

# Educational Technology Conference

William Paterson University

## iPads in the K-12 Classroom: How Can They Add Value?

Dr. Dominic Mentor

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# About Me

## **Teachers College Columbia University**

- Fulbright Scholar
- Designed 3 new niche area courses:
  - Online Video for Education
  - Mobile Phone Learning
  - Cognition and Handheld Devices

## **Designer and Adjunct Instructor**

- [Teaching America's First Course on Mobile Phone Learning](#)

## **Researcher/Consultant:**

- Consultant on and Co-designed a [graduate fellowship](#) with the New York Mayor's Office of Adult Education to use Social Media for adult learning
- Computer Assisted Language Learning
- Mobile Assisted Language Learning (New York Times)

## **Professional Developer (Staff and Students)**

# Educause Article

## Teaching America's First Course on Mobile Phone Learning

By Dominic Mentor and Nabeel Ahmad

### Key Takeaways

- Teaching a cutting-edge educational technology course requires making connections to preexisting knowledge in a conceptual educational framework.
- A new course advised students on projects covering international health, language learning, and interactive classroom response systems to demonstrate the potential omnipresent use of mobile phones for learning interventions.
- Carefully considering how to reach nontechnical people and how to determine their needs will help improve the diversity of and interactions with mobile phone learning opportunities.

# Teachers' Class Promotes Cell Phones As Next Great Learning Tools

By: Lindsey Christ



*A new course at Columbia University's Teachers College looks at cell phones not as a classroom distraction, but a tool. NY1's Education reporter Lindsey Christ filed the following report.*

# Keynote Outline

**3 Promises**

**2 Perils**

**1 Take away**



## Report: Apple's iPad Could Make You Smarter!

7:22 PM - July 8, 2010 - By [Kevin Parrish](#) - Source : [Tom's Guide US](#)

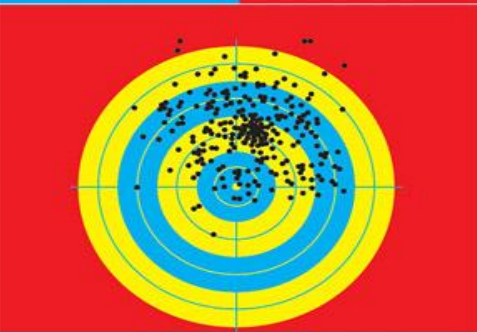
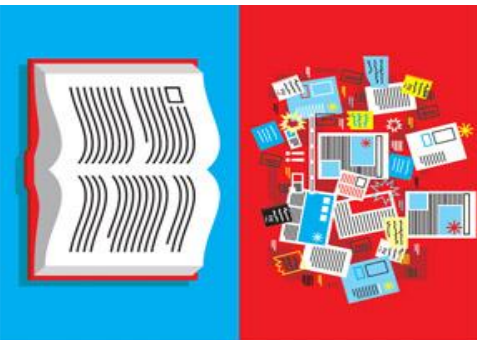
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Devices such as the iPad and iPhone lead to focused thinking.



# Author Nicholas Carr: The Web Shatters Focus, Rewires Brains

By Nicholas Carr  May 24, 2010 | 12:00 pm | [Wired June 2010](#)



# WILL THE APPLE IPAD ENHANCE LEARNING?

by LAYNE HEINY on APRIL 11, 2010

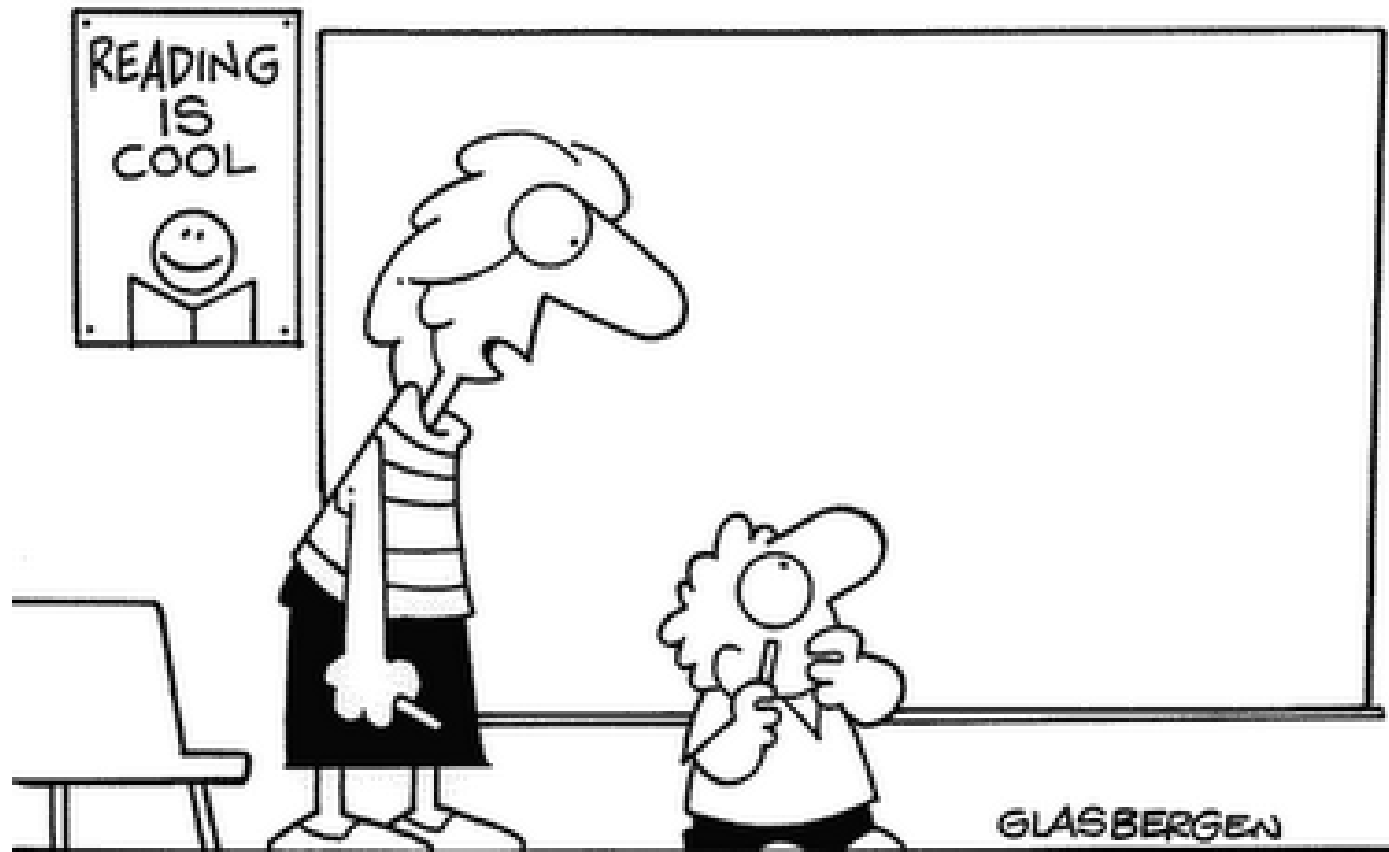
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- The blog *On Teaching Matters* asked [Is the iPad coming to your classroom?](#)
- How does a K-12 school manage the software (apps) that are on the iPad if everything is reliant on an iTunes account?
- The approach to the blog post appears from the perspective of the teacher or the learner?
- Let's all hope that the answer to this question is – **only if the iPad enhances learning.**



