Engaging Faculty: Observations from ACU's Mobile Learning Initiative

Campus Technology 2011

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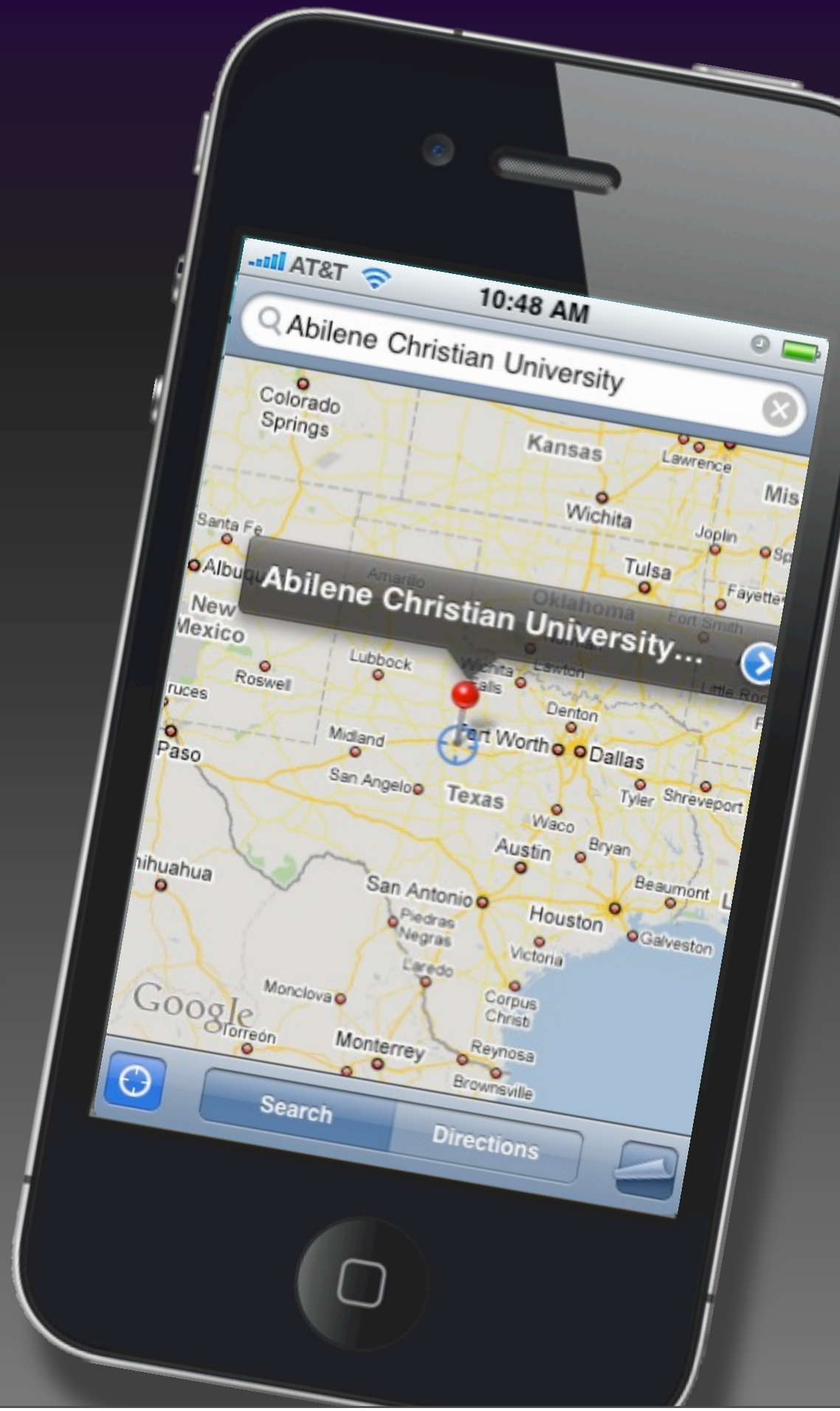
who is ACU?

- more than 4,700 students from 49 US states & 42 countries; approximately 260 full-time faculty
- 5 colleges, 100 fields of study, 61 bachelors' degrees, 26 masters' degrees, 2 doctoral degrees
- #1 up-and-coming university & 2nd in commitment to teaching in the western US, ranked 19th western regional US university overall according to *US News & World Report*

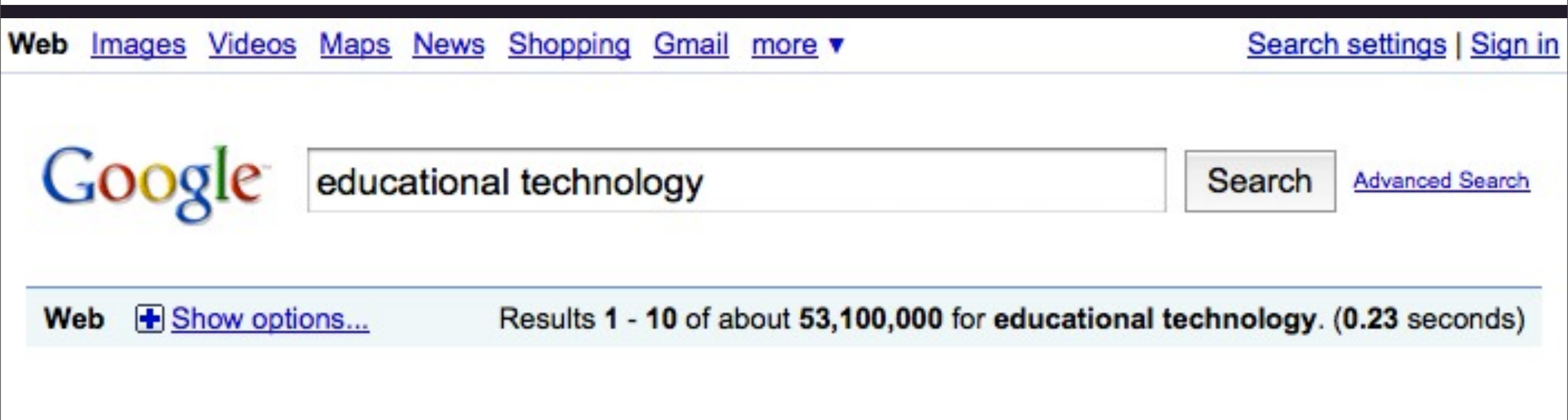


1 *the challenge facing faculty*

the greatest challenge of
the digital information age?

the greatest challenge of
the digital information age?

assessing information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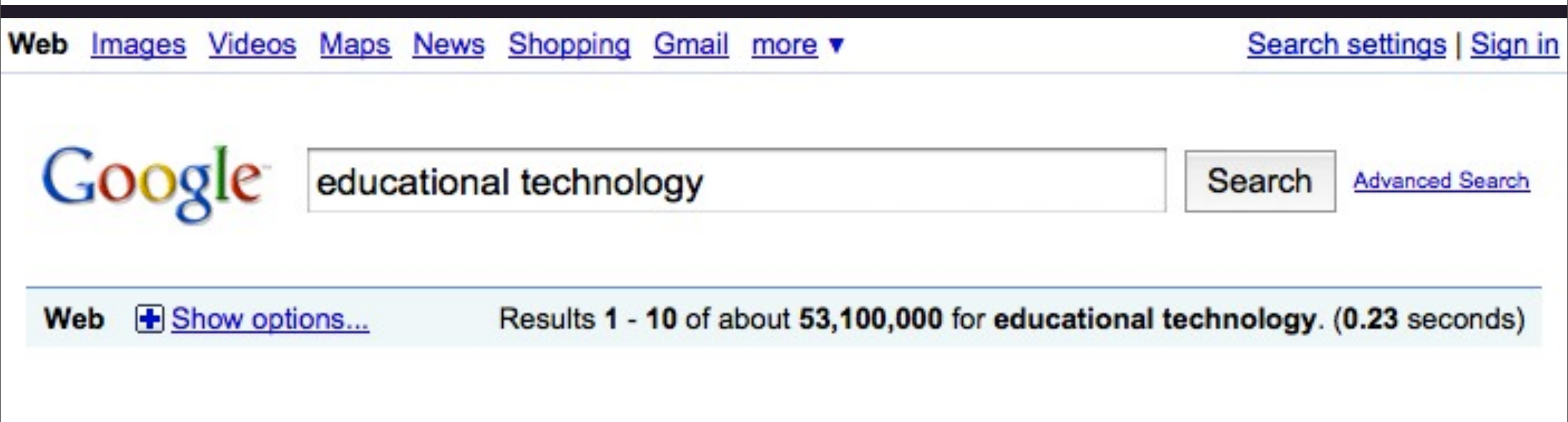

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If I imagine my primary job as a teacher is to serve information, am I helping solve the current informational problem or make it worse?

And given the vast complexity of the informational network, if I insist on my centrality, does that establish or harm my credibility as a teacher?

