The 21st-Century Campus: Are We There Yet?

Challenges and Opportunities for Campus Technology

October 13, 2008

CDW·G

Introduction

The CDW-G 21st-Century Campus report examines the current and future role of technology in higher education. CDW-G surveyed more than 1,000 college students, faculty and Information Technology (IT) staff members to understand their respective perceptions of campus technology.

The study examines how technology is used on campus today, identifies leaders and barriers, and recommends next steps.

Contents

Executive Summary

- **Wired Yet?: The CDW-G 21st-Century Campus Index rates IT in U.S. higher education**
  - Combines student, faculty and campus IT executive input; U.S. schools are just halfway to 21st-century capabilities such as full technology integration in and out of class

- **Tech Matters: Students believe technology is critical to their education**
  - Nearly all science and business majors, and almost three-quarters of liberal arts majors, say technology matters in their studies

- **Reality Check: While technology matters to students, just 33% of faculty say technology is fully integrated into the educational experience**
  - Professors' lack of knowledge is considered the biggest impediment by faculty and campus IT execs
  - Even professors who have access to technology in every class <u>do not use it</u> in every class
  - Students use technology to *prepare* for class with significantly greater frequency than they use technology *in* class
  - Despite the importance of collaboration in the workplace, 73% of students don't use Wikis; 83% don't listen to podcasts; 88% don't use Web conferencing

- **Bottom Line: Technology matters**
  - Campus technology is an important factor in school selection and workplace readiness
  - Institutions that can elevate professors' technology skills and relate campus technology to future careers will own a marketable <u>competitive advantage</u>

CDW·G

The 21st-Century Campus Index

The 21st-Century Campus Index considers input from students, faculty and campus IT professionals to gauge how well an institution is integrating technology into the educational experience

Methodology

Scores are based on a sum of the weighted average of positive responses for each indicator

Student Indicators

Professors understand technology and it is fully integrated into my classes
Use technology in every class
Always an open seat in computer labs

Faculty Indicators

Technology is fully integrated into my campus; there are no obstacles
Technology is integrated into every class
Satisfied with the technology training I receive

IT Staff/Executive Indicators

Offers one-to-one laptop programs
Offers campus network access
Campus supports:
Distance learning
Blogs
Wikis
Podcasts
Videoconferencing
Web conferencing
Online chat
Course management systems
Laptops
PCs
Social networking
Wi-Fi

