ECAR NATIONAL STUDY OF STUDENTS AND INFORMATION TECHNOLOGY IN HIGHER EDUCATION, 2011

Eden Dahlstrom, Peter Grunwald, Tom de Boor, Martha Vockley
October 2011
CONTENTS

▪ Study Overview
▪ Key Findings
  ▪ Technology Ownership (*slides* 9–13)
  ▪ Technology Use and Value (*slides* 14–31)
  ▪ Institutional and Instructional Technology Competencies (*slides* 32–40)
  ▪ Technology for Connecting and Relationships (*slides* 41–44)
  ▪ Online Learning (*slides* 45–47)
▪ ECAR Recommendations

STUDY OVERVIEW
ECAR STUDENT STUDY, 2011
RESEARCH OBJECTIVES

- Assess students’ technology ownership and use
- Explore how effectively instructors and institutions are using technology
- Understand students’ technology skill level
- Gauge students’ technology perceptions, attitudes, and preferences
ECAR STUDENT STUDY, 2011

SAMPLE

- Responses from 3,000 students at 1,179 colleges and universities provided a nationally representative sample of students.
- Data are weighted to match statistics from the National Center of Education Statistics for the composition of college students in the United States on the following variables:
  - Year (freshman, sophomore, junior, senior)
  - Gender
  - Age
  - Region
  - Major of study
  - Institution type (public, private, for-profit)
  - Institution size
  - Institution type (4-year vs. 2-year)
  - Ethnicity
ECAR STUDENT STUDY, 2011
SAMPLE COMPOSITION

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>21%</td>
<td>640</td>
</tr>
<tr>
<td>Sophomore</td>
<td>31%</td>
<td>918</td>
</tr>
<tr>
<td>Junior</td>
<td>25%</td>
<td>760</td>
</tr>
<tr>
<td>Senior</td>
<td>23%</td>
<td>682</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>43%</td>
<td>1,283</td>
</tr>
<tr>
<td>Female</td>
<td>57%</td>
<td>1,717</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>18–24</td>
<td>60%</td>
<td>1,802</td>
</tr>
<tr>
<td>25–34</td>
<td>23%</td>
<td>709</td>
</tr>
<tr>
<td>35–44</td>
<td>9%</td>
<td>259</td>
</tr>
<tr>
<td>45+</td>
<td>8%</td>
<td>230</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>21%</td>
<td>630</td>
</tr>
<tr>
<td>South</td>
<td>25%</td>
<td>750</td>
</tr>
<tr>
<td>Midwest</td>
<td>33%</td>
<td>990</td>
</tr>
<tr>
<td>West</td>
<td>21%</td>
<td>630</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>66%</td>
<td>1,975</td>
</tr>
<tr>
<td>Black/African American</td>
<td>13%</td>
<td>398</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11%</td>
<td>344</td>
</tr>
<tr>
<td>American Indian or Alaskan native</td>
<td>1%</td>
<td>30</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>7%</td>
<td>201</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
<td>37</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>2%</td>
<td>65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological/life sciences</td>
<td>14%</td>
<td>408</td>
</tr>
<tr>
<td>Business, management, marketing</td>
<td>21%</td>
<td>642</td>
</tr>
<tr>
<td>Education, including physical education</td>
<td>7%</td>
<td>198</td>
</tr>
<tr>
<td>Engineering, including computer science</td>
<td>7%</td>
<td>213</td>
</tr>
<tr>
<td>Liberal arts and sciences/general studies</td>
<td>11%</td>
<td>342</td>
</tr>
<tr>
<td>Physical sciences, including math</td>
<td>2%</td>
<td>72</td>
</tr>
<tr>
<td>Social sciences</td>
<td>17%</td>
<td>498</td>
</tr>
<tr>
<td>Fine arts</td>
<td>6%</td>
<td>168</td>
</tr>
<tr>
<td>Other</td>
<td>13%</td>
<td>402</td>
</tr>
<tr>
<td>Undecided</td>
<td>2%</td>
<td>57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>73%</td>
<td>2,190</td>
</tr>
<tr>
<td>Private</td>
<td>23%</td>
<td>691</td>
</tr>
<tr>
<td>For-profit</td>
<td>4%</td>
<td>118</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enrollment</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 500</td>
<td>1%</td>
<td>30</td>
</tr>
<tr>
<td>500 to 999</td>
<td>3%</td>
<td>90</td>
</tr>
<tr>
<td>1,000–4,999</td>
<td>19%</td>
<td>570</td>
</tr>
<tr>
<td>5,000–9,999</td>
<td>18%</td>
<td>540</td>
</tr>
<tr>
<td>10,000–19,999</td>
<td>24%</td>
<td>720</td>
</tr>
<tr>
<td>20,000 or more</td>
<td>35%</td>
<td>1,049</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>A two-year or community college</td>
<td>37%</td>
<td>1,110</td>
</tr>
<tr>
<td>A four-year college or university</td>
<td>63%</td>
<td>1,890</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Enrollment Status</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>82%</td>
<td>2,459</td>
</tr>
<tr>
<td>Part-time</td>
<td>18%</td>
<td>541</td>
</tr>
</tbody>
</table>
ECAR STUDENT STUDY, 2011
KEY FINDINGS