If assessing information – and the wisdom & experience that requires – is the central challenge of the current informational age, are teachers more or less necessary?

mobile learning at ACU

assessing trends

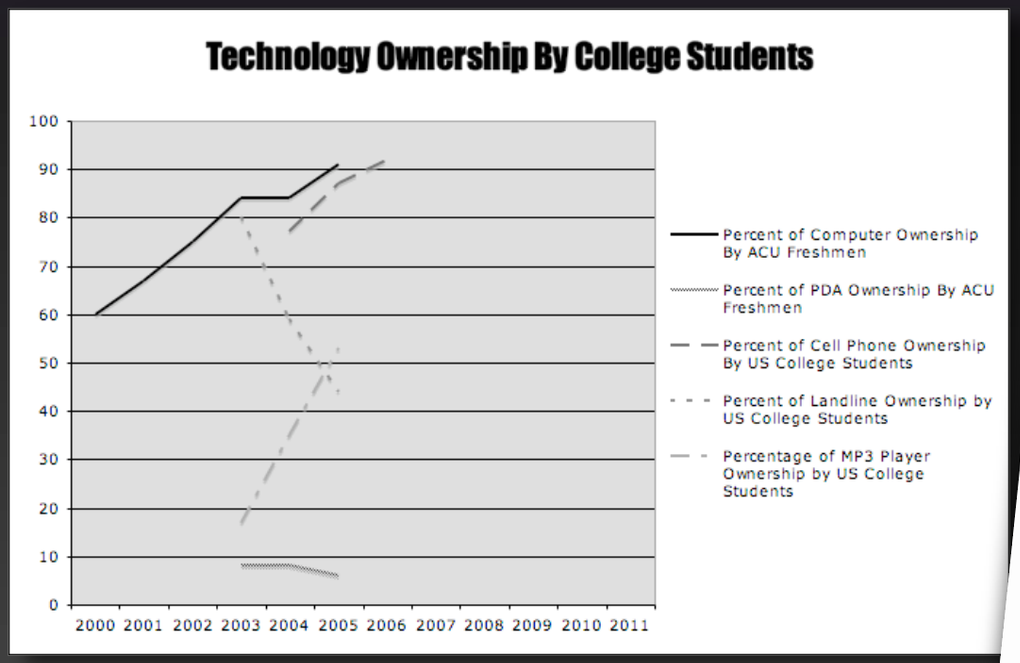
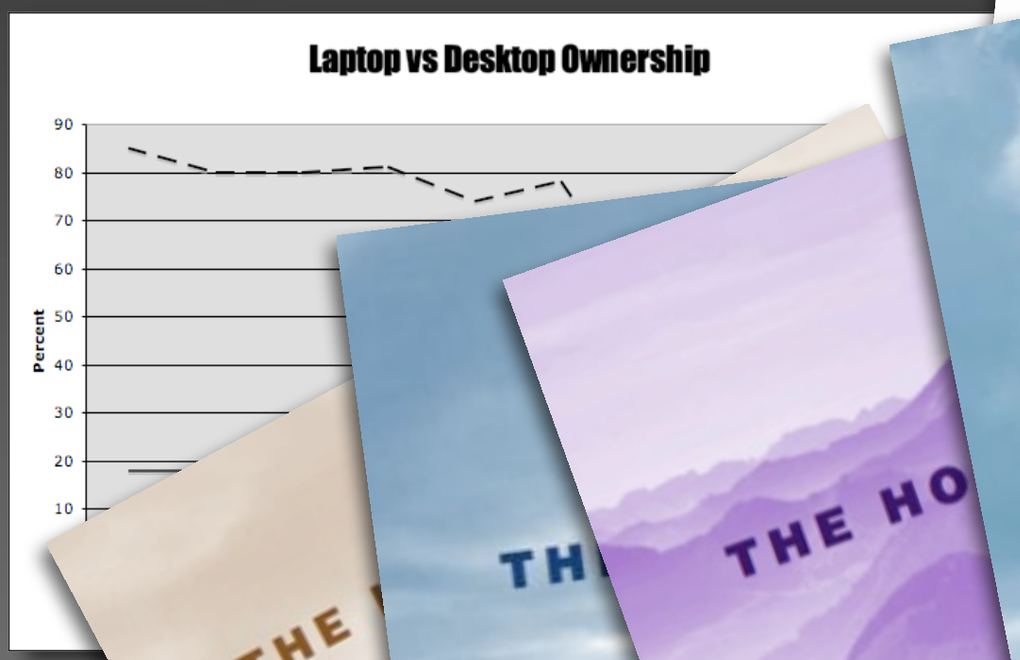
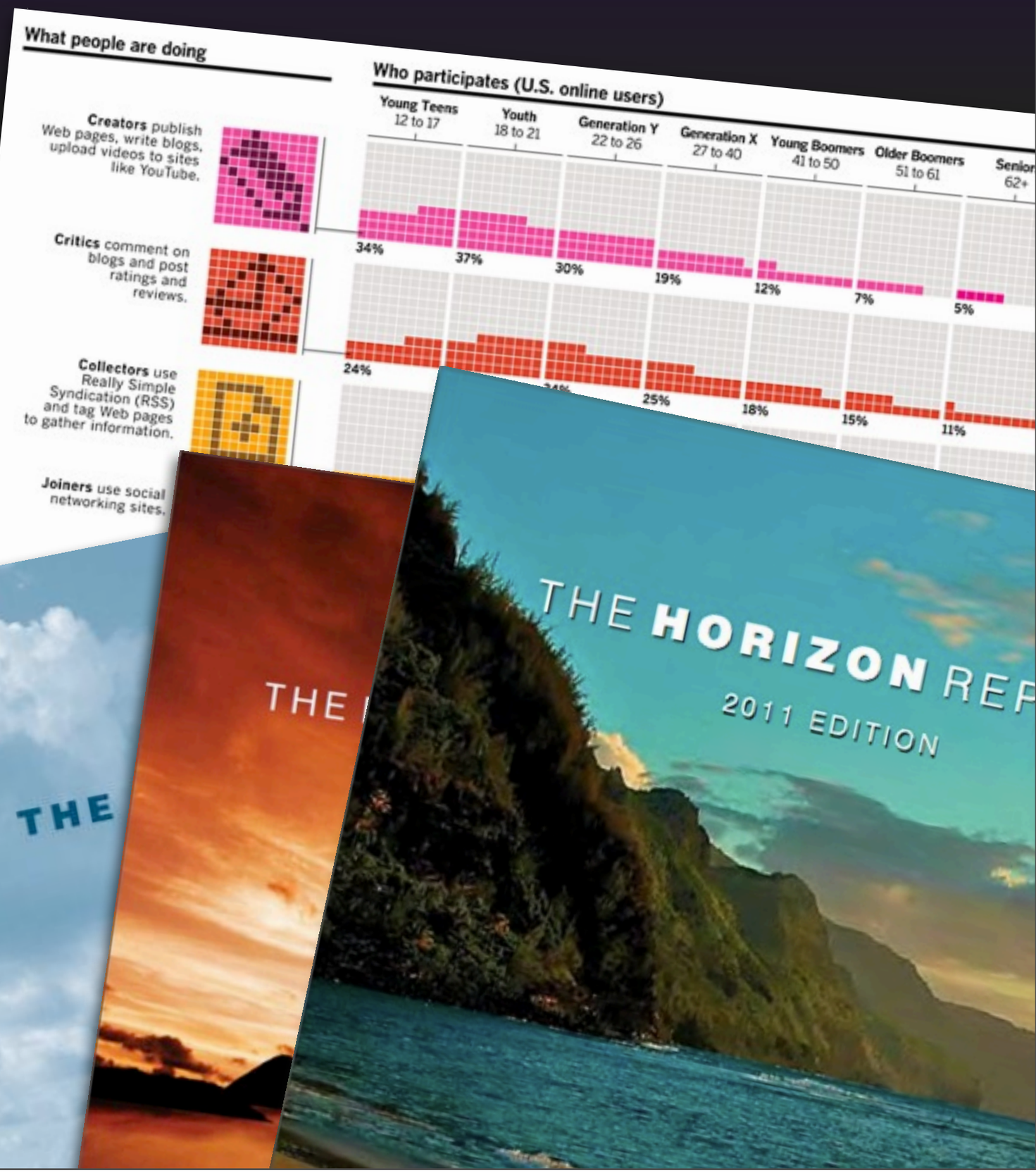


