

# USING TECHNOLOGY TO ENHANCE LEARNING

RICHARD WEST • MARCH, 2011  
INSTRUCTIONAL PSYCHOLOGY AND TECHNOLOGY



# WHO I AM

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- UGA Graduate
- Started at BYU in 2009
- IP&T Department
- Researching collaborative creativity, technology integration, and distance learning

# WHO I WAS

## Logan pounds old foeCrushes former region mate Ben Lomond

Story Image Share Print Font Size: - +

0 tweet Share



Posted: Thursday, December 13, 2001 12:00 am | Updated: 10:37 am, Wed Oct 7, 2009.

Rick West | 0 comments

By Rick West

staff writer

This is what it feels like to click on all cylinders.

Logan (4-2) played its best basketball of the season on Wednesday night to overpower 3A Ben Lomond, 61-35. Every Grizzly played and nine scored against the winless Scots (0-6).



Copyright: The Herald Journal, Logan, Utah

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<http://byuipt.net/wests/rick>

# WHO USES TECHNOLOGY?

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National Literacy Trust survey of 3K kids ages 9-16  
Greenhow, Robelia, and Hughes, 2009



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# WHO USES TECHNOLOGY?

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The Students Do.

National Literacy Trust survey of 3K kids ages 9-16  
Greenhow, Robelia, and Hughes, 2009



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# WHO USES TECHNOLOGY?

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## The Students Do.

- 90% of U.S. teens use the Internet, usually every day and from their own home
- 55% use Web 2.0 technologies, usually daily
- 24% had their own blog
- 82% sent text messages at least once a month.
- 73% used instant messaging services to chat online with friends.

National Literacy Trust survey of 3K kids ages 9-16  
Greenhow, Robelia, and Hughes, 2009





# BUT ...

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*Greenhow, Robelia, and Hughes, 2009*



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# BUT ...

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Only 60% of students who use Web 2.0 technologies,  
use them for **education**

*Greenhow, Robelia, and Hughes, 2009*



# WHEN DO THEY USE IT?

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# WHEN DO THEY USE IT?

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From the Beginning!



An example website where  
my 6-year-old creates  
movies by herself

The screenshot displays the KerPoof website interface. At the top left is the logo "KerPoof™ Learning Through Creativity". The main workspace is a large central canvas showing a scene with a wooden house, a bridge, and a stagecoach. To the left of the canvas is a vertical toolbar with icons for "Clear", "Undo", "Redo", "Save", "Print", "Email", and "JPEG". To the right is a "KerPoof" library of assets including a hat, a bee, a wagon, a boy, a girl, a horse, and a cowboy. Below the canvas is a playback control bar with "Play", "Previous", "Next", and "Scene 1 of 1" buttons. At the bottom, there are two panels: "Object Methods" with "Move" and "Say" buttons, and "Stage Methods" with "Show Title" and "Start Song" buttons. On the far right, a vertical panel contains "Show Title" and "Rotate" buttons.



# WHEN? EVERY MINUTE

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“Those ages 8 to 18 spend more than seven and a half hours a day . . . And because so many of them are multitasking — say, surfing the Internet while listening to music — they pack on average nearly 11 hours of media content into that seven and a half hours.”

— Tamar Lewin, “If Your Kids Are Awake, They’re Probably Online” - <http://www.nytimes.com/2010/01/20/education/20wired.html>



# WHERE DO THEY USE IT?



[Some rights reserved by CrazyJoeDavola](#)



[Some rights reserved by AlphachimpStudio](#)

# WHY SHOULD WE USE TECH?

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West, R. E. (2010). Improving Online Civility. *McKay Today*, November, 11-13. Retrieved from <http://education.byu.edu/news/magazine/civilityonline/>.

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# WHY SHOULD WE USE TECH?

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Because it is their natural language

West, R. E. (2010). Improving Online Civility. *McKay Today*, November, 11-13. Retrieved from <http://education.byu.edu/news/magazine/civilityonline/>.



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# WHY SHOULD WE USE TECH?

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Because it is their natural language

- Every day, we ...
  - send 55 billion non-spam emails
  - tweet 50 million Twitter updates
  - compose 1.3 million blog posts
- 150 billion texts a month in the United States.

