?



ing from

 **Start** this poll to accept responses

"i think a star is a big ball of fire"

almost 3 years ago

arrald

"i think a star is a big ball of fire."

almost 3 years ago

"i think a star is a hot ball of gas <\$J-DUBB\$>"

almost 3 years ago

"I think a star is millions of nuclear reactions happening to make light."

almost 3 years ago

"i think a star is a meteor that forms to a star *BIG hearts break easy*"

almost 3 years ago

dinosaurs

rodent l...

Advanced Features...

Sh

"telophase ,anaphase ,metaphase ,prophase"

over

Moderator

Recent Responses

Check to apply

Yes science

totally

No idk

telophase

and the

Undecided telophase

telophase

telophase

telophase ,anaphase ,metaphase ,prophase

telophase ,anaphase ,metaphase ,prophase

[Show older responses](#)

Responding as Victor Fitzjarrald | Sign Out

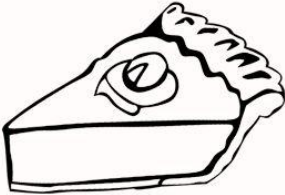
Hi there!

If this is your first time here you're probably wondering what this is.

As soon as your presenter displays a poll, we'll automatically update this area and give you the voting options.

Your responses are in the column on the right. Feel free to click on them to go back to the poll. Don't worry, you'll still be able to go back to the current poll your presenter is on.

Thats it! **Easy as pie.** Just hang tight, you're ready to go.



My Response History

Only you can see these responses

Q: Which Classroom Response System Do You Prefer?
Mobile Devices

Q: DEMO: This is the demo question, but try it out!
test

Q: List the four phases of mitosis in reverse order
idk

Q: What conversion do you need when going from moles to moles?
IDK

Q: Two angles are supplements. One angle is X the second angle is $4X - 10$. What is the measurement of the larger angle? The picture is shown on the board.
C) 142

February 5, 2009, 09:36 AM

February 5, 2009, 09:25 AM

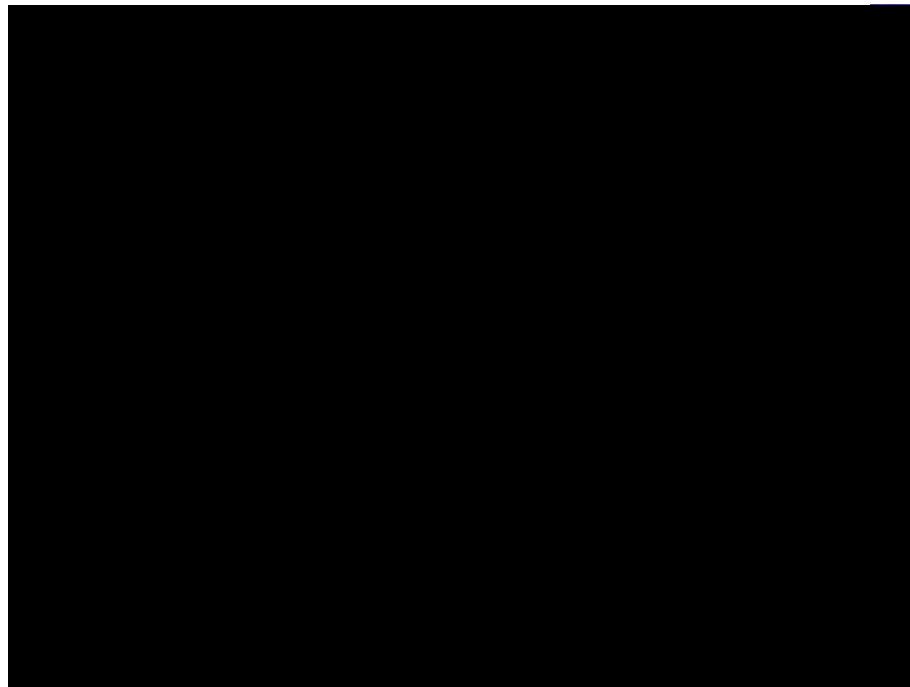
Effective Integration of Polling

- What is the most effective (pedagogical) approach to conducting formative assessment in the Classroom?
- Think-Pair-Share (at your table)
- Be ready to share what a good strategy would be!

Flipped Classroom



Video-Based Teaching



science 360 FOR iPad

PERIODIC TABLE OF VIDEOS

The University of Nottingham

Click on any element to launch video
= recently updated

									B	C	N	O	F	Ne
									Al	Si	P	S	Cl	Ar
Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	Uut	Uuq	Uup	Uuh	Uus	Uuo

KHAN
ACADEMY

Discovery
EDUCATION™

teachers'domain

verizon foundation

The Khan Academy...

Seamless integration with Google apps accounts
Mentoring and Coaching options
Student Progress monitoring
Standards Alignment



Access via: www.khanacademy.org

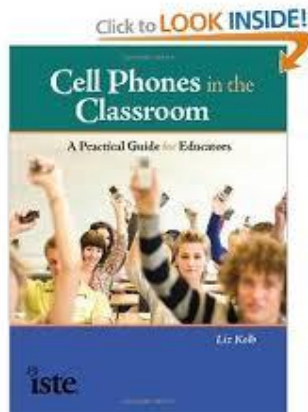
The Khan Academy...