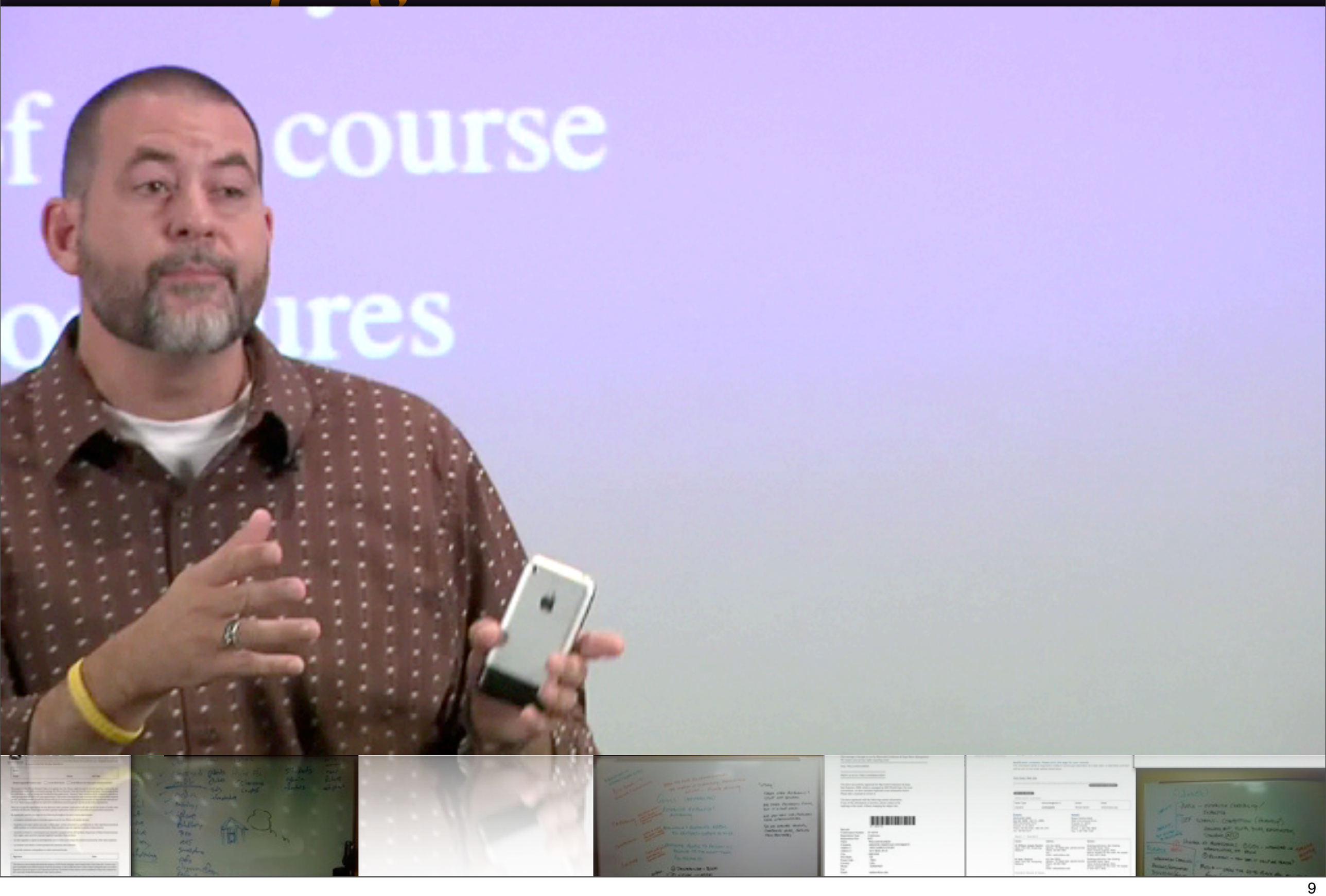
Figure 1





developing a vision…

developing a vision…



educational trends

educational trends

rich media

educational trends

rich media

social connections

educational trends

rich media

social connections

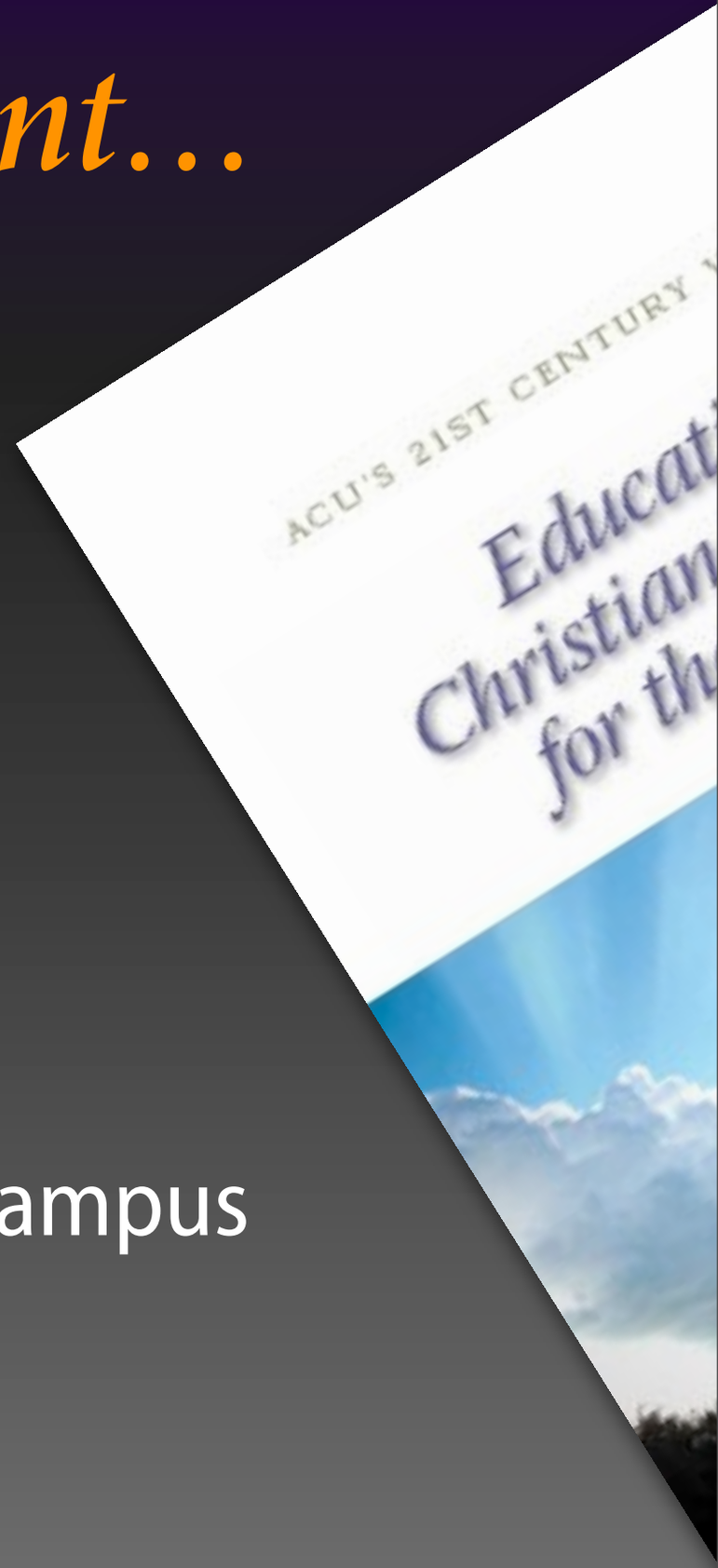
content access

educational trends

mobility

goals for initial deployment…

- focus on student learning
- increase student engagement
- promote university awareness
- advance undergraduate enrollment
- foster a culture of innovation on our campus



innovation cycle

innovation cycle

faculty
students programmers
staff **deployment** pilot
technologists

service
learning out-of-class

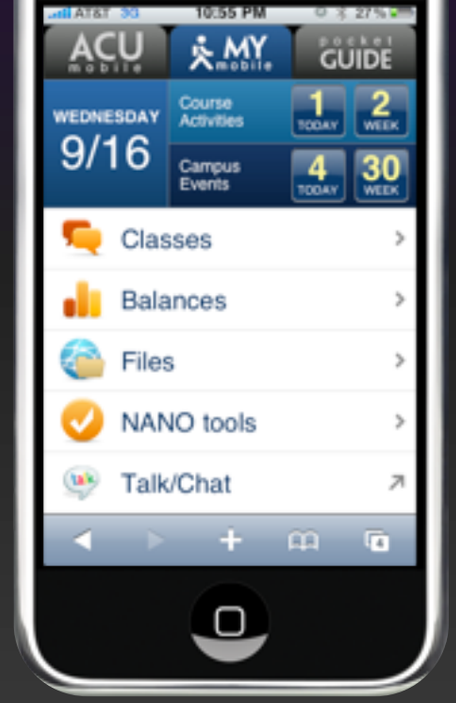
experimentation

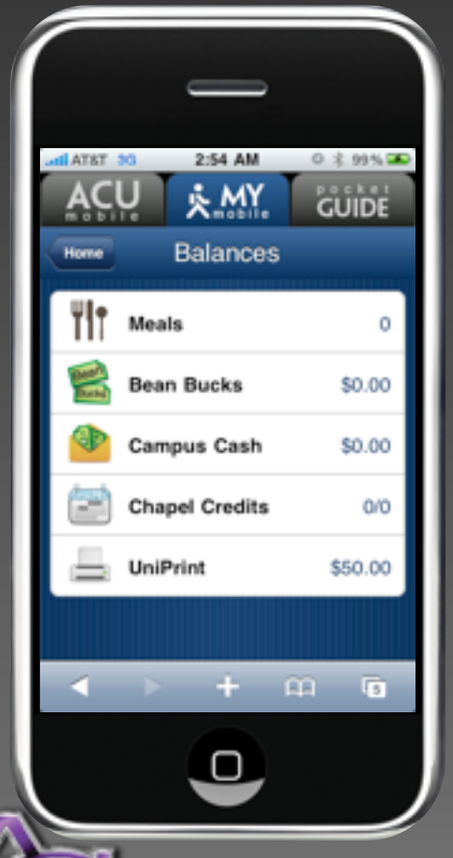
existing apps programming
commercial development
in-class

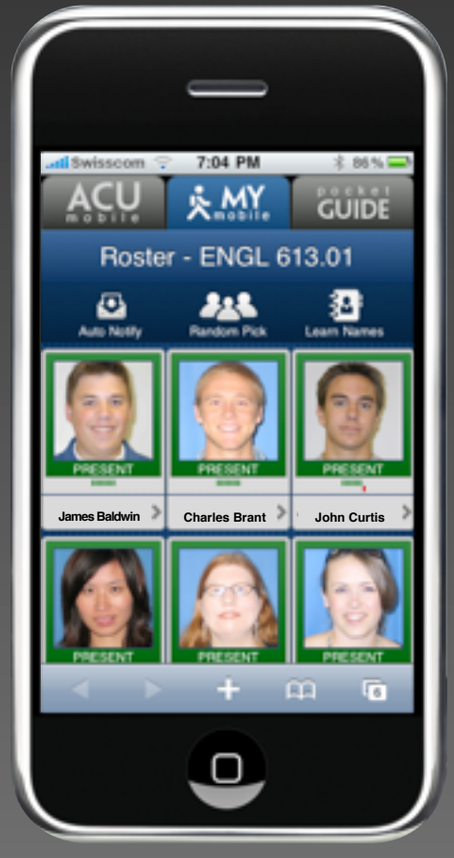
significance

media conferences
awards presentations
best practices

papers consulting







try the mobile portal at m.acu.edu

advisory boards & projects

advisory boards & projects

Apple

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SUNGARD HIGHER EDUCATION

TALISMA

exploring mobility

"Last fall, Abilene Christian University gave out free iPhones or iPod Touches … to transform its campus into a 200-acre Petri dish for studying the intersection of mobile technology and higher education."