West, R. E. (2010). Improving Online Civility. *McKay Today*, November, 11-13. Retrieved from <http://education.byu.edu/news/magazine/civilityonline/>.



# WHY?

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*Ferris Bueller's Day Off*



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# WHY?

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Because it engages students.

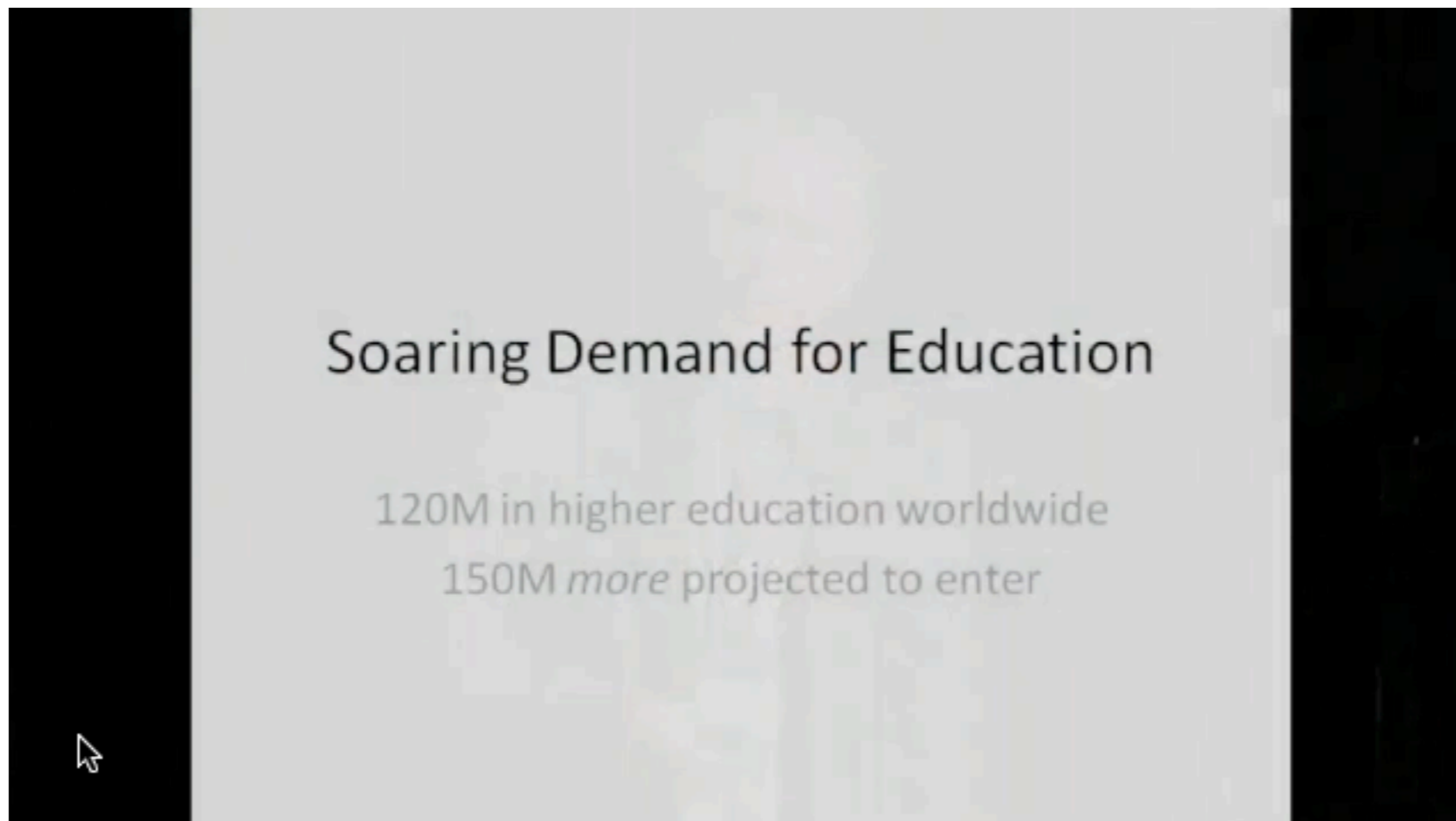


*Ferris Bueller's Day Off*



# WHY?

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Dr. David Wiley, TEDxNYED, March 2010