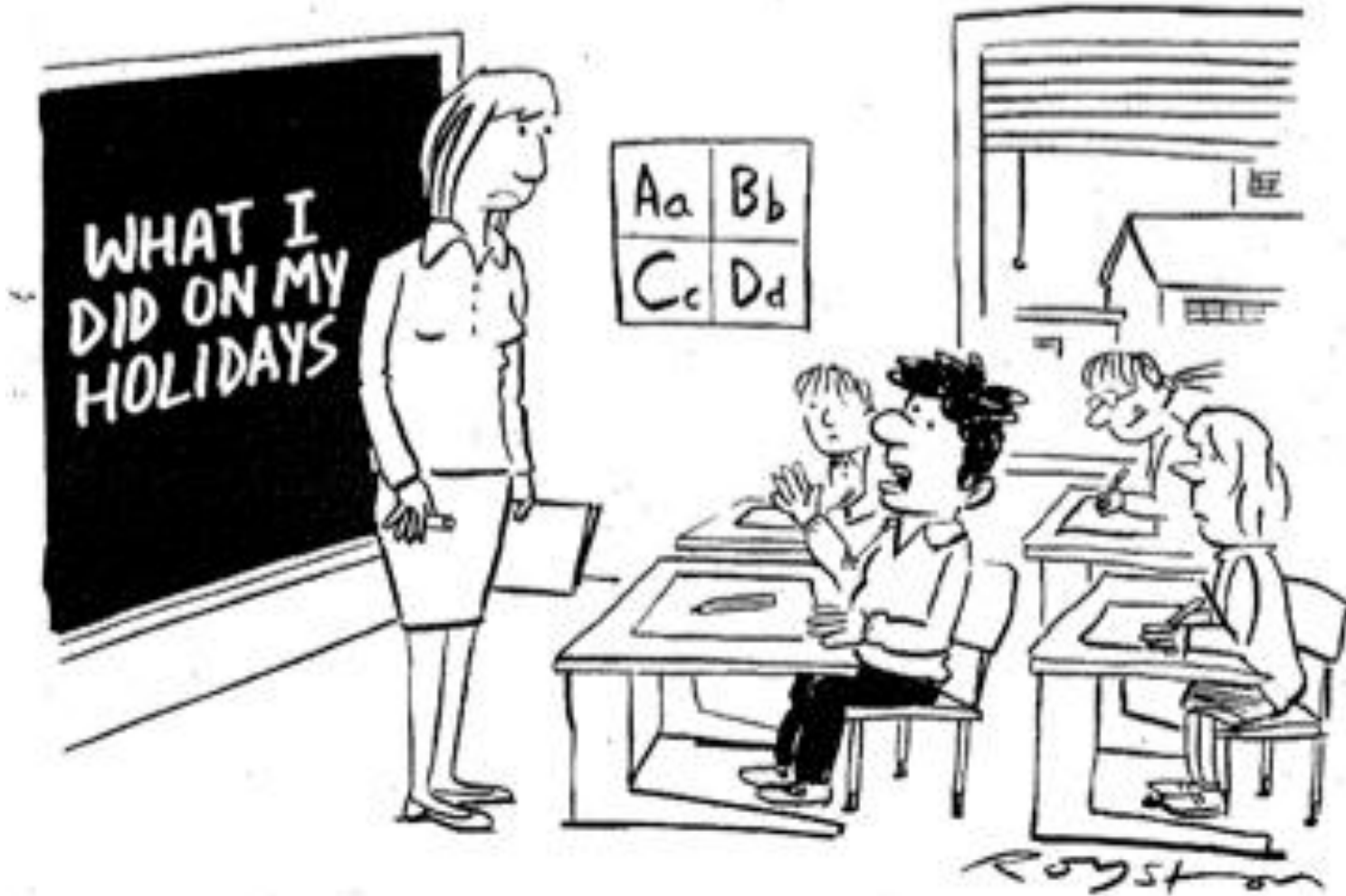
# 21<sup>st</sup> Century Students: Net Gen

Copyright 1996 Randy Glasbergen. [www.glasbergen.com](http://www.glasbergen.com)



**“There aren’t any icons to click. It’s a chalk board.”**

# Digital Natives and Digital Immigrants



"Can't I just email you a link to my blog, miss?"