Steve Kolowich, "The Mobile Campus," *Inside HigherEd*. 21 September 2009.

3 *engaging our faculty*

emphases of ACU's mobile program

- voluntary faculty involvement
- focus on engaging students
- encourage innovation and experimentation
- challenge faculty to expand class-related learning strategies
- create a test bed for mobile learning research

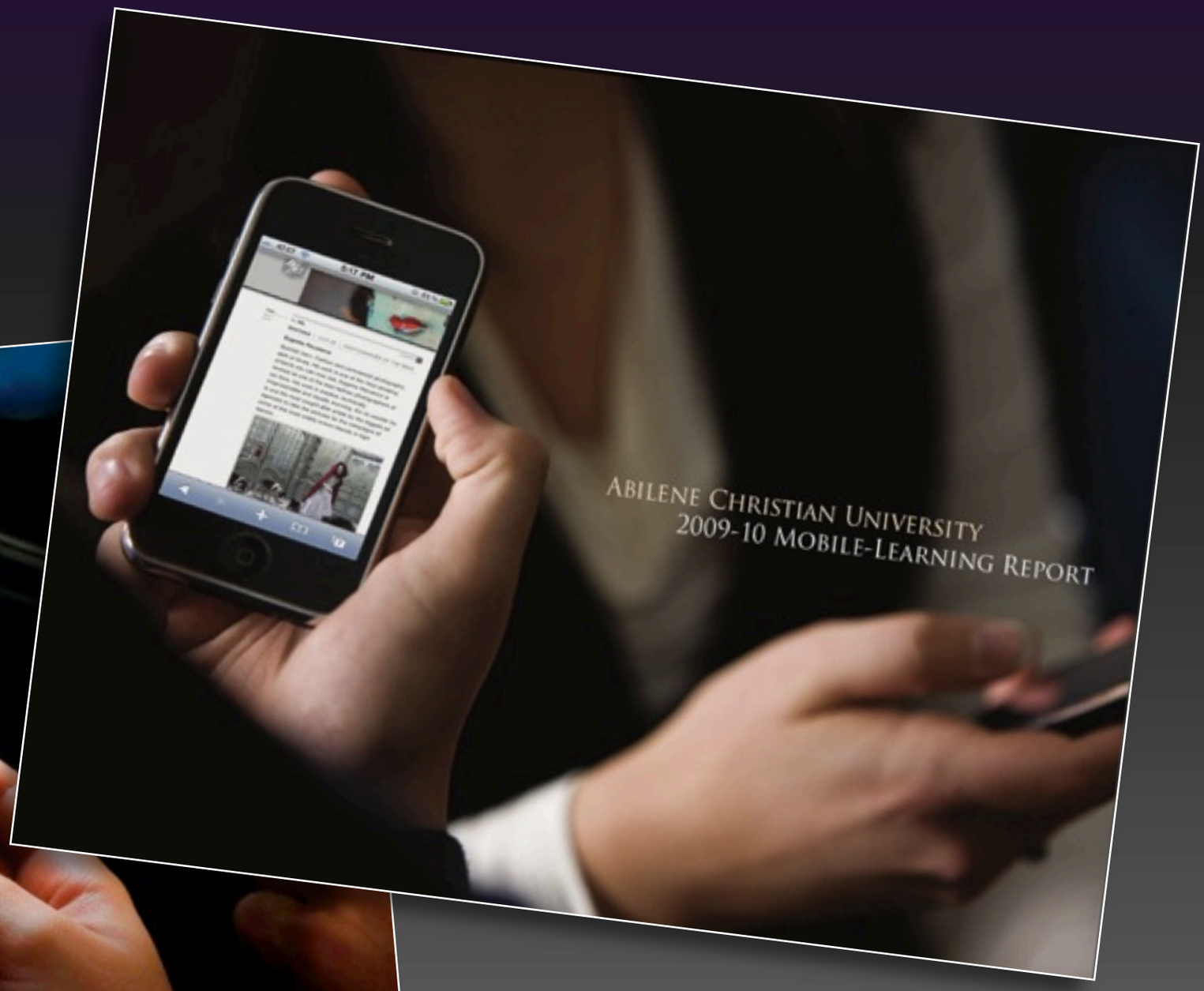
commitment to evaluation…

- thoroughly involve faculty in initiative, from classroom innovation to formal research and assessment
- empirically evaluate all aspects of our program
- strategically plan to carry a leadership role in the mobile learning community
- broadly communicate our results

strategies to engage faculty

- primary constituents of pilot project (2007-08)
- identify emerging faculty leaders
- develop faculty expertise within disciplines
- highlight work of classroom innovators
- internally & externally publicize faculty activity


• Use the pipet to deliver an accurately measured sample to an Erlenmeyer flask
• Add two drops of indicator
• Use deionized water to rinse any sample that may have splashed on the sides into the analyte aliquot
Abilene Christian University
2008-09 Mobile-Learning Report


Abilene Christian University
2009-10 Mobile-Learning Report

faculty response

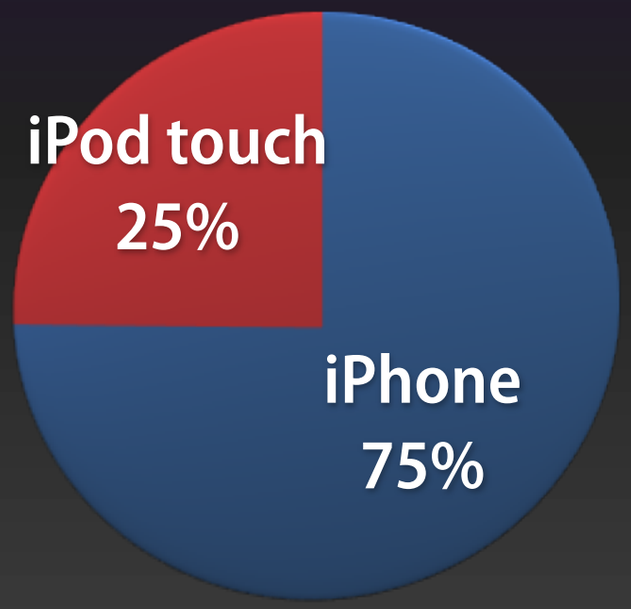
early faculty buy-in (Fall 2007)

more than 70% attended an interest meeting

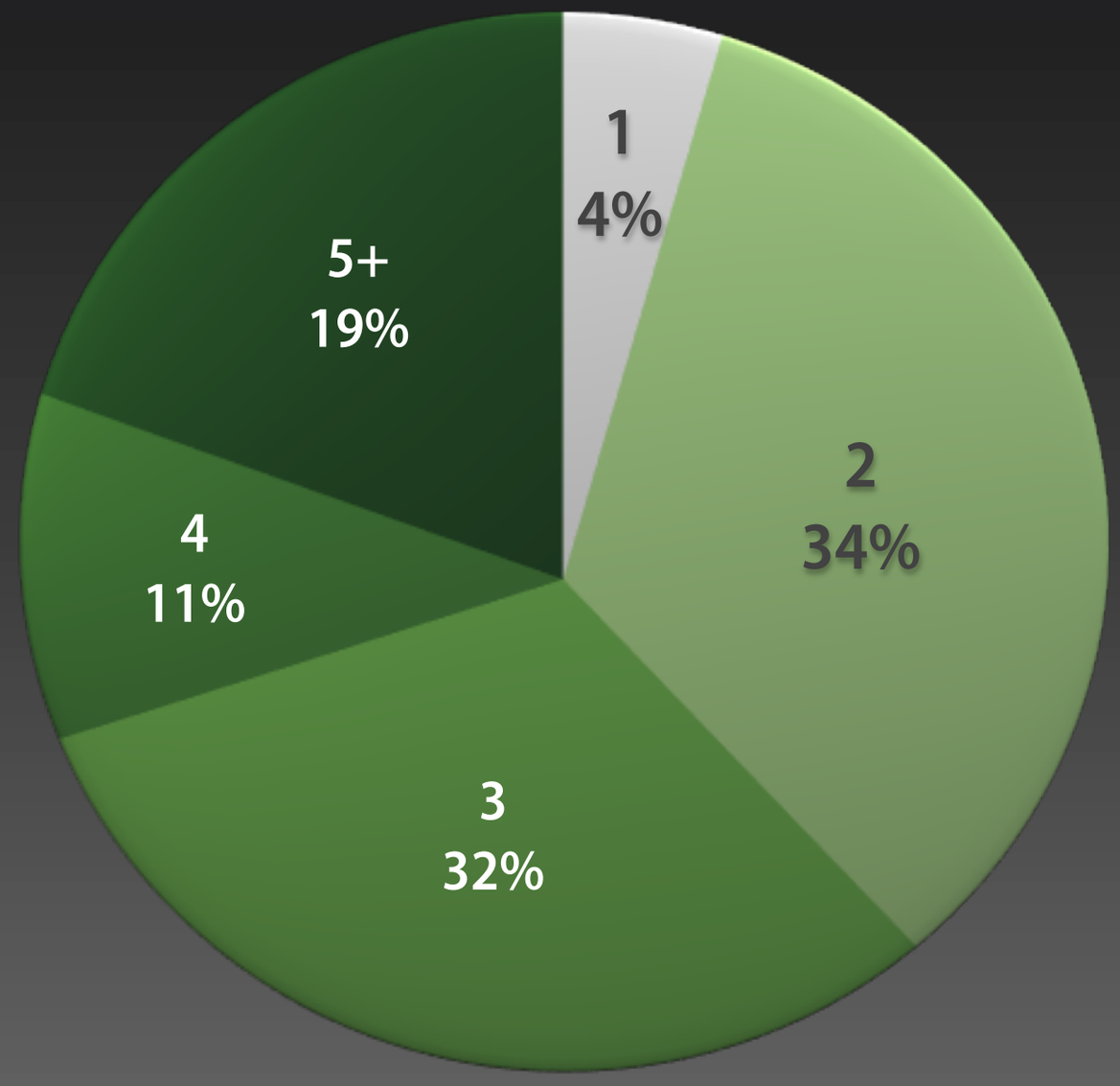
nearly 50% applied for position in pilot project