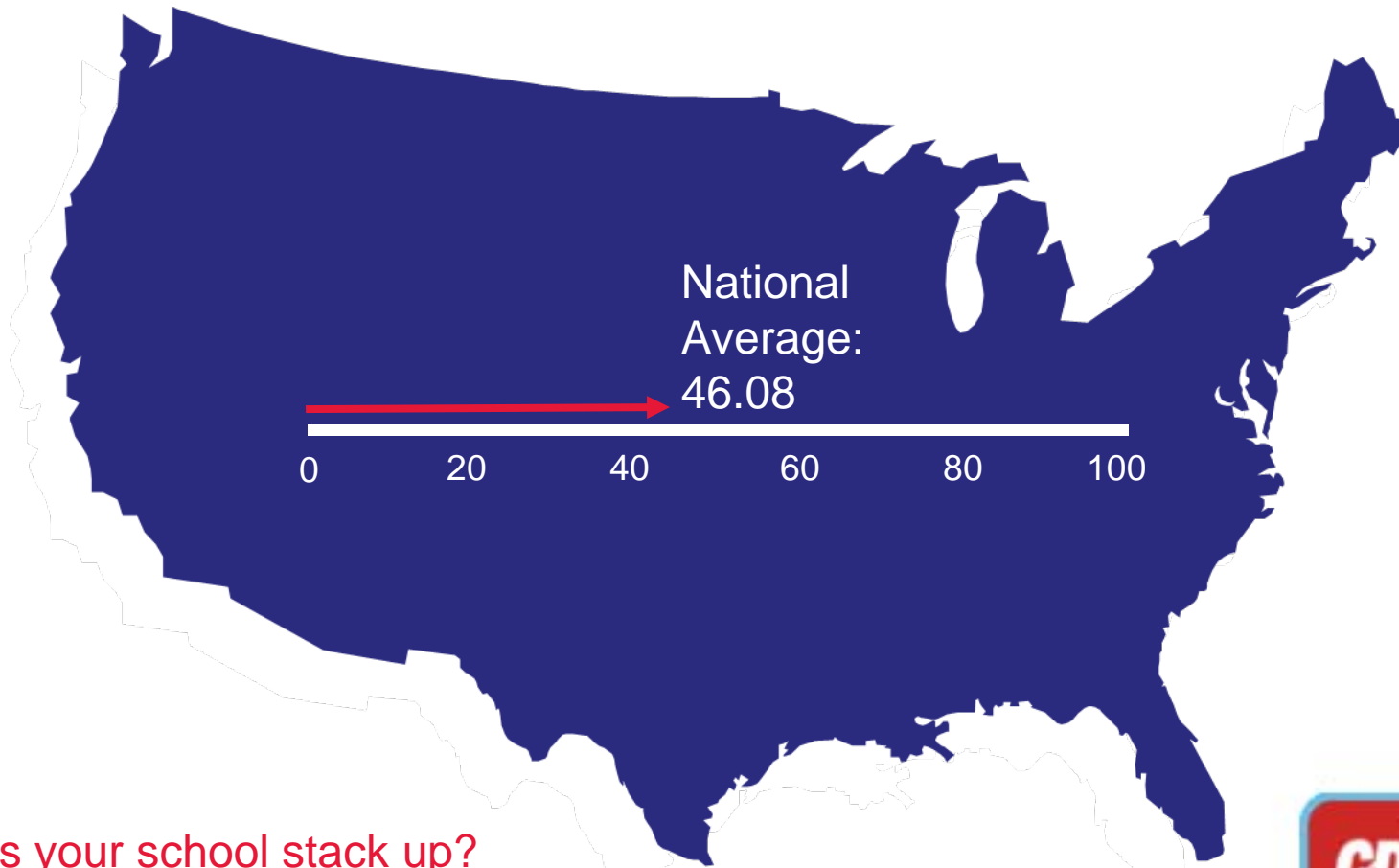**CDW·G**

21st-Century Campus Index

Considering 20 factors, U.S. schools score in the mid-range on technology integration. There is more work to be done
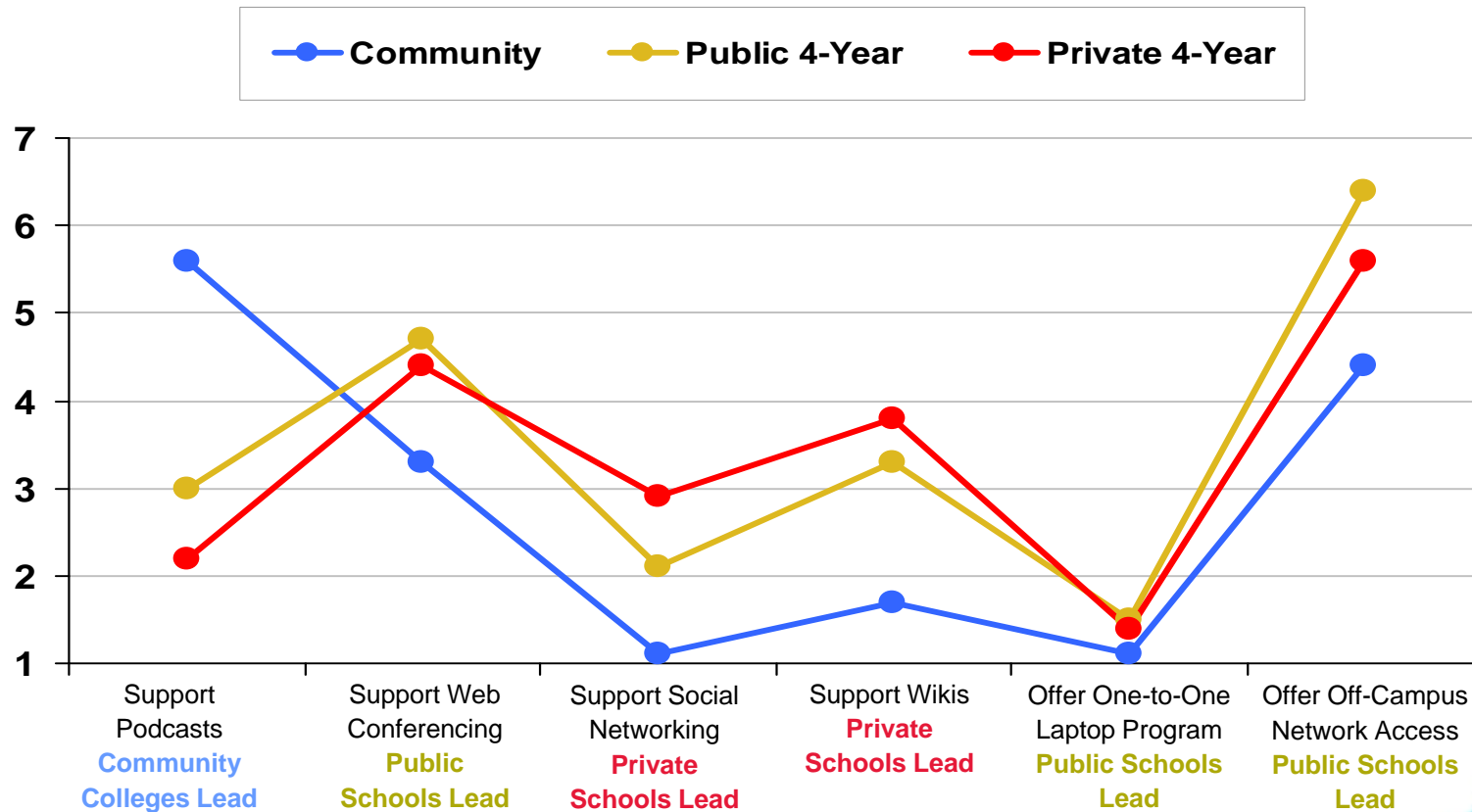
National Average: 46.08