# Research Review

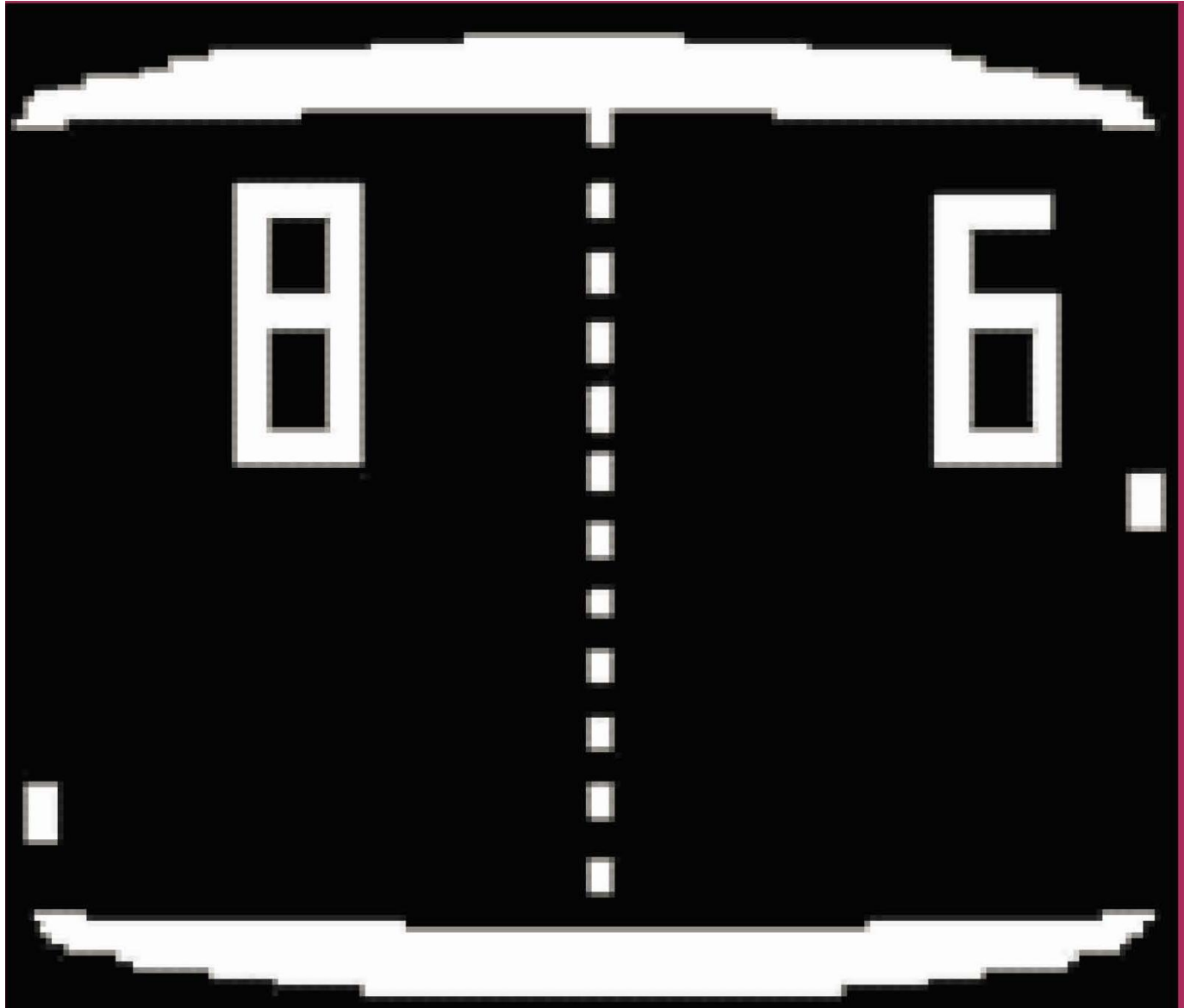
## K -12 and Higher Ed



Mobile devices are most commonly used by students and teachers as communication and multimedia access tools *Cheung & Hew 2009*



# Simple Valuable Games













Längste Handelsstraße  
2 Steppes

Die Karte zeigt die am längsten durchgehende Handelsstraße der Welt. Sie verbindet die Städte von Moskau bis nach Kanton. Die Karte zeigt die am längsten durchgehende Handelsstraße der Welt. Sie verbindet die Städte von Moskau bis nach Kanton.





# CATAN

THE FIRST ISLAND

Main menu

Continue game

Create game

Tutorials

Statistics

Options

Help

About

exozet games

USM

**Figure 1: (a) Pen Input is essential to the art of sketching. Pen-based tools like SketchBook Pro used with a Wacom tablet make powerful free-form sketching and painting tools that capture the manual skills of an artist.**





Women Men Children

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Add to your cart by shopping items here