- Students are drawn to hot technologies but rely on more traditional devices.
- Students recognize major academic benefits of technology.
- Students report uneven perceptions of institutions and instructors on technology.
- Facebook-generation students juggle personal and academic interactions.
- Students prefer, and say they learn more in, classes with online components.
KEY FINDING 1 – STUDENTS ARE DRAWN TO HOT TECHNOLOGIES BUT RELY ON TRADITIONAL DEVICES
Q1. Which of the following items do you own?

<table>
<thead>
<tr>
<th>Technology</th>
<th>Students Own</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop</td>
<td>87%</td>
</tr>
<tr>
<td>Printer</td>
<td>81%</td>
</tr>
<tr>
<td>DVD Player</td>
<td>75%</td>
</tr>
<tr>
<td>USB Thumbdrive</td>
<td>70%</td>
</tr>
<tr>
<td>Wi-Fi*</td>
<td>67%</td>
</tr>
<tr>
<td>Stationary gaming device</td>
<td>66%</td>
</tr>
<tr>
<td>Ipod</td>
<td>62%</td>
</tr>
<tr>
<td>HDTV</td>
<td>56%</td>
</tr>
<tr>
<td>Smartphone</td>
<td>55%</td>
</tr>
<tr>
<td>Digital Camera</td>
<td>55%</td>
</tr>
<tr>
<td>Webcam</td>
<td>55%</td>
</tr>
<tr>
<td>Desktop Computer</td>
<td>53%</td>
</tr>
<tr>
<td>Handheld Gaming Device</td>
<td>38%</td>
</tr>
<tr>
<td>Netbook</td>
<td>11%</td>
</tr>
<tr>
<td>iPad</td>
<td>8%</td>
</tr>
</tbody>
</table>

*Likely interpreted by the respondent as having access to Wi-Fi

Traditional age college students (18-24) and those from households of $100k+ own more technology than their counterparts.
DRAWN TO HOT TECHNOLOGIES…
RELIANT ON TRADITIONAL DEVICES

Q1. Which of the following items do you own?

- Laptop computer: 87%
- Printer: 81%
- DVD player: 75%
- USB Thumbdrive/portable harddrive: 70%
- Wi-Fi: 67%
- Stationary gaming device: 66%
- iPod: 62%
- HDTV: 56%
- Scanner: 56%
- NET: smartphone: 55%
- Digital point and shoot camera: 55%
- Webcam: 55%
- Desktop computer: 53%
- Other mobile/cell phone: 39%
- Handheld/portable gaming device: 38%
- DVR: 34%
- Blu-ray player: 29%
- mp3 player/music device (other than iPod): 29%
- Digital video camera: 27%
- Digital SLR camera: 14%
- eReader (e.g., Kindle, NOOK): 12%
- Internet-ready TV: 11%
- Netbook: 11%
- HD set top box: 9%
- Flip video camera: 8%
- iPad: 8%
- Internet device that attaches to TV: 7%
- 3D TV: 2%
- Other tablet: 2%
- Smartpen: 1%
Q4b. Does your college or university officially prefer you use one computing platform over another?
Q4c. And, what is your preference? Do you prefer to use one platform over another?
DRAWN TO HOT TECHNOLOGIES…
CARNEGIE CLASS DIFFERENCES

- Students at community colleges are more likely to own *stationary technologies* (e.g., desktop computers and stationary gaming and video devices), particularly in comparison to students at research institutions.

- Students at institutions that award master’s and doctorate degrees are more likely to own *portable technologies* (e.g., laptops, iPods, webcams, thumb drives, and Wi-Fi devices).