0   20   40   60   80   100

How does your school stack up?
Download assessment forms at: www.21stCenturyCampusIndex.com

CDW·G

Progressing Toward Campus 2.0

Technology adoption scores at public/private/community colleges are not significantly different. On a 1-10 scale, each leads in some area*

Legend: ● **Community** ● **Public 4-Year** ● **Private 4-Year**

| Support Podcasts **Community Colleges Lead** | Support Web Conferencing **Public Schools Lead** | Support Social Networking **Private Schools Lead** | Support Wikis **Private Schools Lead** | Offer One-to-One Laptop Program **Public Schools Lead** | Offer Off-Campus Network Access **Public Schools Lead** |

*Ratings based on % of positive responses for each indicator x 10

Technology Matters

"We plan to grow our tablet PC initiative, which will require more infrastructure support – additional wireless access points, power plugs and tablet-friendly space throughout the college. We are converting our standard desktop computer labs to accommodate tablets with Ethernet, power, docking stations and external monitors. As we renovated classrooms, we included power for each seat and enabled students to connect to the wireless network and download a 20 megabyte file in under two minutes."

Josh Mack, Manager of Academic IT Iowa State University

Tech Matters in the College Search

Regardless of major, students say that campus technology played a key role in their school selection

Top five areas of study/majors that reported technology was **important or very important** to their college selection	
Vocational & technical studies	90%
Communications	89%
Engineering	79%
Business	78%
Education	73%

CDW·G

Tech Matters In the Classroom

Students say technology is critical to their ability to study for their chosen field – including students in non-technical majors

Students who believe technology is **important or very important** to their ability to study for their major:

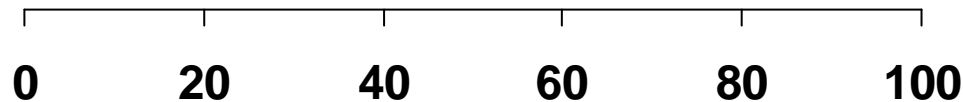|	
100%	Engineering
92%	Science
90%	Vocational and technical schools
90%	Business
89%	Communications
86%	Law and legal studies
85%	Education
84%	Medicine
80%	Agriculture
79%	Health
76%	Fine and applied arts
72%	Liberal arts

CDW•G

Employers Expect Tech-Savvy Grads

Employers say tech skills are growing in importance – and that universities are responsible for preparing grads for the 21st-century workforce

The need to master IT as a basic skill will increase over next five years*

Employers **77%** Say "*Yes*"

| 0 | 20 | 40 | 60 | 80 | 100 |

Four-year institutions should provide basic knowledge and applied skills*

Employers **68%** Say "*Yes*"

| 0 | 20 | 40 | 60 | 80 | 100 |

*"Are They Really Ready to Work?" 2006, The Conference Board, Inc., The Partnership for 21st Century Skills, Corporate Voices for Working Families, and the Society for Human Resources Management

CDW·G

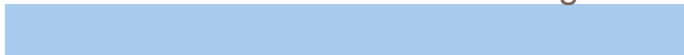# But College IT Prep Lags Workplace Needs

Despite technology implementation, campuses are not exposing students to common workplace collaborative technologies

How familiar are students with newer technology tools?

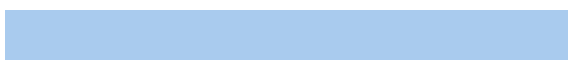**91%** Don't use videoconferencing

88% Don't use Web conferencing

83% Don't listen to podcasts

73% Don't use Wikis

"[Professors should] research a day in the life of a person in our chosen field and see how they use technology on a day-to-day basis ... [and] apply those skills in the classroom." – *Student*

CDW·G

Campus 2.0

"**Technology has become environmental and largely invisible for today's users; it's just 'there' and expected … A robust and secure IT infrastructure on campus, combined with excellent external connectivity, is a minimum starting point for every higher education institution today … And personal technology has expanded across space and time …**"
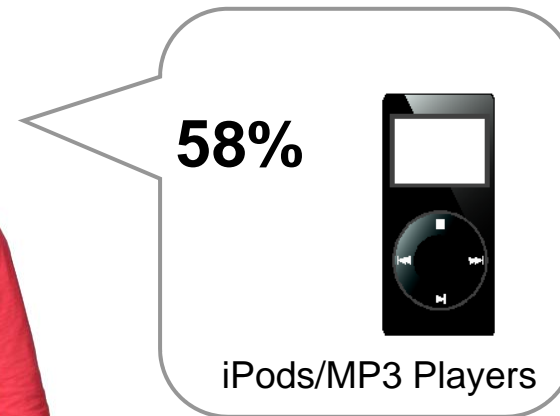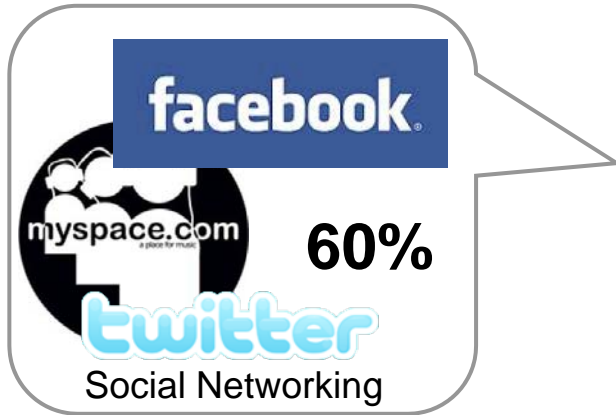
John Ashby, Enterprise Architect Saint Louis University