# Readings

What you plan to read this week



What you'll actually read this week



## E-READER DISPLAYS E-INK VS. LCD



# Track if students did the reading

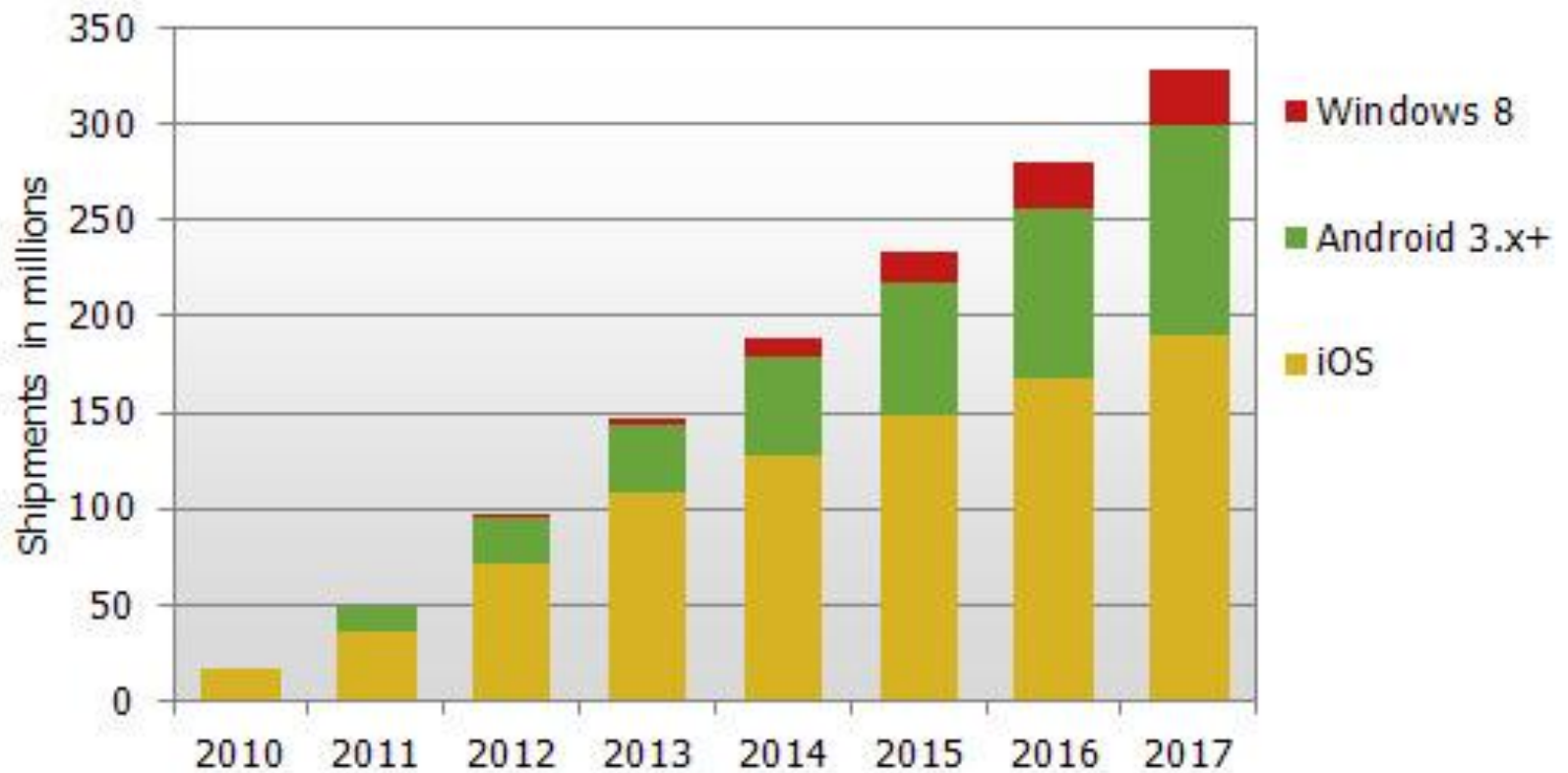


E-Textbooks can also track students reading habits

# Interactive books



**Figure 2: Worldwide Tablet PC Shipment Forecast by Operating System (millions)**



Source: Q3'11 DisplaySearch *Tablet Quarterly* report

Note: Not all tablet PC operating systems are represented in Figure 2.



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While computing has advanced exponentially,

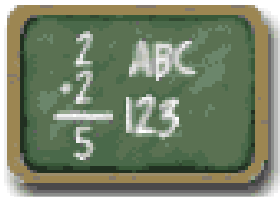


**VS**



# India's \$35 tablet - vaporware or the real deal?


By Christopher Dawson | July 23, 2010, 10:21am PDT

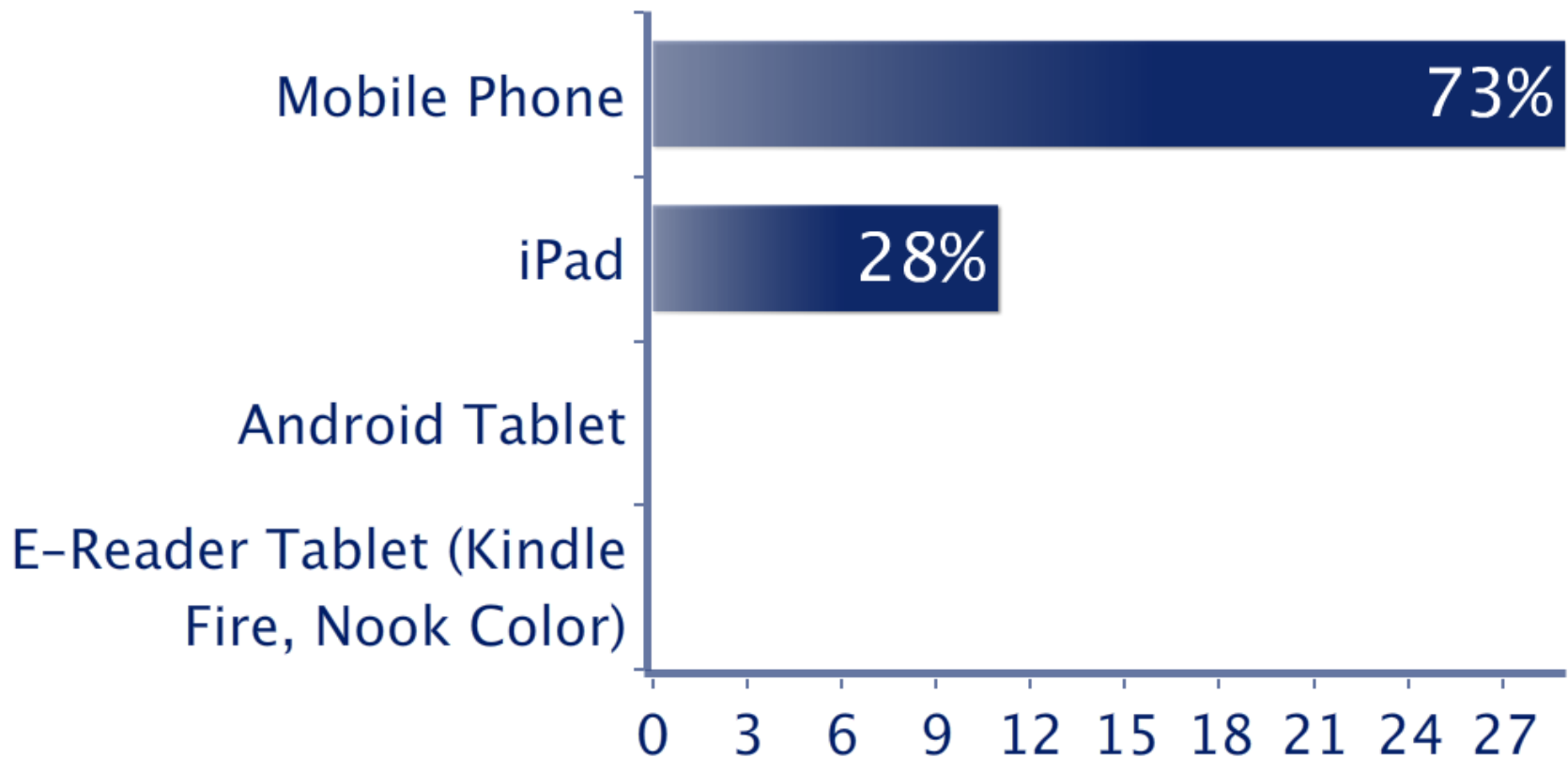


...2011 will see a host of inexpensive tablet devices that could be quickly deployed in educational settings if the software and apps are there to support it.