- Still, there are both mobile devices (e.g., iPads) and stationary technologies (e.g., HDTVs) for which no significant differences exist among students at institutions of different Carnegie Classifications.
KEY FINDING 2 – STUDENTS RECOGNIZE MAJOR ACADEMIC BENEFITS OF TECHNOLOGY
**ACADEMIC BENEFITS…**

**DEVICES USED FOR ACADEMICS**

Technology use for academics

---

Q1. Which of the following items do you own?

Q2a. Regardless of whether you own it, which of the following have you used for at least one course or academic activity in the past year?

<table>
<thead>
<tr>
<th>Technology</th>
<th>Students Use For Academics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Laptop</td>
<td>85%</td>
</tr>
<tr>
<td>Printer</td>
<td>79%</td>
</tr>
<tr>
<td>Desktop Computer</td>
<td>63%</td>
</tr>
<tr>
<td>Wi-Fi</td>
<td>60%</td>
</tr>
<tr>
<td>USB Thumbdrive</td>
<td>59%</td>
</tr>
<tr>
<td>Smartphone</td>
<td>37%</td>
</tr>
<tr>
<td>DVD Player</td>
<td>30%</td>
</tr>
<tr>
<td>iPad</td>
<td>23%</td>
</tr>
<tr>
<td>Digital Camera</td>
<td>21%</td>
</tr>
<tr>
<td>HDTV</td>
<td>18%</td>
</tr>
<tr>
<td>Webcam</td>
<td>17%</td>
</tr>
<tr>
<td>Stationary gaming device</td>
<td>12%</td>
</tr>
<tr>
<td>iPad</td>
<td>12%</td>
</tr>
<tr>
<td>Netbook</td>
<td>11%</td>
</tr>
<tr>
<td>Handheld Gaming Device</td>
<td>7%</td>
</tr>
</tbody>
</table>

() = use among owners

Traditional age college students (18-24) and those from households of $100K+ use more technology than their counterparts.
ACADEMIC BENEFITS…
CORE SOFTWARE IS CENTRAL TO SUCCESS

<table>
<thead>
<tr>
<th>Activity</th>
<th>Several times a day</th>
<th>Once a day</th>
<th>A few times a week</th>
<th>Less often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use word processors</td>
<td>24%</td>
<td>24%</td>
<td>41%</td>
<td>7%</td>
</tr>
<tr>
<td>Use your college/university’s library website</td>
<td>6%</td>
<td>9%</td>
<td>32%</td>
<td>41%</td>
</tr>
<tr>
<td>Use presentation software</td>
<td>4%</td>
<td>7%</td>
<td>29%</td>
<td>45%</td>
</tr>
<tr>
<td>Use spreadsheets</td>
<td>7%</td>
<td>9%</td>
<td>29%</td>
<td>38%</td>
</tr>
<tr>
<td>Use a course or learning management system</td>
<td>27%</td>
<td>18%</td>
<td>19%</td>
<td>9%</td>
</tr>
<tr>
<td>Use e-books or e-textbooks</td>
<td>6%</td>
<td>8%</td>
<td>20%</td>
<td>23%</td>
</tr>
<tr>
<td>Use graphics software (Photoshop, Flash, etc.)</td>
<td>5%</td>
<td>17%</td>
<td>29%</td>
<td>23%</td>
</tr>
<tr>
<td>Use web-based citation/bibliography tools</td>
<td>15%</td>
<td>32%</td>
<td>51%</td>
<td></td>
</tr>
<tr>
<td>Use simulations or play educational games</td>
<td>9%</td>
<td>24%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>Use video-creation software</td>
<td>6%</td>
<td>25%</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>Use programming languages (C++, Java, etc.)</td>
<td>11%</td>
<td>15%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Use freely available course content</td>
<td>8%</td>
<td>17%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Use audio-creation software</td>
<td>6%</td>
<td>19%</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Use e-portfolios</td>
<td>6%</td>
<td>13%</td>
<td>21%</td>
<td></td>
</tr>
</tbody>
</table>

Q5b. Thinking about the most recent school year, how often did you do the following, whether it was for school or personal purposes?
Q7. How valuable are each of the following when it comes to your academic success? Please consider only your academic success when rating these technologies, not the other aspects of your life.
Q12. To what extent do you agree with each of the following statements regarding technology when it comes to your academic experience?