CDW·G

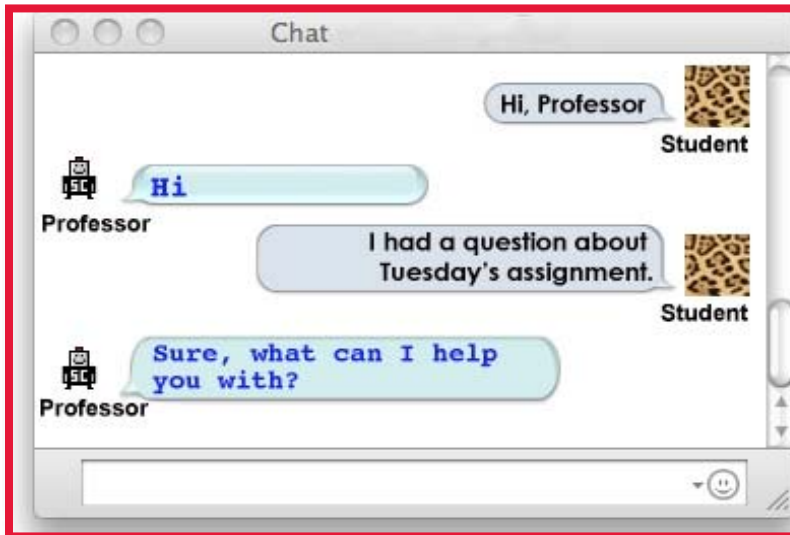# Students Use Tech Tools

From social networking to academic research, technology is embedded in the higher education experience

60%
Social Networking

58%
iPods/MP3 Players

58%
Course Management

75%
Laptops

Students Want Faculty Linked In

Today's collegians want more than a lecture-hall atmosphere from their college experience – they want regular and immediate communication with faculty. Students rated online chat with professors the tech capability that would be most useful in their studies. Still, just 23% of IT staff say their campus currently offers it
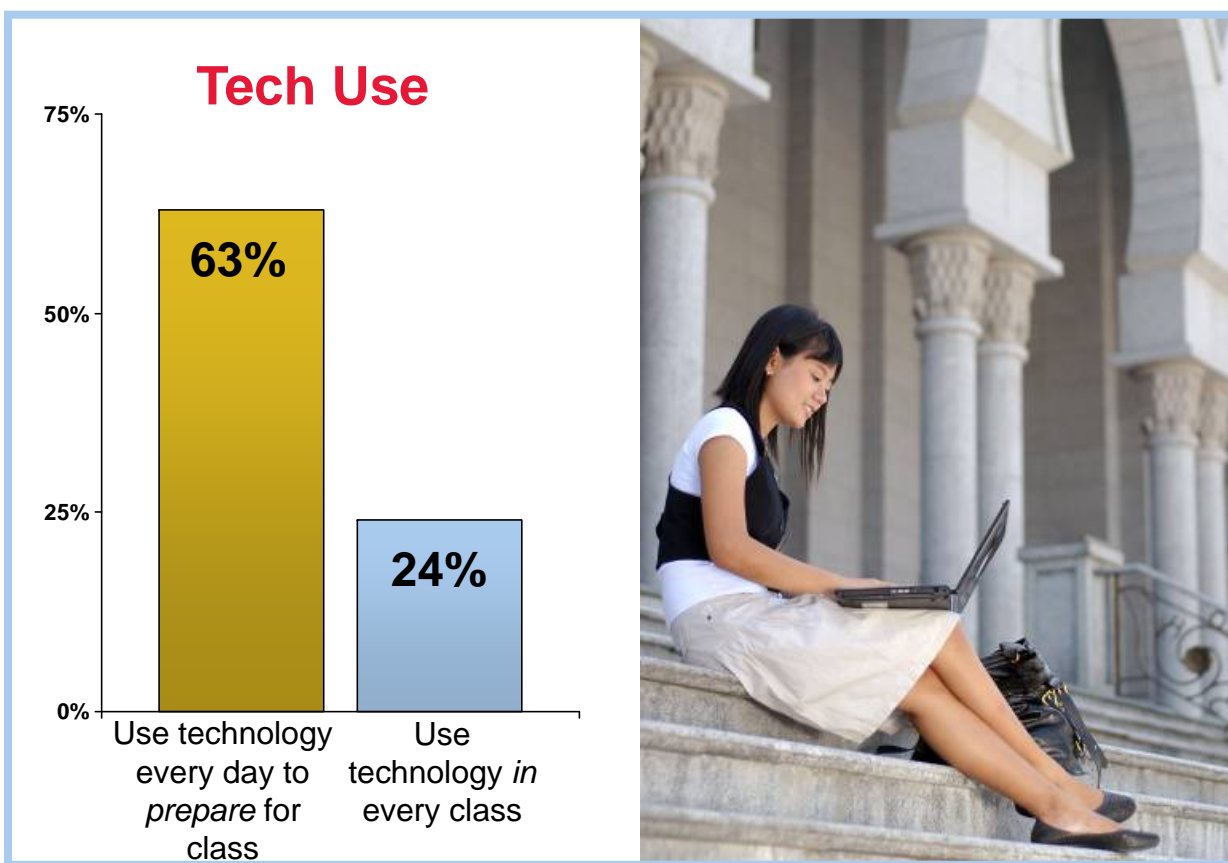