# Do you have any one of the following devices? Text a response for each one of the devices you own and use.

 This poll has received the maximum number of votes

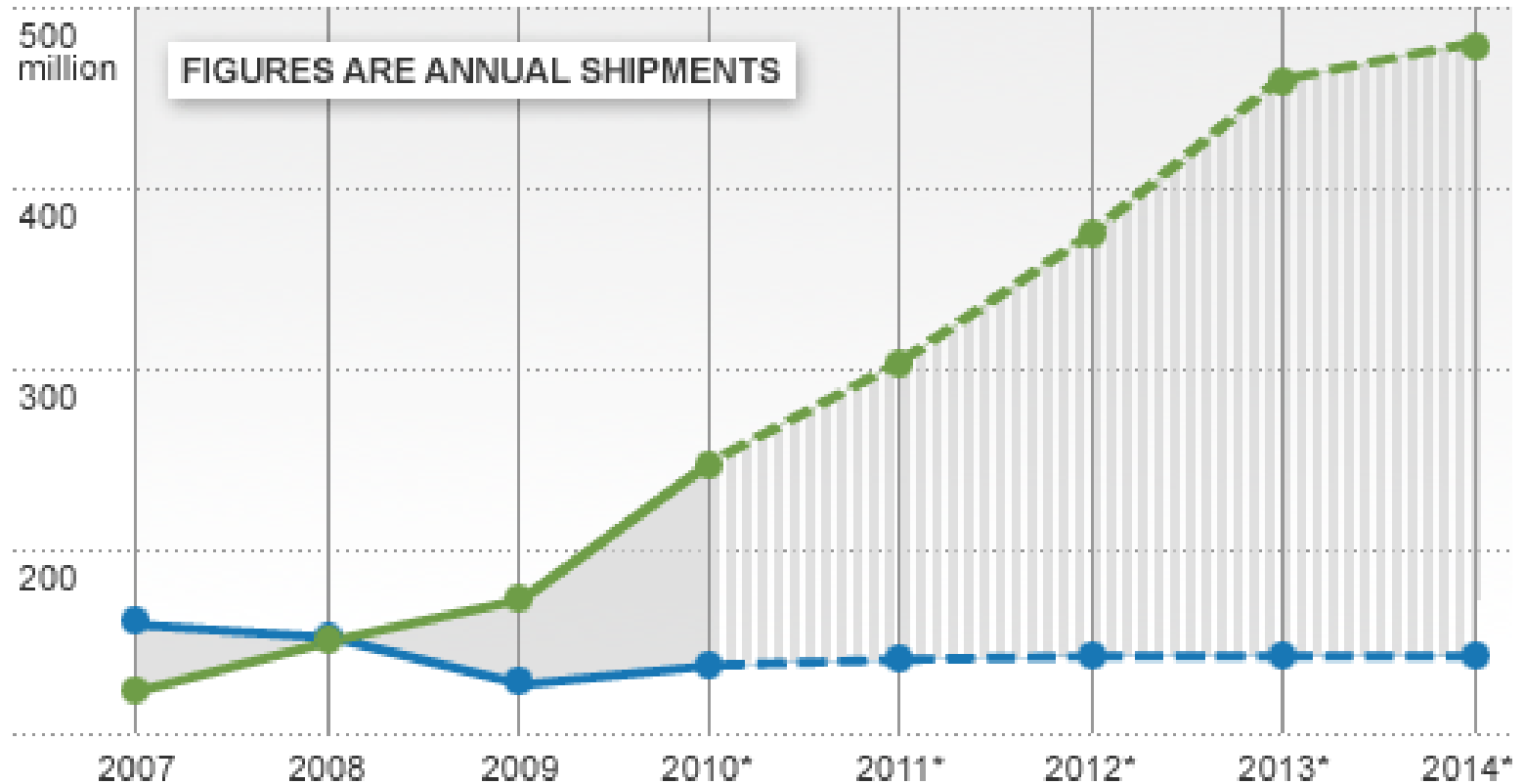


Total Results: 40

# The end of the desktop PC (seriously)

SMARTPHONES SOAR AS DESKTOP PCS FLATLINE

■ SMARTPHONES ■ DESKTOP PCS



\*2010-2014 ARE FORECASTS; SOURCE: IDC

# Pop Quiz - 50M users



37 years



3 years\*



34 years



13 years



4 years

# Promises vs Perils

"You come to school to learn, he declared, "not to play games or send text messages."

- Mayor Bloomberg

## Cellphones teach phonics, animation and more in school instead of cheating

Posted 7/27/2009 12:32 AM | Comments  12 | Recommend  2

By Colleen Long, Associated Press Writer

# Teacher's View of Mobile Devices



# Mobile Phone Learning Opportunities



**Dominic Mentor**



# Secretary of Education: “Yes!”



Ed. Secretary says yes to cell phones in class

July 14, 2009

0:00 | 1:27

# Cell phone tours become part of museum experience

By Lindsay Brasington  
Edited by Alex Riley

cingular 12:34 PM



7

*Annabeth nodded. "Your father isn't dead, Percy. He's one of the Olympians." ... "Who's your mom, then?" ... Annabeth straightened. "Athena. Goddess of wisdom and battle."*

Speaking of battles, what objects link Athena to Perseus's slaying of Medusa? Can you find a representation of Medusa's head?

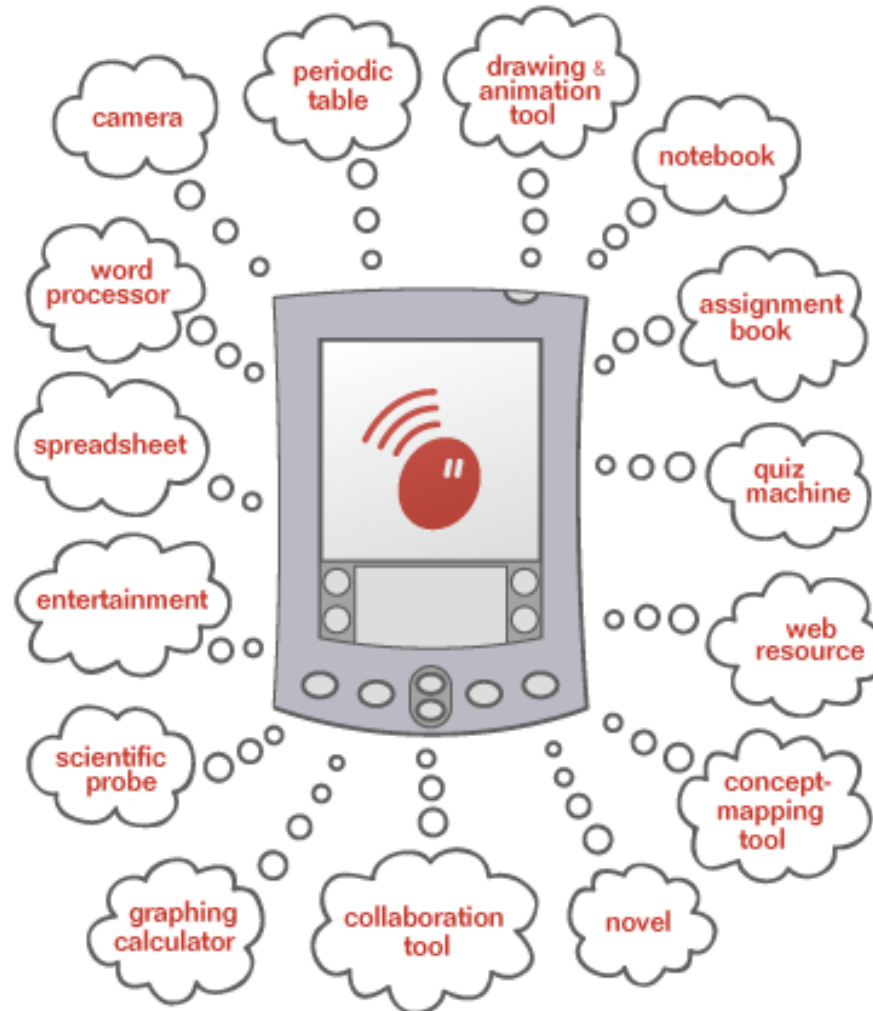
**DID YOU KNOW?** Athena armed Perseus for battle against the Gorgon, Medusa.