**Agreement with Statements about Academic Success**
Percent Responding “Agreeing or Strongly Agreeing”

- Gives me access to a wide range of resources: 59% Agreeing or Strongly Agreeing, 23% Agreeing, 82% Strongly Agreeing
- Makes it easy to track my academic progress: 54% Agreeing or Strongly Agreeing, 26% Agreeing, 80% Strongly Agreeing
- Simplifies administrative-related activities such as registering for classes, paying tuition, etc.: 56% Agreeing or Strongly Agreeing, 22% Agreeing, 78% Strongly Agreeing
- Helps me know how I am doing in a course: 48% Agreeing or Strongly Agreeing, 30% Agreeing, 78% Strongly Agreeing
- Extends learning beyond the classroom: 46% Agreeing or Strongly Agreeing, 30% Agreeing, 76% Strongly Agreeing
- Helps me do my work faster: 47% Agreeing or Strongly Agreeing, 27% Agreeing, 74% Strongly Agreeing
- Is an efficient way to store examples of my work: 45% Agreeing or Strongly Agreeing, 29% Agreeing, 74% Strongly Agreeing
- Allows me to produce higher quality work: 43% Agreeing or Strongly Agreeing, 31% Agreeing, 74% Strongly Agreeing
- Makes it easier to get help when I need it: 44% Agreeing or Strongly Agreeing, 29% Agreeing, 73% Strongly Agreeing
- Allows me to take control of my own learning: 41% Agreeing or Strongly Agreeing, 31% Agreeing, 72% Strongly Agreeing
- Makes college easier: 41% Agreeing or Strongly Agreeing, 28% Agreeing, 69% Strongly Agreeing
- Makes learning more creative: 37% Agreeing or Strongly Agreeing, 30% Agreeing, 67% Strongly Agreeing
- Better prepares me for entering the workforce: 37% Agreeing or Strongly Agreeing, 29% Agreeing, 66% Strongly Agreeing
- Makes learning more fun: 37% Agreeing or Strongly Agreeing, 29% Agreeing, 66% Strongly Agreeing
- Makes me feel more connected to what’s going on at the college/university: 35% Agreeing or Strongly Agreeing, 30% Agreeing, 65% Strongly Agreeing
- Makes coursework/lectures more engaging: 35% Agreeing or Strongly Agreeing, 30% Agreeing, 65% Strongly Agreeing
- Enables me to reach my true academic potential: 33% Agreeing or Strongly Agreeing, 30% Agreeing, 63% Strongly Agreeing
- Elevates the level of teaching: 31% Agreeing or Strongly Agreeing, 30% Agreeing, 61% Strongly Agreeing
- Gives me access to experts in my field: 33% Agreeing or Strongly Agreeing, 27% Agreeing, 60% Strongly Agreeing
- Makes me feel connected to professors and other college/university staff: 31% Agreeing or Strongly Agreeing, 29% Agreeing, 60% Strongly Agreeing
- Makes me feel connected to other students: 31% Agreeing or Strongly Agreeing, 27% Agreeing, 58% Strongly Agreeing
- Makes my academic experience more individualized/personalizes curriculum: 30% Agreeing or Strongly Agreeing, 27% Agreeing, 57% Strongly Agreeing
- Makes classes more relevant to real life: 30% Agreeing or Strongly Agreeing, 27% Agreeing, 57% Strongly Agreeing
- Better prepares me for getting into graduate school: 29% Agreeing or Strongly Agreeing, 27% Agreeing, 56% Strongly Agreeing
- Helps me think out of the box: 29% Agreeing or Strongly Agreeing, 27% Agreeing, 56% Strongly Agreeing
- ©2011 EDUCAUSE. CC by-nc-nd
ACADEMIC BENEFITS...

FOUR FACTORS FOR ACADEMIC SUCCESS

Gives Students Access to Resources and Progress Reports
- Easy to track my academic progress
- Helps me know how I am doing
- Simplifies administrative-related activities
- Gives me access to resources
- Easier to get help when I need it

Makes Students More Efficient
- Helps me do my work faster
- Allows me to produce higher-quality work
- Efficient way to store examples of work
- Makes college easier

Facilitates Connecting with Others
- Feel connected to other students
- Feel connected to professors/staff
- Feel connected to what’s going on
- Gives me access to experts in my field