Student's #1 Desired Tech Capability:

Online chat with professors
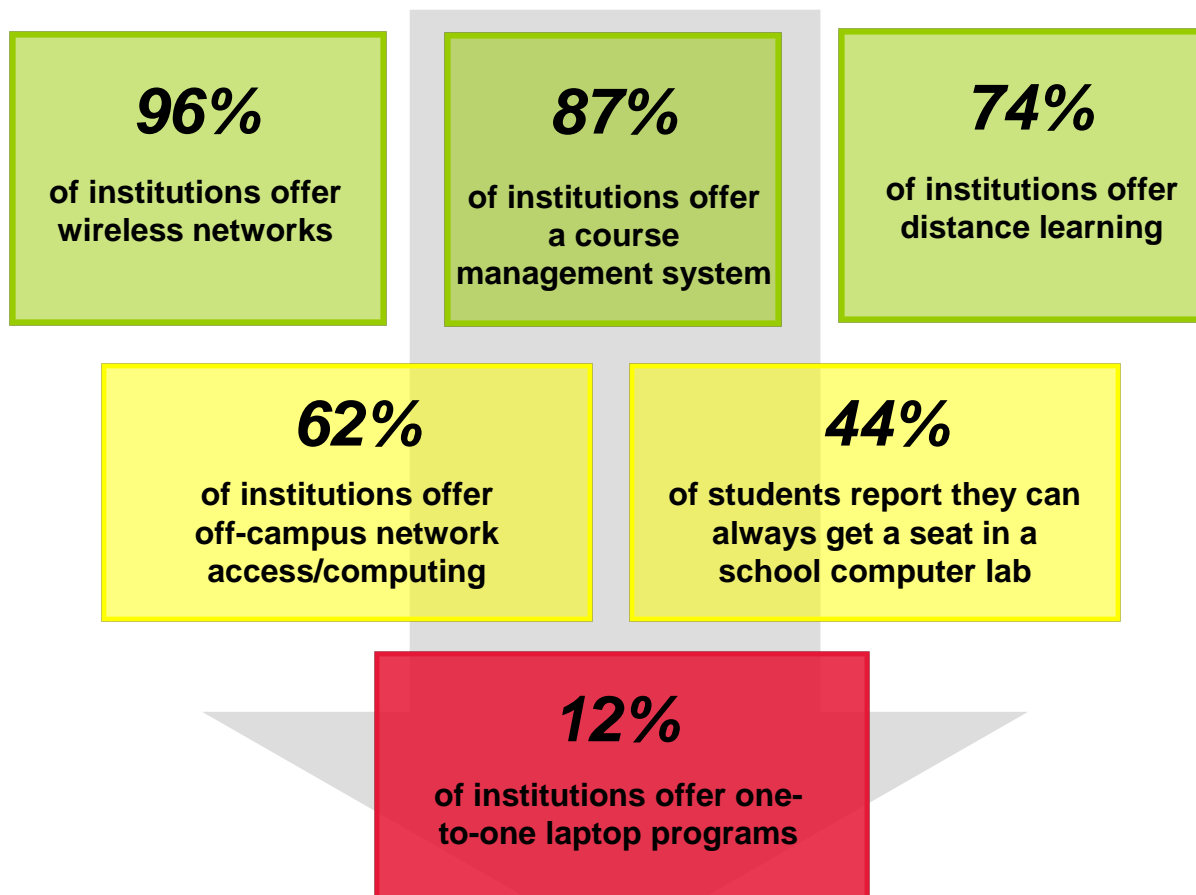(39% of students)

Students Use Tech Most Often for Prep

Students are using technology most frequently outside the classroom in preparation for class, highlighting the need for campus resources such as wireless networks and available campus computer labs

Tech Use

- 63% — Use technology every day to *prepare* for class
- 24% — Use technology *in* every class