<http://www.youtube.com/watch?v=Rb0syrgsH6M>

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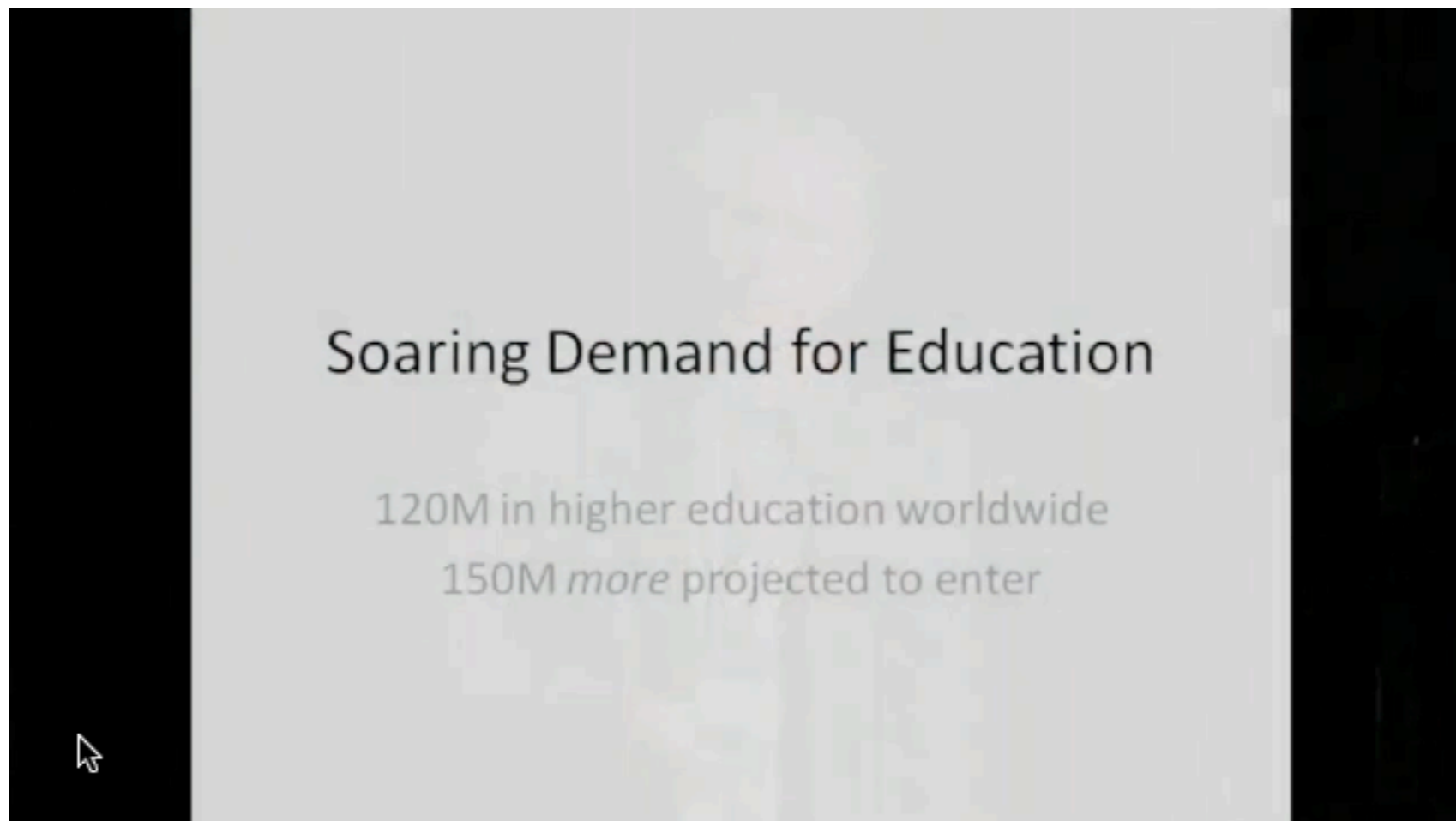


<http://byuipt.net/wests/rick>

# WHY?

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Because it can be more efficient and affordable



Dr. David Wiley, TEDxNYED, March 2010

<http://www.youtube.com/watch?v=Rb0syrgsH6M>

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# WHY?