42 investigated mobile device possibilities

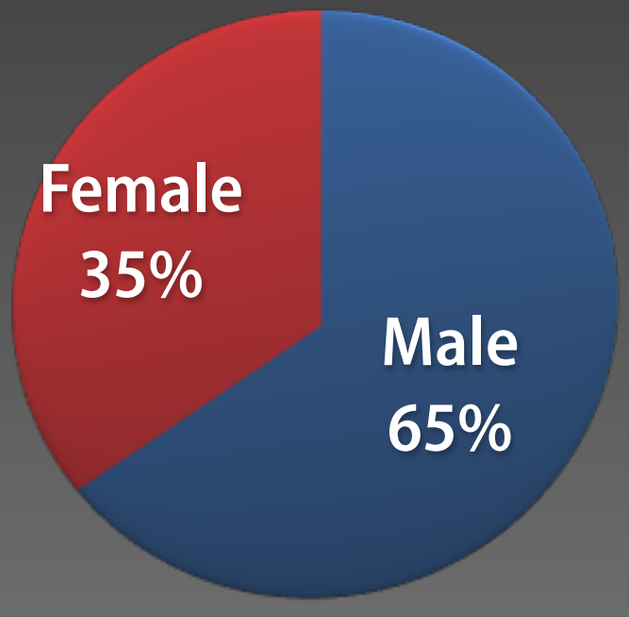
faculty survey: devices & apps (n=109)



Faculty Selection



Number of pages of installed apps



Faculty Gender

acu connected

faculty survey responses

academic year	survey respondents
2008-2009	116
2009-2010	109
2010-2011	145

Source: Annual Faculty Surveys

12% of early-adopting faculty had never owned a mobile phone prior to this initiative

Source: 2010 Faculty Survey

classroom innovation

- art & design
- biochemistry
- business
- management
- chemistry labs
- communication
- education
- information sciences
- mathematics
- psychology
- social work
- sociology
- student newspaper
- theatre

transforming classes with mobility

engaging students during class

- classroom app use, live internet searching
- collaborative and interactive learning activities
- student-directed and just-in-time strategies

extending learning outside the classroom

- expanding class time via course blogs and podcasts
- increased faculty-student communication
- collaborative projects

faculty adoption of blogs...

Fall 2009 (including Univ 100):

328 course blogs -189 faculty (3,189 students)

Spring 2010:

255 course blogs - 145 faculty (2,736 students)

Fall 2010 (including Cornerstone):

335 course blogs -187 faculty (3,339 students)

Spring 2011:

249 course blogs - 156 faculty (2,840 students)

Source: ACU Information Services

Our goal is to have every teacher using a mobile tool at least once a week

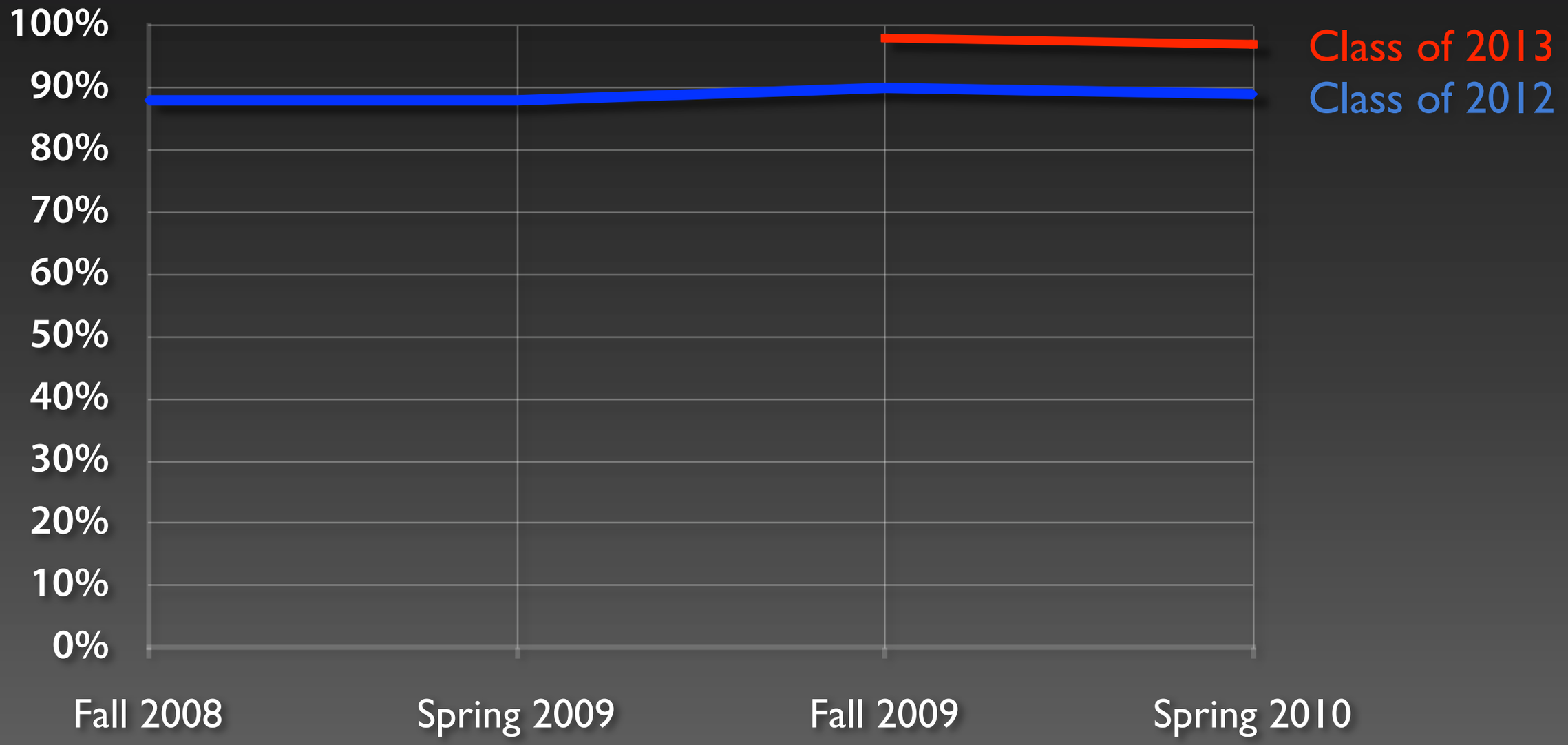
— mobile learning leadership team

faculty experimentation

in year one (Fall 2008)	two years later (Fall 2010)
50% of of faculty have device	near saturation of faculty with devices (over 95%)
program evaluation initiated	faculty experimentation, utilization and innovation
7 formal research projects conducted	30+ formal research projects in 2010-11
many presentations, largely topical	numerous presentations, mostly empirical