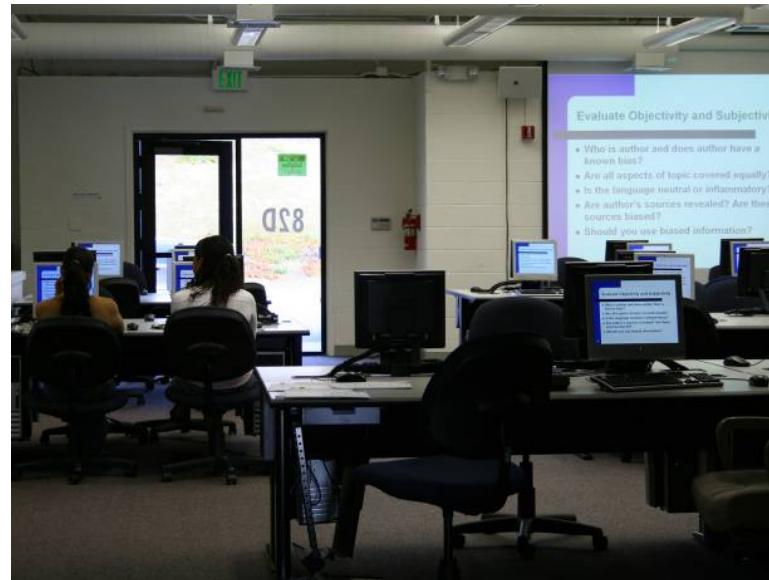**CDW•G**

Students Aren't Constantly Connected – Yet

Given widespread use of technology outside the classroom, access is important. Institutions are providing networks and distance learning opportunities. Fewer offer one-to-one laptop programs that connect all students

96%
of institutions offer wireless networks

87%
of institutions offer a course management system

74%
of institutions offer distance learning

62%
of institutions offer off-campus network access/computing

44%
of students report they can always get a seat in a school computer lab

12%
of institutions offer one-to-one laptop programs

CDW·G

Professor Prep

"**Maintaining consistent user interfaces and supporting emerging technologies is a key success factor for faculty who don't have complete control over the classroom spaces to which they are assigned.**"

John Ashby, Enterprise Architect
Saint Louis University

Tech in Class Doesn't Add Up

While the majority of faculty are encouraged to use technology and believe it is important for students, just 33% say it is fully integrated into their campus

88%
of faculty believe they are encouraged to use technology as a teaching tool

+

91%
of faculty say technology is essential to success in their class or a useful tool they encourage their students to use

≠

33%
of faculty say technology is <u>fully integrated</u> into their campus

Additionally…

85%
of faculty say their schools provide technology training

and

71%
of faculty are satisfied with the training they received
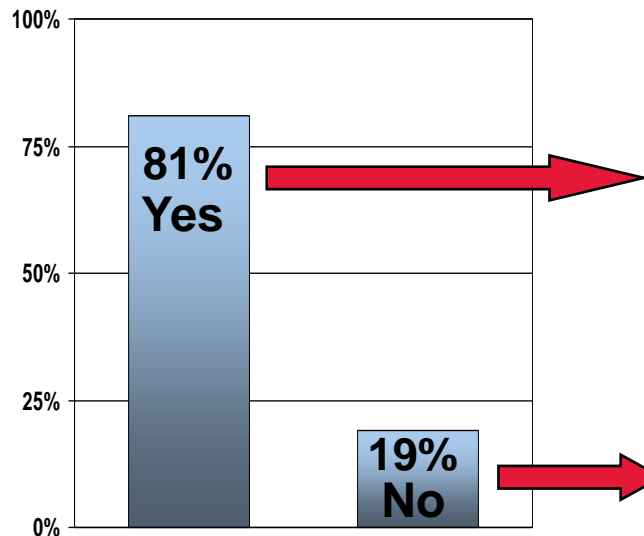
but

44%
of faculty say the biggest challenge is not knowing how to use the technology

CDW•G

Smart Classrooms Encourage Tech Use

Not surprisingly, faculty who hold their classes in a smart classroom are more likely to integrate technology into every class than their colleagues who do not

Faculty: Do you hold any of your classes in a "smart classroom?" (e.g., Internet connection, LCD projector, interactive whiteboards, smart podiums)
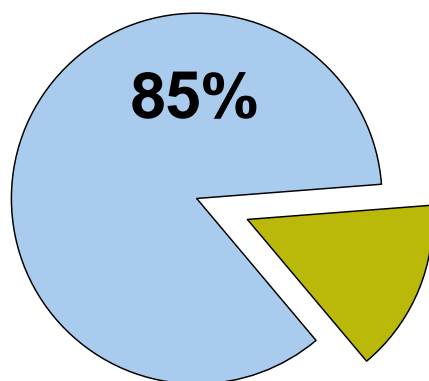
81% Yes

19% No

43% of faculty members who <u>hold</u> their classes in a smart classroom use technology during every class

28% of faculty members who <u>do not</u> hold their classes in a smart classroom use technology during every class
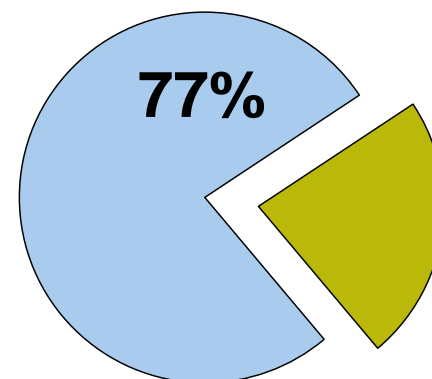
CDW·G