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Because it can enhance learning.

West, R. E., & Graham, C. R. (2005). Five powerful ways technology can enhance teaching and learning in higher education. *Educational Technology*, 20-27.



# WHY?

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Because it can enhance learning.

- Visualization

West, R. E., & Graham, C. R. (2005). Five powerful ways technology can enhance teaching and learning in higher education. *Educational Technology*, 20-27.



# WHY?

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Because it can enhance learning.

- Visualization
- Interactions

West, R. E., & Graham, C. R. (2005). Five powerful ways technology can enhance teaching and learning in higher education. *Educational Technology*, 20-27.



# WHY?

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Because it can enhance learning.

- Visualization
- Interactions
- Reflection

West, R. E., & Graham, C. R. (2005). Five powerful ways technology can enhance teaching and learning in higher education. *Educational Technology*, 20-27.



# WHY?

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Because it can enhance learning.

- Visualization
- Interactions
- Reflection
- Authenticity and Engagement

West, R. E., & Graham, C. R. (2005). Five powerful ways technology can enhance teaching and learning in higher education. *Educational Technology*, 20-27.



# WHY?

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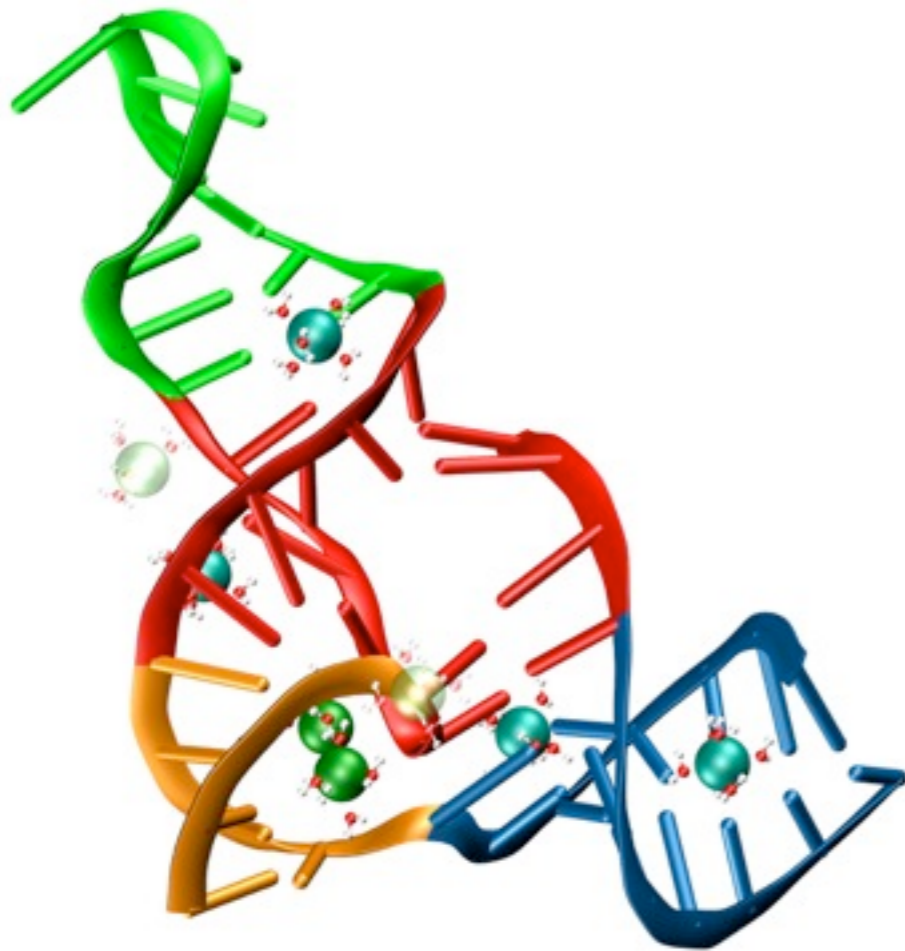
Because it can enhance learning.