4 *what we are learning*

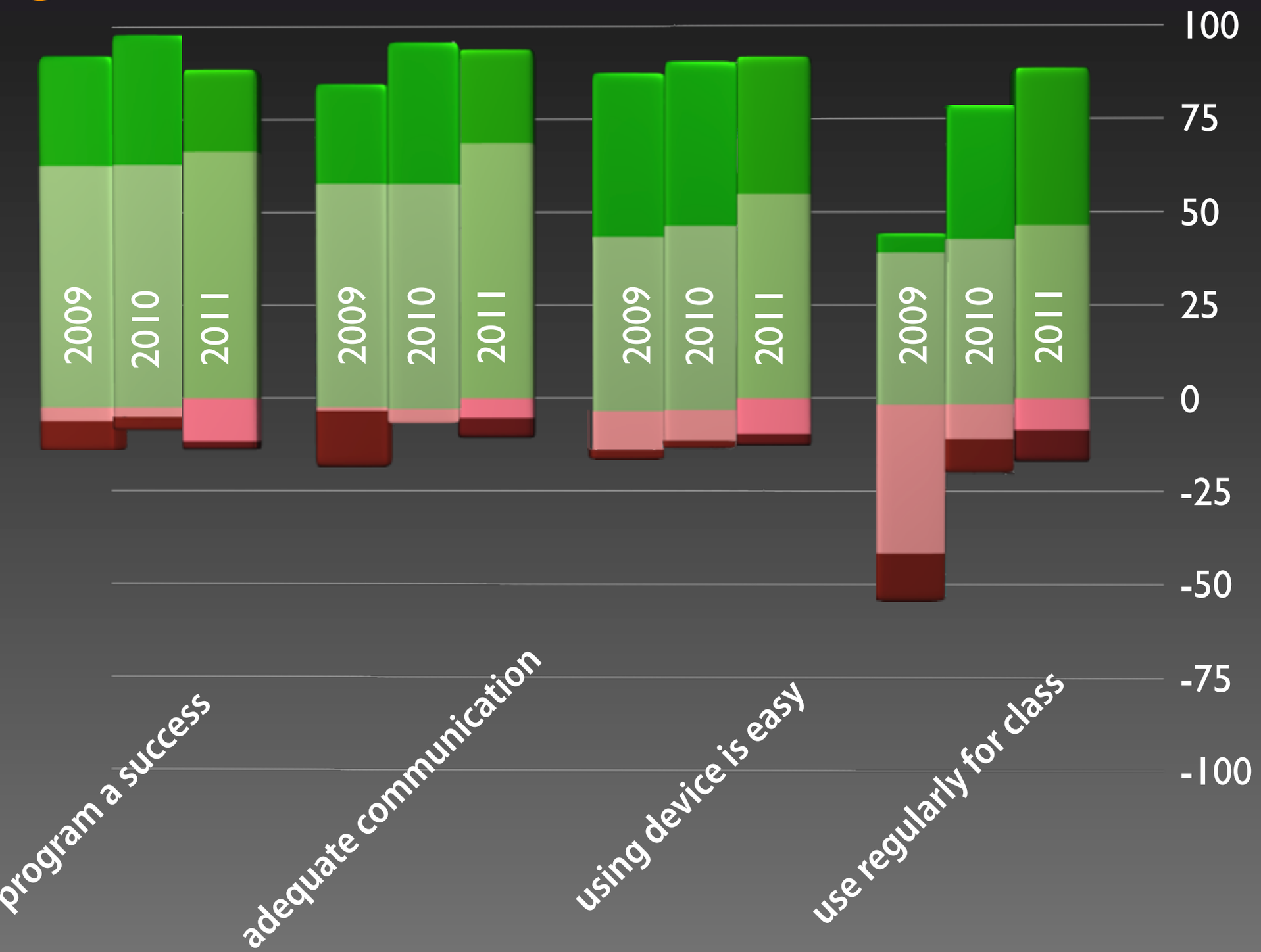
conclusion 1: students are consistently positive about mobile learning



Percentage of students with positive attitude:
Q: All things considered, I think that using this mobile device as part of my college experience is...

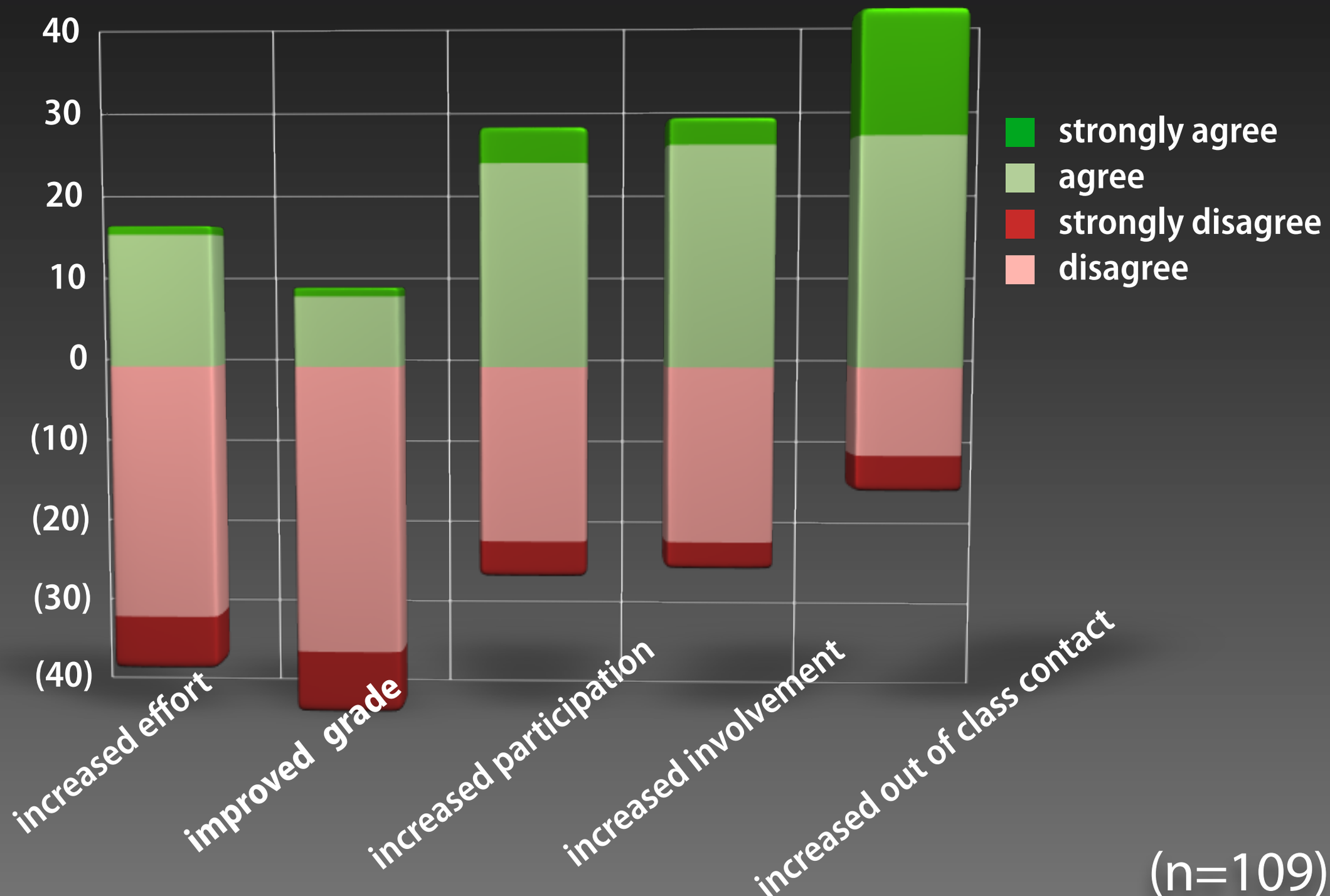
Source: Dr. Brad Crisp

conclusion 2: faculty consistently rate program a success



Source: Annual Faculty Surveys

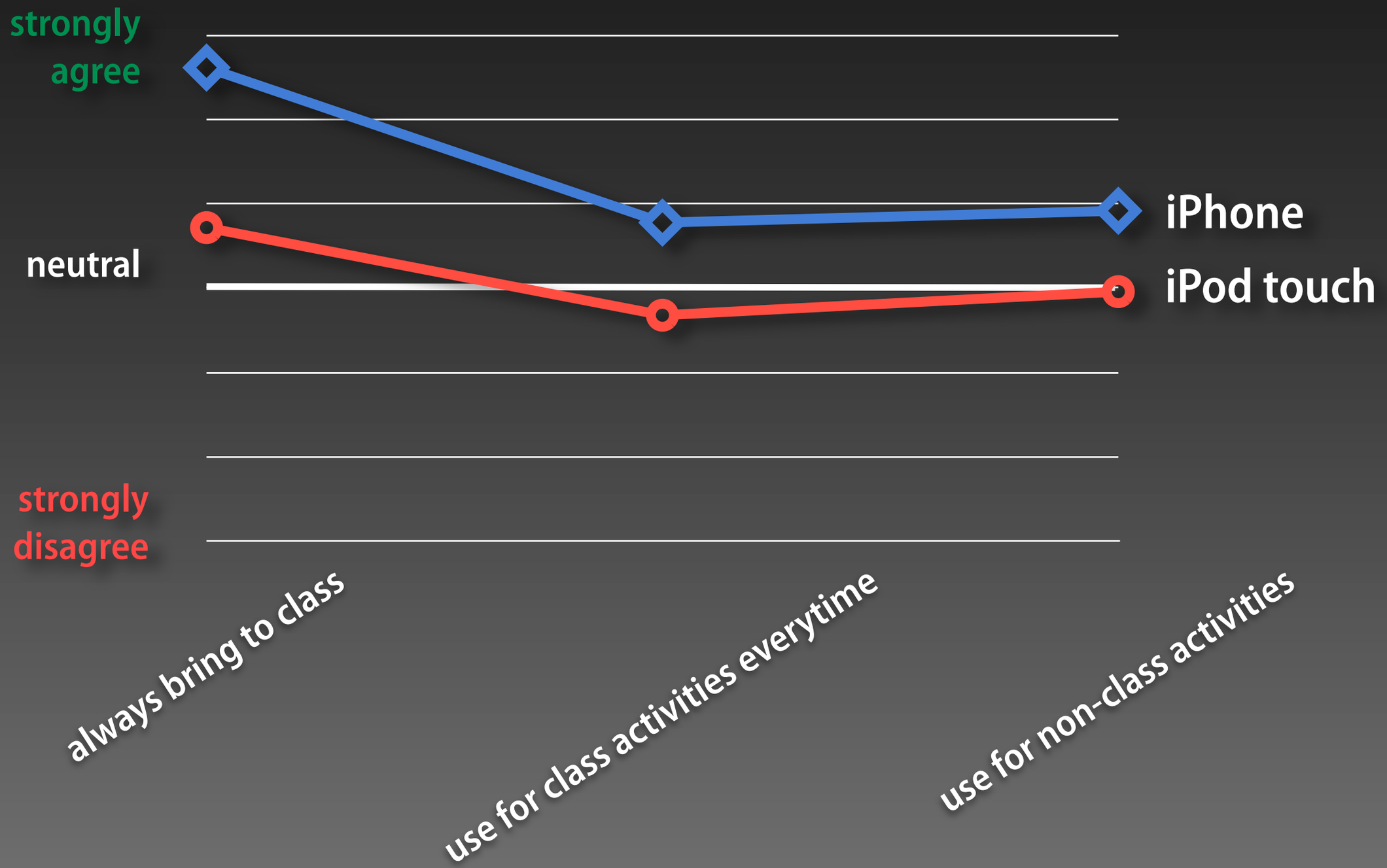
conclusion 3: students are engaged



(n=109)