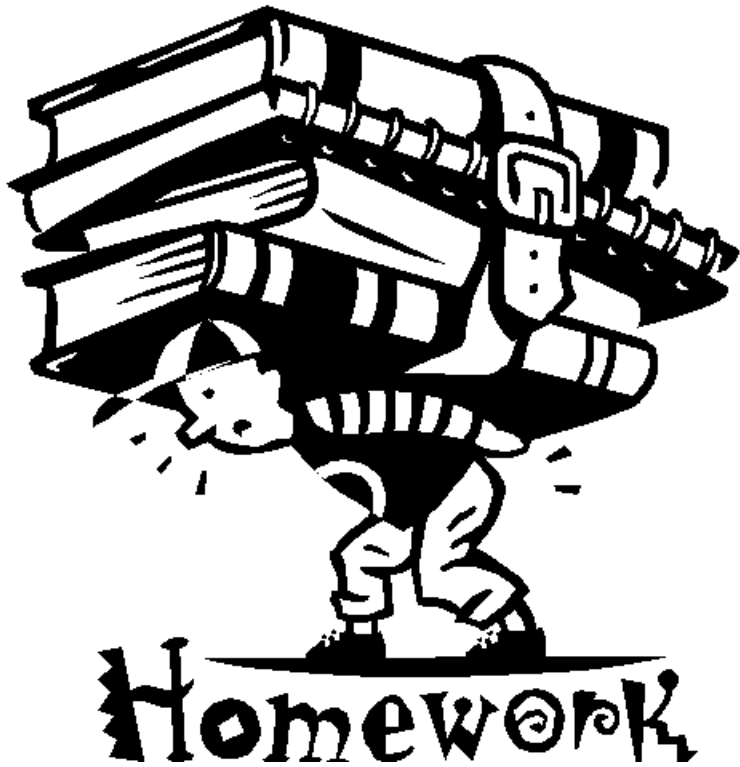
# Data Collection



# Promises: Solutions abound



# Perilous Pursuit?







# Opportunities:

Encourage Extended Learning and “Anywhere, Anytime” Learning

- Promote Situated Learning
- Break the barrier between home, school and after school

➤ EXAMPLES:

- Handheld Augmented Reality Games
  - Learn English
  - Math Support





# Augmented Recommendations

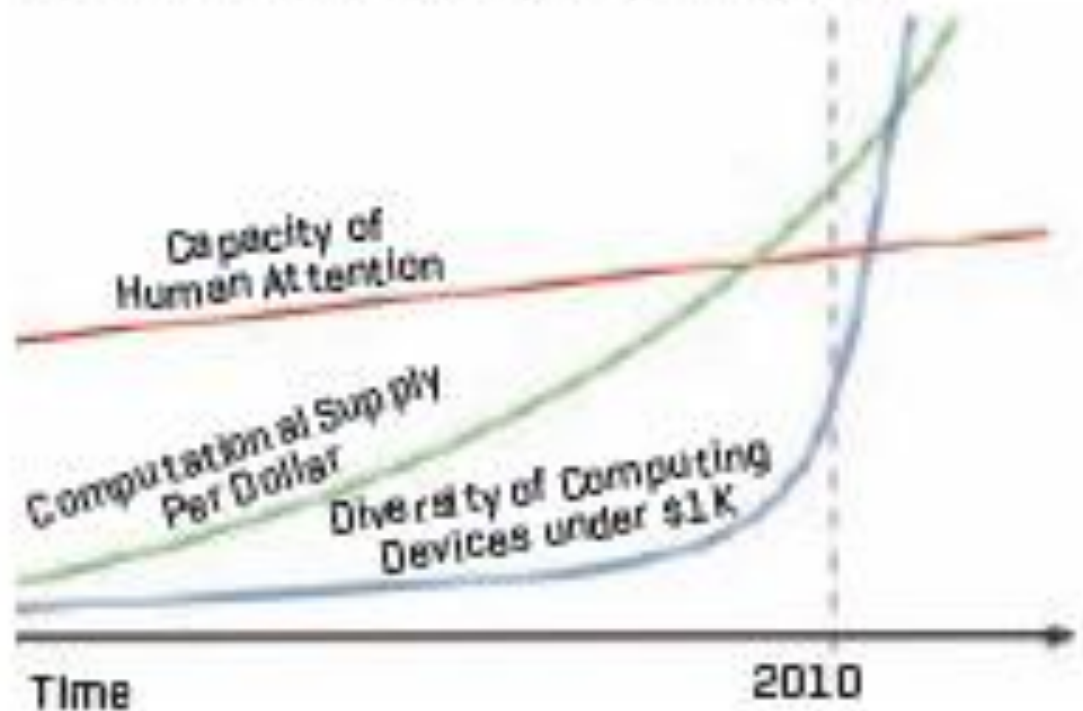


# Element Interactivity & Interfaces

While computing has advanced exponentially, almost explosively, since the 1970s, input devices have only just begun to change. Why?