- Visualization
- Interactions
- Reflection
- Authenticity and Engagement
- Quality and Quantity of Practice

West, R. E., & Graham, C. R. (2005). Five powerful ways technology can enhance teaching and learning in higher education. *Educational Technology*, 20-27.



# VISUALIZATION



Science Simulations (there are many)



Stellarium and Celestia Space Simulations

<http://www.stellarium.org/>  
<http://www.shatters.net/celestia>



# IMPROVING INTERACTIONS



<http://www.viddler.com>



[iClickers](#)

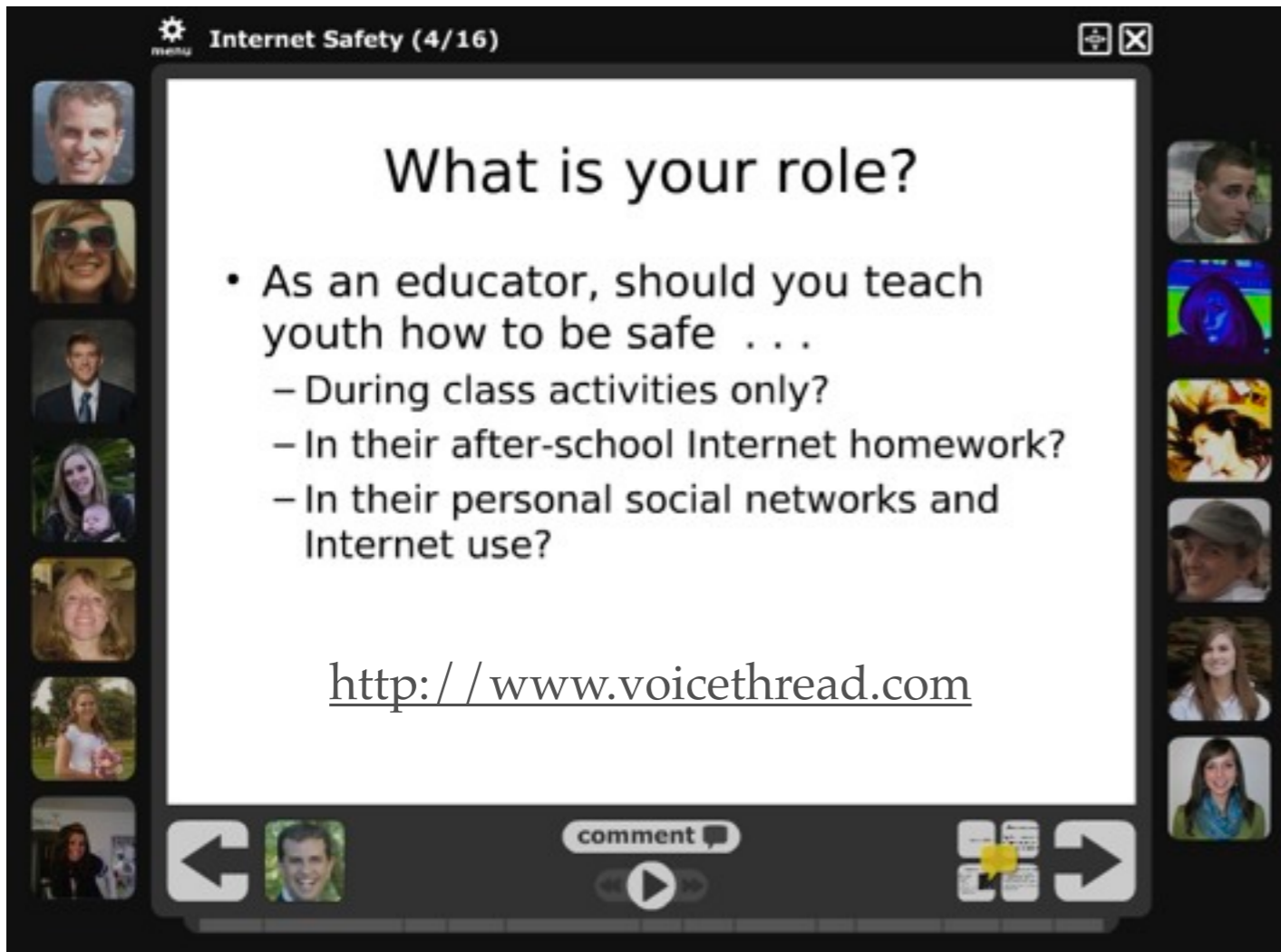
Internet Safety (4/16)

## What is your role?

- As an educator, should you teach youth how to be safe . . .
  - During class activities only?
  - In their after-school Internet homework?
  - In their personal social networks and Internet use?