But Tech Resources Too Often Sit Idle

Given technology's importance *and* faculty access to tools, campuses should advocate daily use of technology in classrooms

85%

and

77%

of **students** say technology is an important tool for study in their chosen field

of **employers** say the need for IT skills will increase over the next five years
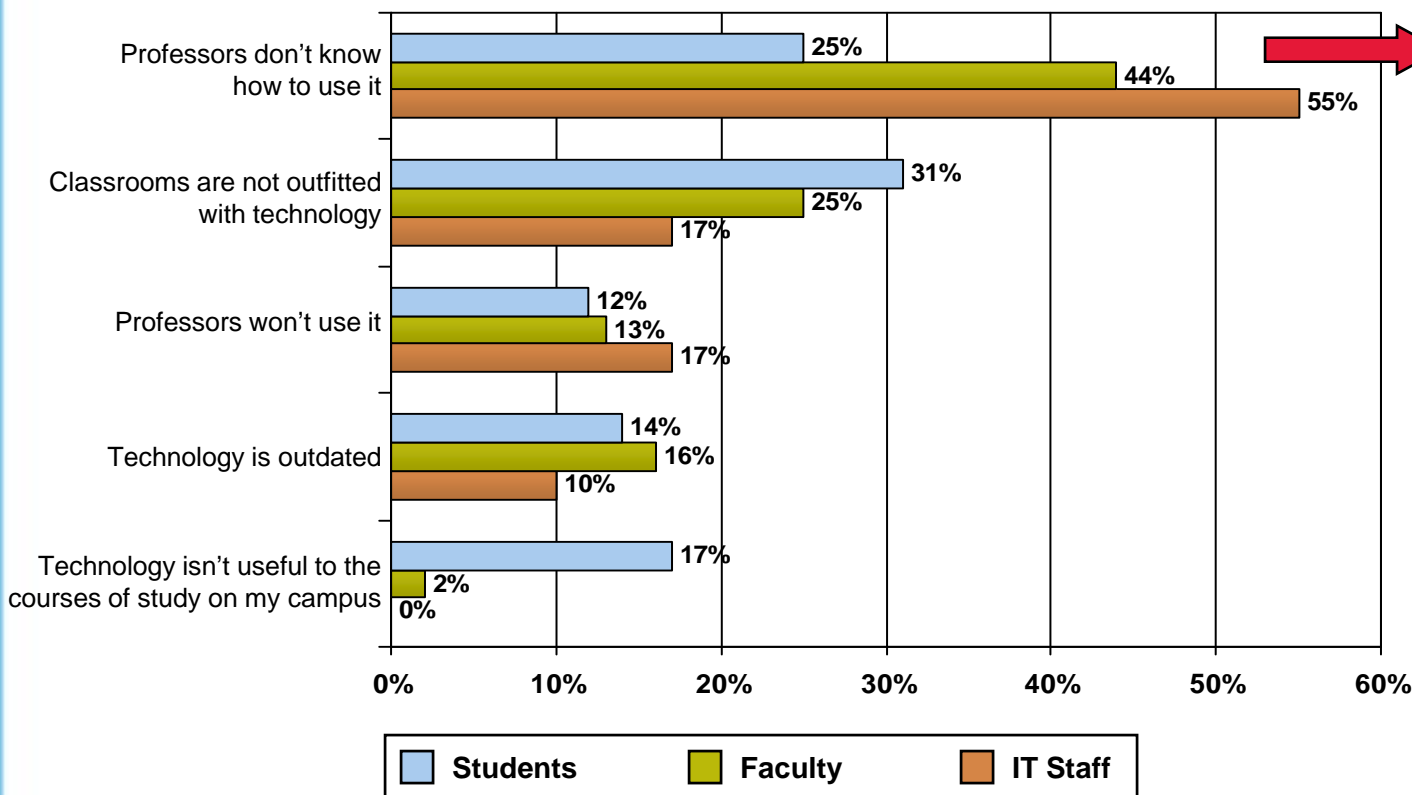
But…

*more than half (**57%**)*
of faculty members who do teach in a smart classroom say they <u>don't use the technology daily</u>

Professor Prep Named Top Challenge

Just 37% of students and 25% of IT staff report that faculty understands technology and fully integrates it into their classes – highlighting a significant opportunity for improvement

What is the biggest impediment to classroom technology on your campus?

Faculty members' lack of knowledge about technology is the most significant impediment to technology on campus

Category	Students	Faculty	IT Staff
Professors don't know how to use it	25%	44%	55%
Classrooms are not outfitted with technology	31%	25%	17%
Professors won't use it	12%	13%	17%
Technology is outdated	14%	16%	10%
Technology isn't useful to the courses of study on my campus	17%	2%	0%

Legend: ■ Students ■ Faculty ■ IT Staff

Future Tech: Advice from Students, Faculty and IT Staff

"What does the future of computing look like on our campus? Bright! The University of Georgia has a very progressive IT community and we love to ask the question, 'What if?'"