Common Uses:
Math and Science Intervention
Additional Formative Assessment
On the Fly Assignments



How could you use video education in your classroom?

Liz Kolb



ISTE Author, extensive resources on her website.
Includes Lesson Plans and Resources
Maintains a Blog and Radio Show
Teaches Pre-Service Teachers
Active Twitter Member

Access via: cellphonesinlearning.com
Twitter: @lkolb

SIGML

ISTE Special Interest Group (SIG)
Part of your membership package
Active membership (3K+)
Research and Resource Databases



Access via: sigml.iste.wikispaces.net
Email IC: victor.fitzjarrald@gmail.com to join the SC!

iSchoolInitiative

Tools created by Students for Students!
iOS Specific App Selection and Tool Use
Includes lesson ideas and thriving PLN



Access via: ischoolinitiative.org

CK12 Foundation



- Free Textbooks
- STEM Applications
- Customizable
- Workbooks / Labs / SE / TE

Accessible at: www.ck12.org

Edmodo

- Interactive School Social Network
- Created for Educators with more control than FB
- Thriving community of Education Professionals



Access via: www.edmodo.com

Easy to setup school/teacher accounts

PHET



- Science Simulations from the University of Colorado
- Designed for Teaching Physics
- Includes a wide array of STEM applications

Access via: <http://phet.colorado.edu>

Great for hard to visualize STEM principles

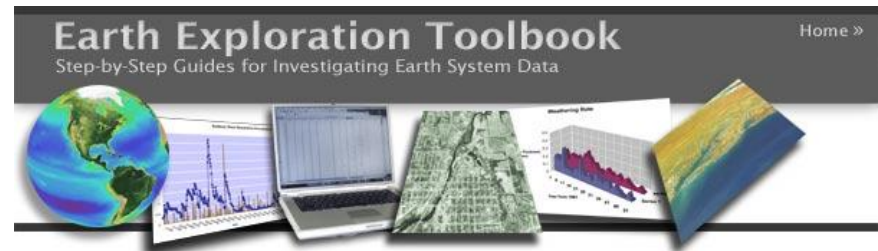
Discovery STEM

Resources and Materials from the Siemens Foundation
Includes Webinars and Lesson Plans
Has a thriving PLN

Access via: <http://stem.discoveryeducation.com/>

The Earth Exploration Toolkit

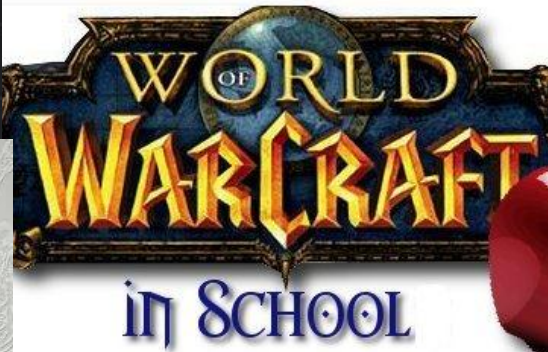
- NSF Funded Lesson Development
- Scientific Questions with K-12 Lesson plans.
- Free Programs/Applications



Access via: <http://serc.carleton.edu/eet/>

Real science for students!

Games / Simulations



Game Based Learning: Dean Groom
SIG-GS: Games and Simulations

Spore



- Science based evolution / colonization game
- Teaches scientific principals
- Large Education Following
- Prototype Games...

Prototypes accessed at: <http://www.spore.com/comm/prototypes/>
iOS Game and PC Game

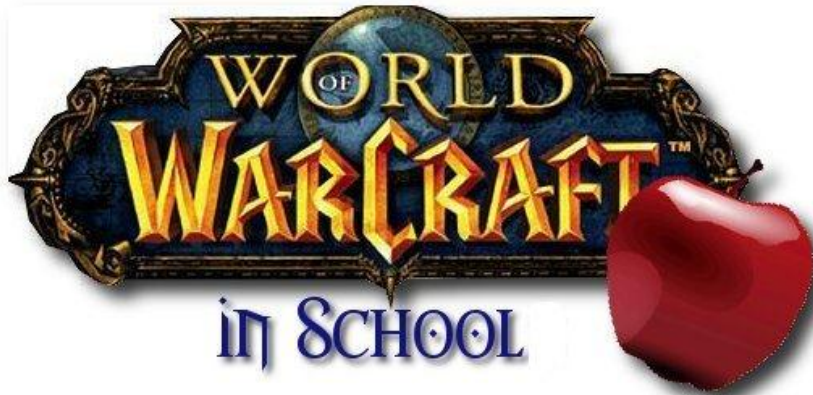
Portal 2

- STEM based Lesson Plans
- Popular Scientific Video Game
- Free Education Licenses
- Additional Resources



Can be found at: <http://www.teachwithportals.com/>

Warcraft



- Extensive Curriculum Ideas
- Math / Literacy Focus
- Active Community
- Engaging Game

Can access at:

<http://wowinschool.pbworks.com/w/page/5268731/FrontPage>

Pandemic

- Biology Curriculum
- Flash based game, focuses on evolution and biologic change
- New iOS app.



Access at:

<http://www.crazymonkeygames.com/Pandemic-2.html>