<http://www.voicethread.com>

comment



## Student Comments about interacting through video

- Their video is more of a personal approach to the class when it was an online course. It was like, okay, they are a real person. I am not just talking to a computer.
- It feels like you are in that same room because you can see their facial expressions.
- I definitely felt like it helped me see faces and reminded me that there were other people in the class.
- I feel like I know someone when I see their faces.
- When you see them in a video and how they speak and how they act, you feel a lot more connected.

# REFLECTION



Video analysis tools such as MediaNotes (available to BYU for free), StudioCode, and others

# AUTHENTIC PROBLEM-SOLVING



Virtual Audiometer



Nursing Simulations

# AUTHENTIC PROBLEM-SOLVING

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Video at: <http://www.youtube.com/watch?v=2ArIj236UHs>

What did students learn in this activity?



# DAN MEYER

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Video at: <http://www.youtube.com/watch?v=NWUFjb8w9Ps>

# IMPROVING PRACTICE



Virtual Chemlab



CAD software for architecture

# IMPROVING PRACTICE



Virtual Chemlab

- Marketing simulations
- Personalization



CAD software for architecture

# HOW SHOULD WE USE TECH?

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# HOW SHOULD WE USE TECH?

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To enhance content through good pedagogy



# TECHNOLOGY INTEGRATION

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## Three Stages

Ideas from a book chapter in  
preparation with Dr. Randy Davies

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<http://byuipt.net/wests/rick>