Source: 2010 Faculty Survey

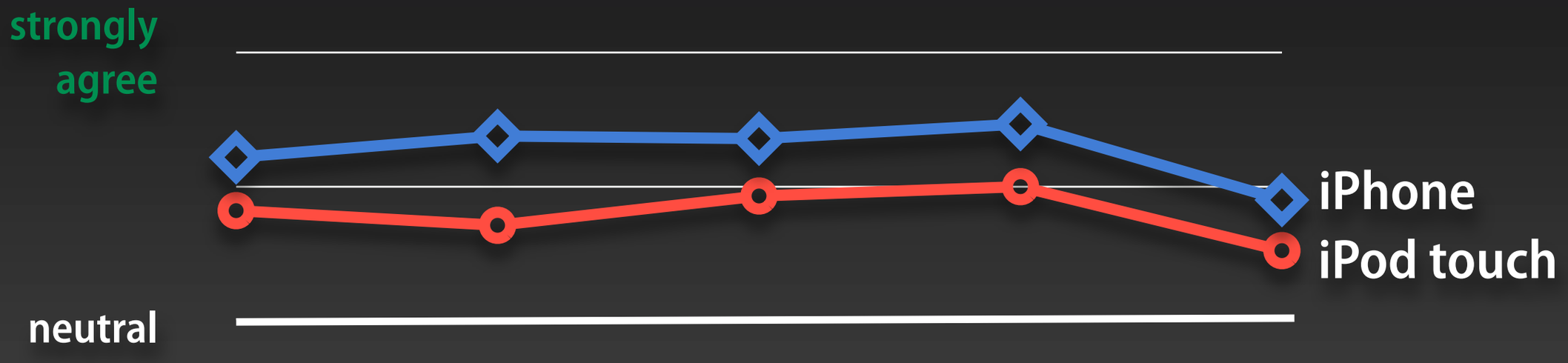
conclusion 4: attitude, impact, and usage vary by **device** *(students)*



Source: 2008 Student Survey

(n=243)

conclusion 4: attitude, impact, and usage vary by **device** *(faculty)*



Source: 2009 Faculty Survey

conclusion 5: our faculty are experimenting with mobile learning

in year one (Fall 2008)	two years later (Fall 2010)
50% of of faculty have device	near saturation of faculty with devices (over 95%)
program evaluation initiated	faculty experimentation, utilization and innovation
7 formal research projects conducted	30+ formal research projects in 2010-11
many presentations, largely topical	numerous presentations, mostly empirical

conclusion 6: faculty report significant class-related use of mobile devices

84% regularly use a device for in-class activities

72% use of the mobile attendance tool

39% report using Blackboard on device

90% comfortable with required class usage for students

50% of regular class users use in each class meeting

82% have students conduct in-class internet searches

Source: 2010 Faculty Survey

n = 145

conclusion 7: students perceive positive academic impact

96% carry to class daily

86% improved classroom collaboration

90% helps to accomplish things more quickly

87% improved communication with teachers

87% increased control of learning environment

Source: 2010 Student Survey

(n=755)

major lessons…

- students and faculty embrace use of mobility in higher education
- iPhones initially have offered distinct advantages over iPod touches, but is this a time-specific/general result?
- what activities will tablet devices dominate in the future?
- ubiquity is essential, we thought, and is hard to attain
- don’t underestimate bandwidth requirements

5 thinking about technology

question 1: how do mobile devices impact learning?

learning outcomes

student engagement

in-class activities

out-of-class activities

question 2: what factors are shaping impact of mobile devices on learning?

tech support and infrastructure

availability and ubiquity of devices and network

device features, apps, usability

faculty ownership, familiarity

faculty development and best practices

question 3: what place do consumer mobile devices have in education?

emerging

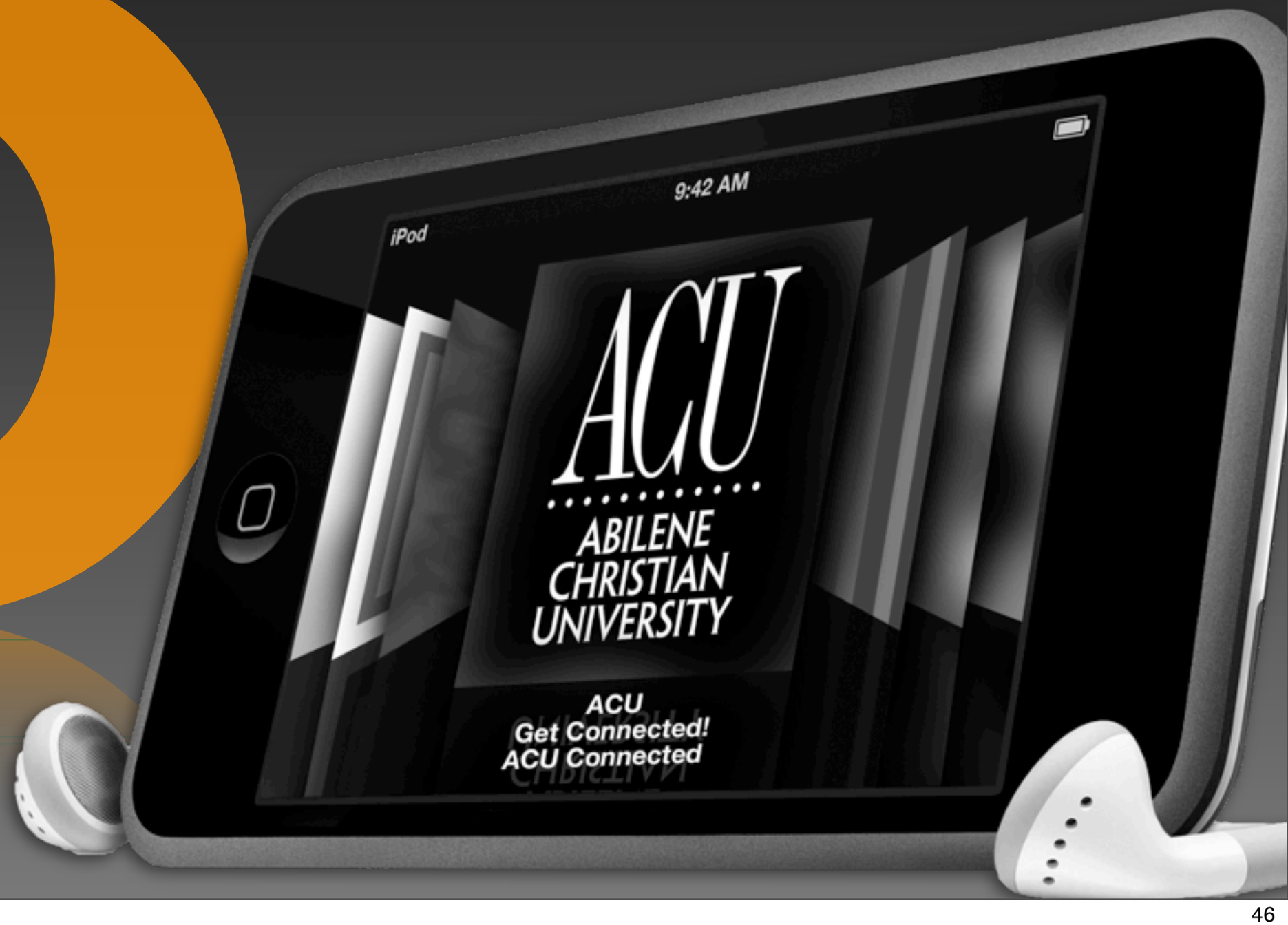
expected

obsolete


The New York Times - Breaking News, World News & Multimedia
www.nytimes.com/
The New York Times
Obama Orders Improvements in Security Policies
Alabama Holds on to Win Championship
Europe on a frugal budget
Travel
Search
Plan Your Trip
Happy 1,300th to Nara, Japan

6

what's next


9:42 AM
iPod
ACU
ABILENE
CHRISTIAN
UNIVERSITY
ACU
Get Connected!
ACU Connected

consider the future...