Stan Gatewood, former Chief Information Security Officer

University of Georgia

Campus 2.0 Is Within Reach

Students, faculty and IT staff emphasize different areas when they think about the future of technology on campus; IT should consider the full picture

Students

Wanted: Better IT Resources for Faculty

Ex: Improved faculty training and online chat capabilities

Faculty

Wanted: Academic Applications

Ex: Integration of technology into the classroom experience

IT Staff

Wanted: Next-Generation Tools

Ex: Wi-Fi, laptops, more security

Students Want Creative Use of Technology

Recommend collaborative media technologies

Students: What recommendation would you give to your teachers to better use technology in the classroom?

"Use videos, instructional Web sites, slide shows, online experiments, etc., to better instruct and familiarize students with relevant info"

"Use wikis"

"I know my campus offers training courses for all faculty on how to use the new technology … I would highly recommend that all professors take these courses"

"Get AIM"

"Keep grades updated, send out mass e-mails to students, stop using VHS ... it's called live streaming!"

"Teachers seem to grasp the concept of using technology, but sometimes don't embrace using it"

"Be creative. I enjoy podcasts as a learning tool"

CDW·G

Faculty Want Technology Ubiquity

Recommend standardization and more interactive capabilities

Faculty: What would you like to be able to do with technology in the classroom that you currently cannot?

"I would like all of my classrooms to be a smart classroom, so that each of my sections receive the same level of education"

"Better integrate audio/video into my PowerPoints and podcasts"

"Have it work every time I plan on using it"

"More seamlessly show multimedia content and search for reliable information in class"

"More interactive capabilities, allow students to input onto the screen from their desk, for example"

CDW•G

IT Staff Want Technology Standardization

Recognize student and faculty needs and seek to enhance technology tools and capabilities

IT Staff: What is the one piece of technology you wish your school could offer?

"One-to-one laptop program"

"Multi-way video and audio conferencing linkage"

"Standard equipment in all classrooms"

"Identity theft protection"

"Middleware to tie together all the services available for students and faculty"

IT Staff: What are the campus technology trends that you are watching?

"Web 2.0"

"More demand for wireless access, improved backup/restore techniques, business continuity planning"

"Distance learning"

"Virtualization"

CDW·G

Recommendations

- **Monitor: What's Relevant After Graduation?**
  - Identify technologies that students will use post-graduation (communication and functional tools) by major
  - Provide training and exposure

- **Assess: What's Happening on Campus?**
  - Survey incoming students on their technology needs and expectations
  - Conduct an annual technology assessment (download template at www.21stCenturyCampusIndex.com) that identifies how faculty use technology in class and student expectations
  - Identify challenges/best practices/opportunities

- **Train: What Do Professors Need?**
  - Survey faculty to learn what they want and need to learn
  - Ensure that training accommodates professors' schedules
  - Identify interesting classroom technology case studies and publish them to the faculty community

- **Connect: How to Use Web 2.0 Tools?**
  - Leverage chat, blogs and social media tools to connect students and faculty; build community within and beyond the campus
  - Keep an eye on technology trends to keep campus technology competitive

CDW·G

Methodology

- **CDW-G directed O'Keeffe & Company to conduct an online survey of college students, faculty and IT staff in May 2008**

- **Sample Size**
  - Students: 401
  - Faculty: 305
  - IT Executives: 301
  - Tech Index Combined Sample: 671

- **Margin of Error**
  - Full Sample: +/- 3.09% margin of error at a 95% confidence level
  - Students: +/- 4.89% margin of error at a 95% confidence level
  - Faculty: +/- 5.61% margin of error at a 95% confidence level
  - IT Executives: +/- 5.65% margin of error at 95% confidence level
  - Tech Index: +/- 3.72% at 95% confidence

Respondent Demographics

Faculty

- **Average number of years teaching at a college level:** 13
- **65% female; 35% male**
- **Subject area taught**
    - 22%: Liberal Arts
    - 17%: Science
    - 17%: Other
    - 14%: Education
    - 9%: Business
    - 5%: Fine and applied arts
    - 4%: Communications
    - 3%: Health
    - 3%: Vocational and technical
    - 2%: Engineering
    - 2%: Medicine
    - 1%: Law and legal studies
    - 0%: Agriculture

IT Staff

- **Average number of network users respondents' campuses support:** 46,725
- **Average size of IT staff**
    - 49%: 1-50 IT staff members
    - 12%: 50-100 IT staff members
    - 39%: 100+ IT staff members

Students

- **Average age:** 21
- **51% female; 49% male**
- **Year in school**
    - 30%: Freshman
    - 28%: Sophomore
    - 20%: Junior
    - 22%: Senior
- **Area of study**
    - 25%: Business
    - 11%: Other
    - 9%: Liberal Arts
    - 9%: Science
    - 8%: Education
    - 8%: Health
    - 7%: Engineering
    - 6%: Fine and applied arts
    - 5%: Communications
    - 5%: Medicine
    - 3%: Law and legal studies
    - 2%: Vocational and technical
    - 1%: Agriculture

Thank You

For all media questions and inquiries, please contact:

Ryan Kurtz

CDW Government, Inc.

847-968-0211

ryankur@cdw.com

Meredith Braselman

O'Keeffe & Company

703-883-9000 ext. 107

mbraselman@okco.com