# TECHNOLOGY INTEGRATION

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## Three Stages

- Increase access

Ideas from a book chapter in  
preparation with Dr. Randy Davies



# TECHNOLOGY INTEGRATION

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## Three Stages

- Increase access
- Increase use

Ideas from a book chapter in  
preparation with Dr. Randy Davies



# TECHNOLOGY INTEGRATION

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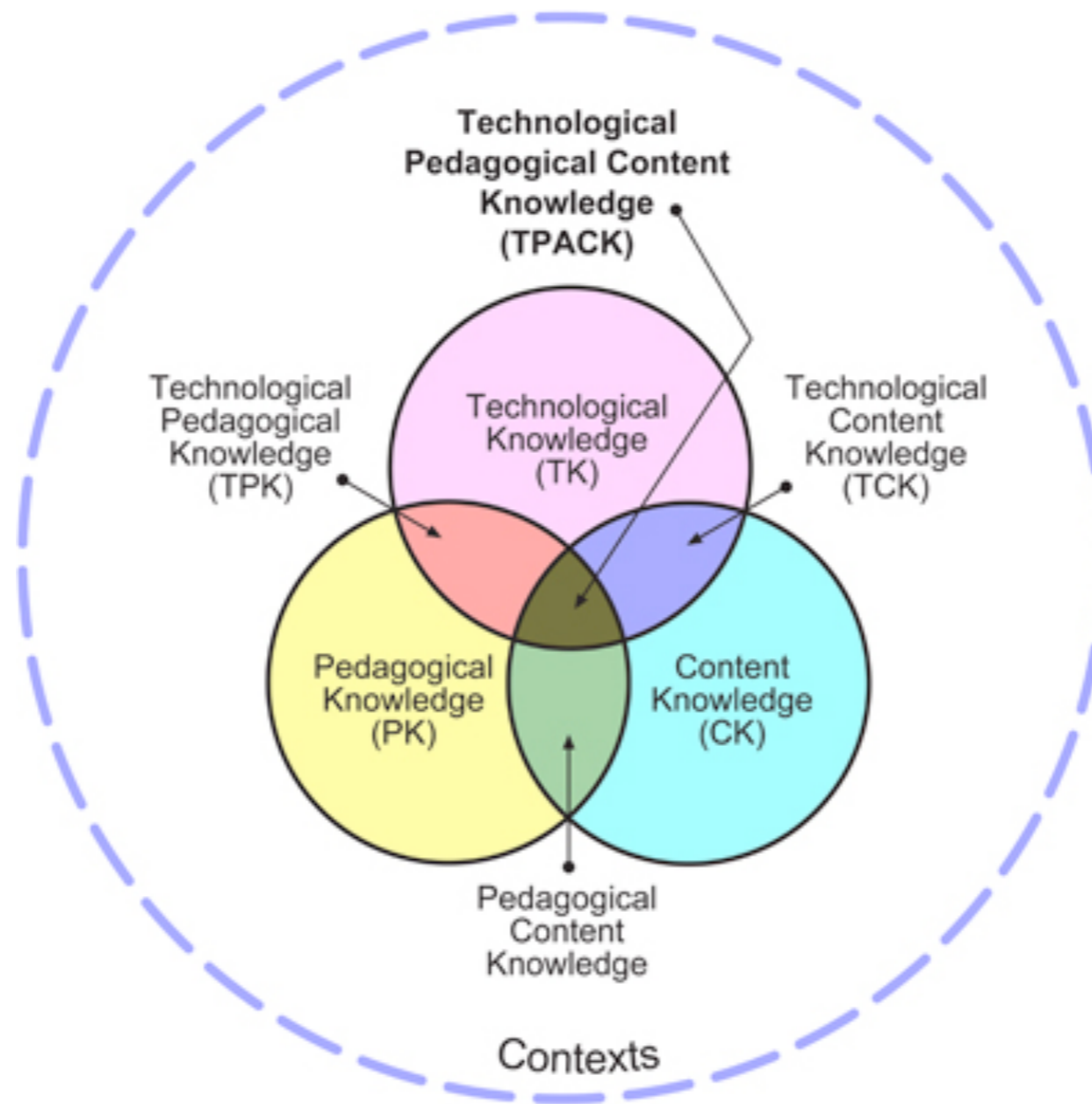
## Three Stages

- Increase access
- Increase use
- Improve effective use

Ideas from a book chapter in  
preparation with Dr. Randy Davies



# TPACK



<http://www.tpck.org/>



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<http://byuipr.net/wests/rick>

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# EXAMPLES

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<http://byuipt.net/wests/rick>