*By Johnny Chung Lee*

**Figure 1: The rise of diversification was a result of a computational surplus.**



# 4 Hurdles

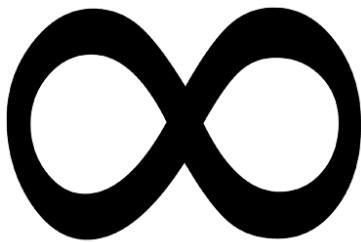
Small Screens



Awkward Input



Download Delays



Mis-designed Sites



# mLearning Landscape

5 billion+ mobile phones

5,000+ different devices

30+ web browsers

Carrier controlled ecosystem

Limited input or output

Limited guidelines/resources

“No Standards”

“Not the Web”

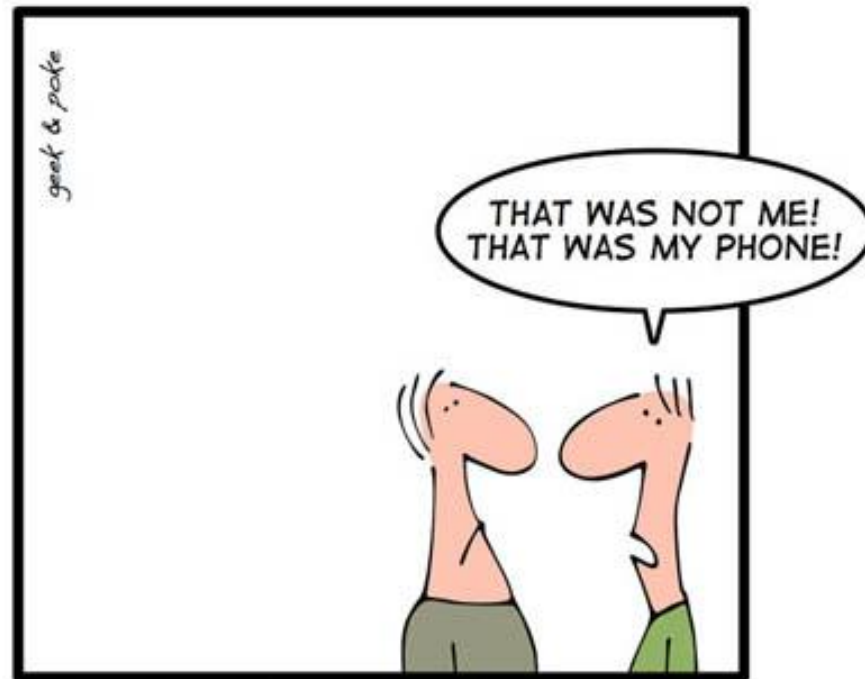
Fling (2006)



# Mobile Phone offers easy Social Affordances

African Proverb "Ubuntu"  
& Durkheim:

- People are people through other people
- Portable community
- Socially connected =  
Always on, always available



*THE RELEASE OF "IFART MOBILE" MADE IT CLEAR:  
A PHONE IS NOT ONLY FOR PHONING*

# iPad caters for more Learning Styles / Needs

## Visual/spatial

Pictures, images and spatial understanding

## Aural (auditory/musical)

Sound and music

## Verbal (linguistic)

Words, both in speech and  
writing



# Learning Styles / Needs (cont.)

## Physical (kinesthetic)

Body, hands and sense of touch

## Logical (mathematical)

Logic, reasoning and systems

## Social (interpersonal)

In groups with other people

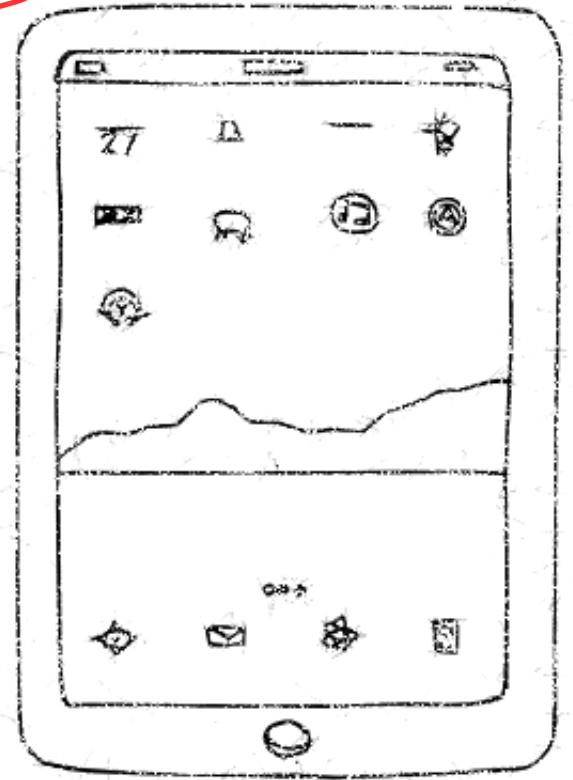
## Solitary (intrapersonal)

Alone and in self-study



# 15 New Learning Applications for Mobile Devices

1. Texting: Micro-blogging and SMS Broadcasts
2. Data Collection
3. Feral Learning with Cloud Computing
4. Augmented Reality
5. Mobile Gaming and Virtual Worlds
6. Contextual learning - personalization
7. Rich Media Production/Playback
8. Performance support and coaching
9. Multimodal Inputs – “Mashups”
10. Portable communities
11. Environmental Control
12. Haptic Feedback
13. Collaboration
14. Self-organized collective behavior
15. First person Assessments





# Other Findings

## Mobile Sites Beat Full Sites



## Better Phones Perform Better

Feature phones	38%
Smartphones	55%
Touch phones	75%

## Slow Progress?

Task	WAP phones (2000)	Current phones
Find the local weather for tonight	164 sec.	247 sec.
Find what's on BBC TV 1 tonight at 8 pm	159 sec.	199 sec.

# iPads and Tablets for reading ... and writing

Majority of the studies tended to place greater emphasis on the features of the mobile devices and procedures for using them, rather than on the **theoretical rationale** or justification for using them.



# Promising pedagogical pursuit



Informed by Educational Theory and Practice

# Theories

- **Behaviourism** – activities that promote learning as a change in learners' observable actions
- **Constructivism** – activities in which learners actively construct new ideas or concepts based on both their previous and current knowledge
- **Situated cognition** - activities that promote learning within an authentic context and culture
- **Collaborative** – activities that promote learning through social interaction  
Informal and lifelong – activities that support learning outside a dedicated learning environment and formal curriculum
- **Cognitive load** (Sweller), Split Attention, Schema Theory (Mayer)
- **Situated cognition** - activities that promote learning within an authentic context and culture

## » iPads in the Classroom



After several months of testing iPads, public schools in Chicago see multiple enhancements in teaching and learning.

iPads  
By Jessica B. Mulholland  
Strengthen  
Education

04:02

AUTO

March 29, 2011 By Jessica Mulholland

# Pros

- Ease of use – students noted the touch-screen
- lack of boot-up lag time

- Cheaper than all books combined
- Storage
- Track student reading

Mobility - iPad could be passed around among a group of students during collaborations and group studies