- highly mobile devices are increasing
- learning is extending beyond the classroom
- our need for wireless networking is expanding (especially in K-12)
- states are encourage adoption
- bandwidth is critical

mobility requires…

- space for lots of data
- redesign of campus facilities for mobility & collaboration
- infrastructure for synchronous & asynchronous access
- infrastructure for all-the-time / everywhere learning
- infrastructure for creation & participation
- bulletproof, fast, pervasive networking
- extension of services & reach beyond campus
- killing old technologies & initiatives

researching the future of education

- evaluate both engagement and performance
- nurture innovative research
- investigate digital texts
- get serious about incorporating media
- redefine academic peer-evaluation
- demonstrate interactivity and relevancy
- collaborate and share results

researching student learning

- mobile-enhanced, inquiry based instruction in the science lab
- using augmented reality to enhanced learning of form and structure in 2-D Art & Design class
- comparing reading comprehension and learning efficiency across paper and tablet readings in psychology

chemistry lab results: there are no performance differences between podcast and lecture groups

	Podcast treatment n = 81	Lecture treatment n = 51
Lab Reports	91.6 ± 6.74	90.61 ± 5.83
Quizzes	78.79 ± 11.49	75.84 ± 12.33
Lab Final Exam	72.38 ± 13.56	73.21 ± 11.43
Lab Course Grade	87.09 ± 7.91	85.92 ± 6.66

No category shows a statistically significant difference at the $\alpha = .05$ level

Source: Dr. Cynthia Powell

yet, highly motivated students performed at a higher level with access to podcasts

"Highly motivated"	Podcast treatment n = 33	Lecture treatment n = 20
Lab Reports	95.99 ± 2.74	91.80 ± 4.45
Quizzes	86.95 ± 6.56	79.44 ± 11.00
Lab Final Exam	83.24 ± 6.91	79.45 ± 10.28
Lab Course Grade	**93.64*** ± 3.13	**88.72*** ± 5.93

* ANOVA and Tukey Post-Hoc tests indicate that these values are statistically significantly different at $\alpha = .05$ level

Source: Dr. Cynthia Powell

enhancing art student learning with AR

Near transfer	n	mean	sd	t-value	p-value
Comparison	20	10.25	8.18	-2.36	0.024
Focus AR	16	17.75	12.47		
Far transfer					
Comparison	20	6.05	5.02	-0.314	0.004
Focus AR	16	15.07	11.50		

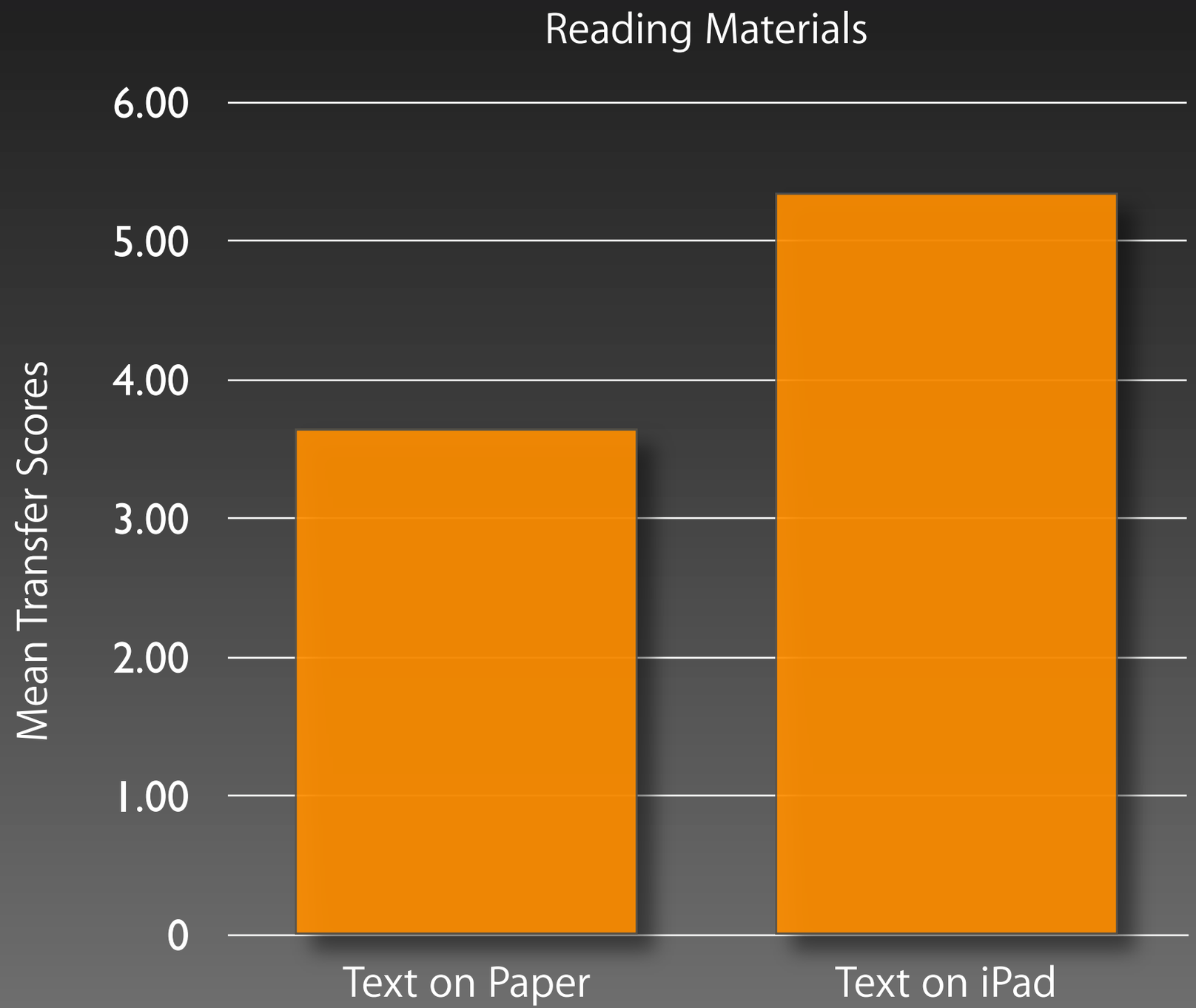
Source: Dr. Kenny Jones

reading on tablets vs traditional texts

	n	F-value	p-value
Reading Comprehension	20	0.36	0.55
Transfer Learning	20	12.24	0.001

Source: Ryan Gertner

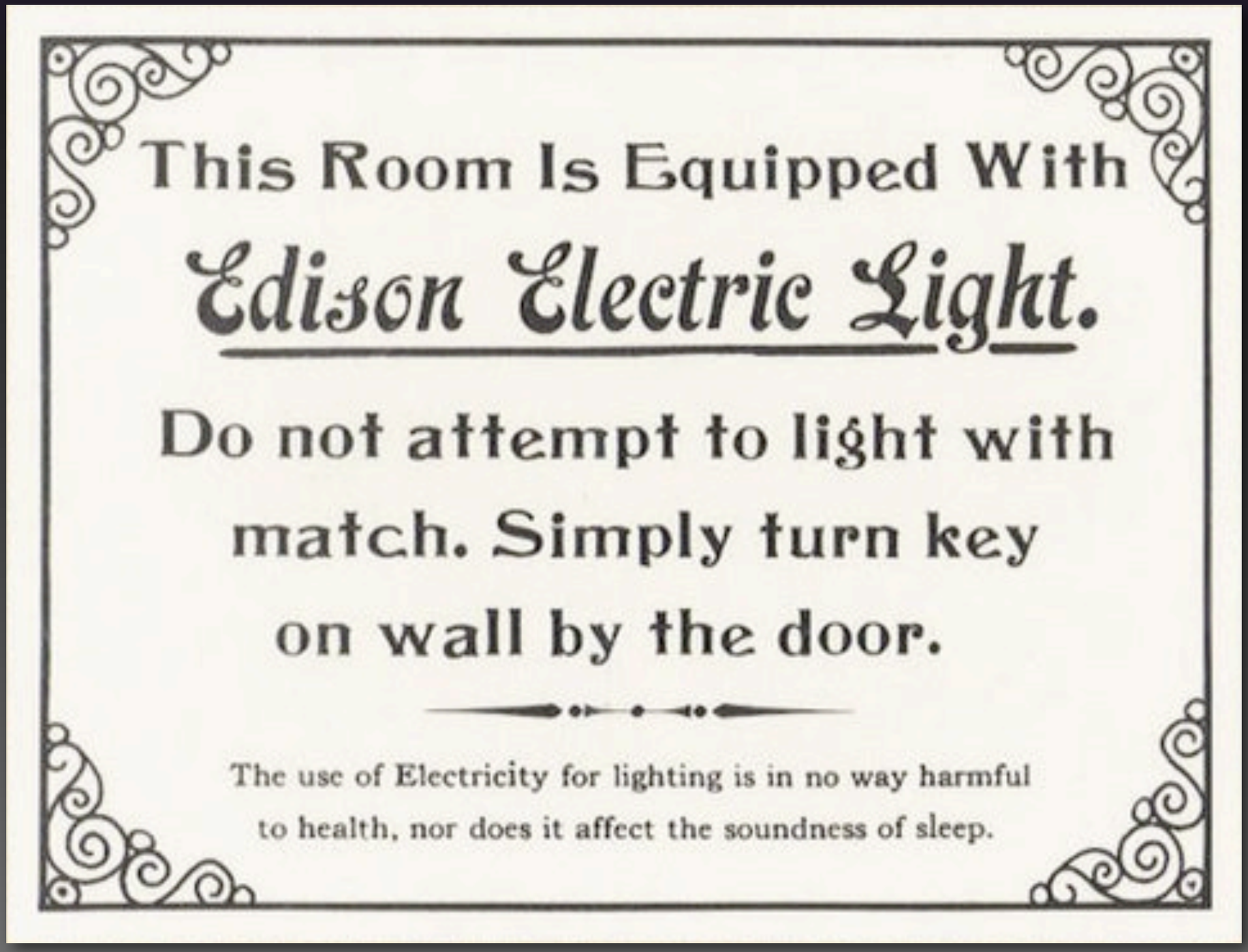
graphical depiction of group means



Source: Ryan Gertner

so what?

any time things change…



Q & A

podcasts & info at www.acu.edu/connected
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