# DIIGOMEISTERS

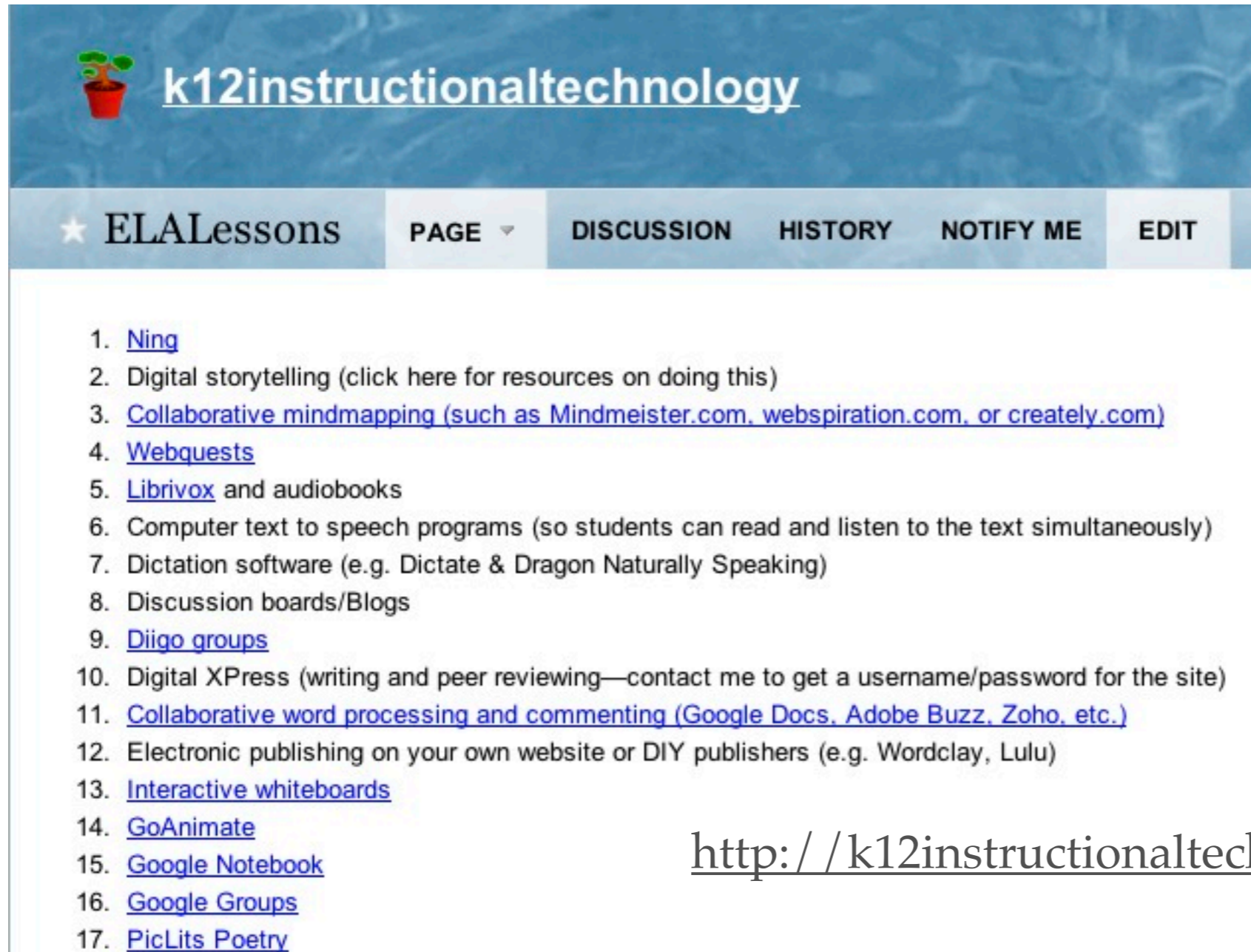
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See video at:

<http://www.youtube.com/watch?v=xebnwboMi9M>



# IPT 286 WIKI



The screenshot shows a Wiki page for 'k12instructionaltechnology'. The page has a blue header with a small tree icon and the title. Below the header is a navigation bar with buttons for '★ ELALessons', 'PAGE', 'DISCUSSION', 'HISTORY', 'NOTIFY ME', and 'EDIT'. The main content is a numbered list of 17 items, each with a blue hyperlink. The items are:

1. [Ning](#)
2. Digital storytelling (click here for resources on doing this)
3. [Collaborative mindmapping \(such as Mindmeister.com, webspiration.com, or creately.com\)](#)
4. [Webquests](#)
5. [Librivox](#) and audiobooks
6. Computer text to speech programs (so students can read and listen to the text simultaneously)
7. Dictation software (e.g. Dictate & Dragon Naturally Speaking)
8. Discussion boards/Blogs
9. [Diigo groups](#)
10. Digital XPress (writing and peer reviewing—contact me to get a username/password for the site)
11. [Collaborative word processing and commenting \(Google Docs, Adobe Buzz, Zoho, etc.\)](#)
12. Electronic publishing on your own website or DIY publishers (e.g. Wordclay, Lulu)
13. [Interactive whiteboards](#)
14. [GoAnimate](#)
15. [Google Notebook](#)
16. [Google Groups](#)
17. [PicLits Poetry](#)

<http://k12instructionaltechnology.wikispaces.com>



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# TECHNOLOGY INTEGRATION

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## Lucas Foundation

- Video at: <http://www.edutopia.org/stw-career-technical-education-classes-model-video>



# IIC COMPETITION

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mckay school of education  
**INNOVATIVE INSTRUCTION**   
competition

**\$15,000**  
in prizes

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<http://education.byu.edu/iic>

<http://byuipt.net/wests/rick>

# NOW YOU TRY IT!

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- What is one of your challenging pedagogical challenges?
- If you could do anything to improve this, what would it be?
- Is there a technology that could help with this?



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# THANK YOU!

**RICKWEST@BYU.EDU**



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