Variety of apps – the graphic calculator app and other programs received praise from students in the math course pilot

# Cons

- Getting faculty to adopt the emerging technology
- Digital immigrants and sharp learning curve

- Distracting internet surfing and game playing
- iPads requiring repair

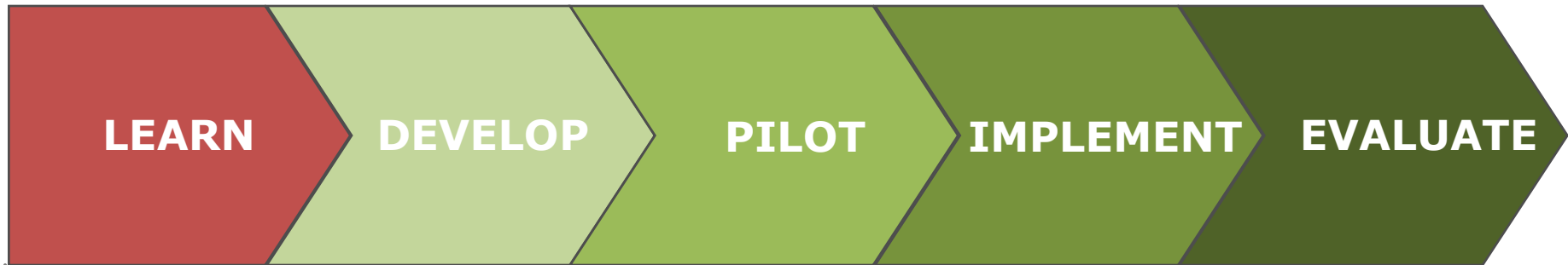
Work with faculty to clarify learning outcomes and how tablet device can help

Additional time and support to identify and aid Instructor's teaching style and help them choose apps to support the existing lesson structure

# Best Practices – Have Fun!

- Establish FAQs & Responsible Use Policy
- Track app usage, which apps are most used and most effective.
- Be flexible
- Consistent workflow apps (Dropbox)
- Keyboards
- Have teachers share best practices at staff meetings.





## **Complex Mix:**

Forms of Mobility x Technologies x  
Learners x Contexts x Teachers x  
Methods x Content/Activities x  
Carriers x Design Processes



# How to setup iPads for the Classroom



**Uniform Devices**

**Setup**

**Set a Pin**

**Remove App Store**

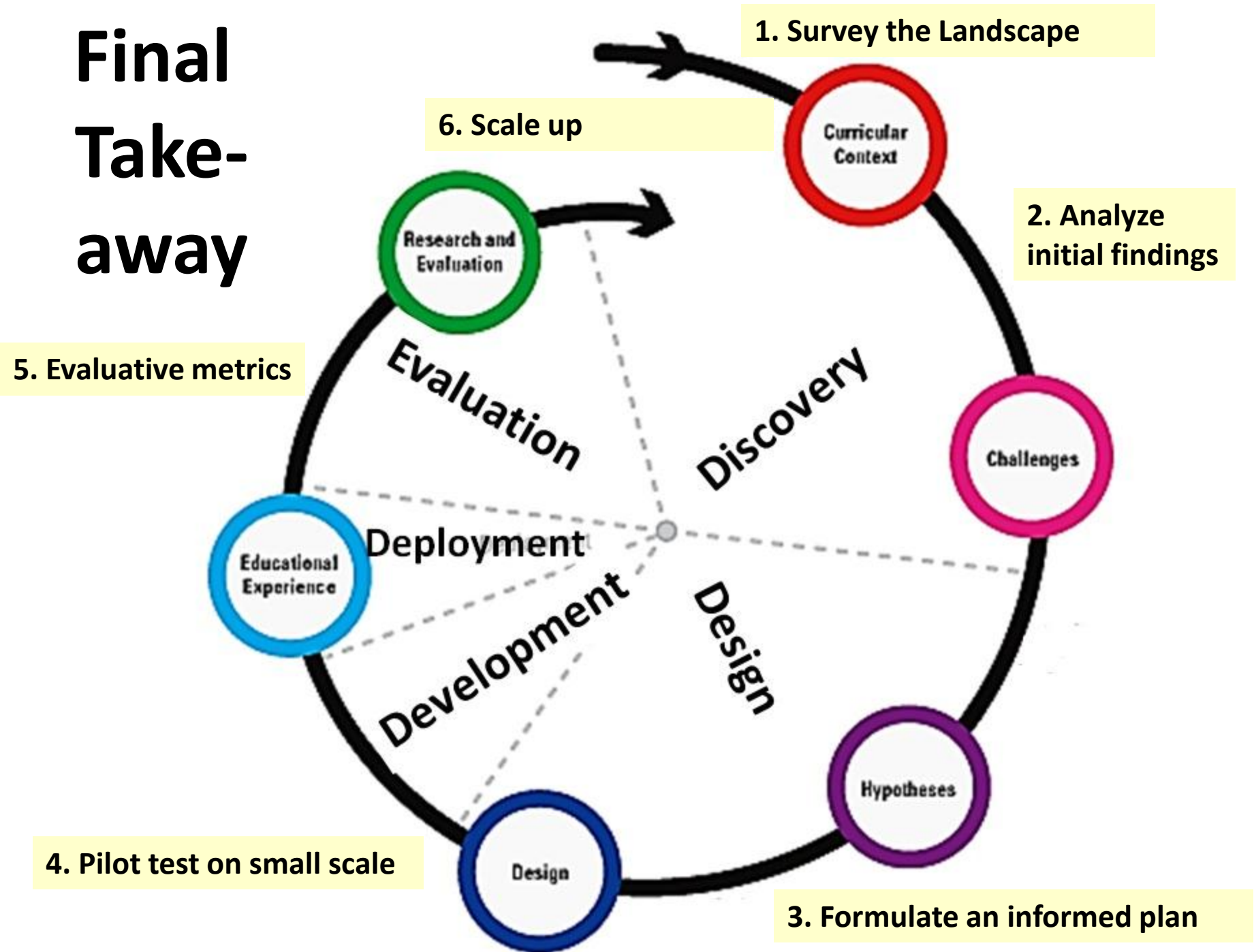
- Quick, customizable Adjustments
- Hiding unneeded apps
- Blocking R-rated videos

- General tab
- Look for Restrictions

- Prevent students:**
- Buying apps
  - Installing & Del Apps

- Gadget Tracking
- Numbering
- Restrictive settings
- Protective gear

# Final Take- away







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