Makes Learning More Engaging and Relevant
- Learning more creative
- Learning more fun
- Think out of the box
- Individualized/personalized
- More relevant to real life
- More engaging
- Elevates teaching
- Reach academic potential
- Take control of own learning
- Extends learning beyond classroom
- Prepares me for the workforce
- Prepares me for graduate school
ACADEMIC BENEFITS...RELATIONSHIPS BETWEEN TECHNOLOGIES AND BENEFITS

Access to Resources & Progress Reports

- Laptop computer
- Wi-Fi
- Printer
- Document camera
- USB drive
- Projector

Efficiency

- Laptop
- Wi-Fi
- Printer

Connecting With Others

- Smartphone
- Internet device that attaches to TV
- Digital video camera
- eReader
- iPad
- Digital point and shoot camera
- Scanner
- Student clickers/student response systems

Engagement and Relevance

- Digital video camera
- Internet device that attaches to TV
- Interactive whiteboard
- Digital cameras
- Scanner
- iPhone/smartphone
- Student clickers/student response systems
- iPad
- Mp3 player
- DVD player
- Document camera
- DVR
- Desktop computer
- Webcam

©2011 EDUCAUSE. CC by-nc-nd
## ACADEMIC BENEFITS...

### COMMUNICATION TOOLS - MASS ADOPTION

<table>
<thead>
<tr>
<th>Activity</th>
<th>Several times a day</th>
<th>Once a day</th>
<th>A few times a week</th>
<th>Less often</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>75%</td>
<td>6%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Text message</td>
<td>74%</td>
<td>8%</td>
<td>14%</td>
<td>11%</td>
</tr>
<tr>
<td>Use Facebook</td>
<td>58%</td>
<td>12%</td>
<td>27%</td>
<td>15%</td>
</tr>
<tr>
<td>Download or stream web-based videos (YouTube, etc.)</td>
<td>20%</td>
<td>14%</td>
<td>33%</td>
<td>26%</td>
</tr>
<tr>
<td>Read Wikis (Wikipedia, course wiki, etc.)</td>
<td>12%</td>
<td>12%</td>
<td>35%</td>
<td>26%</td>
</tr>
<tr>
<td>Instant message (Gchat, Facebook chat, AIM, etc.)</td>
<td>27%</td>
<td>12%</td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td>Download or stream web-based music</td>
<td>15%</td>
<td>11%</td>
<td>30%</td>
<td>23%</td>
</tr>
<tr>
<td>Read blogs</td>
<td>13%</td>
<td>9%</td>
<td>27%</td>
<td>23%</td>
</tr>
<tr>
<td>Use telephone-like communication over the Internet</td>
<td>11%</td>
<td>11%</td>
<td>23%</td>
<td>25%</td>
</tr>
<tr>
<td>Watch podcasts or webcasts</td>
<td>7%</td>
<td>7%</td>
<td>21%</td>
<td>33%</td>
</tr>
<tr>
<td>Participate in online chats, chat events, webinars</td>
<td>5%</td>
<td>18%</td>
<td>33%</td>
<td>59%</td>
</tr>
<tr>
<td>Use photo-sharing websites (Flickr, Snapfish, Picasa, etc.)</td>
<td>6%</td>
<td>15%</td>
<td>28%</td>
<td>53%</td>
</tr>
<tr>
<td>Tagging/bookmarking/liking</td>
<td>6%</td>
<td>6%</td>
<td>17%</td>
<td>49%</td>
</tr>
<tr>
<td>Play online multi-user computer games for recreation</td>
<td>6%</td>
<td>15%</td>
<td>14%</td>
<td>43%</td>
</tr>
<tr>
<td>Contribute to blogs</td>
<td>9%</td>
<td>15%</td>
<td>24%</td>
<td>43%</td>
</tr>
<tr>
<td>Post videos to a video-sharing website (YouTube, etc.)</td>
<td>8%</td>
<td>9%</td>
<td>12%</td>
<td>37%</td>
</tr>
<tr>
<td>Use Twitter</td>
<td>6%</td>
<td>17%</td>
<td>31%</td>
<td>15%</td>
</tr>
<tr>
<td>Use other social networking websites (MySpace, etc.)</td>
<td>7%</td>
<td>12%</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>Access Internet content via a TV (Apple TV, Roku)</td>
<td>6%</td>
<td>15%</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>Use LinkedIn</td>
<td>5%</td>
<td>18%</td>
<td>25%</td>
<td>23%</td>
</tr>
<tr>
<td>Contribute to Wikis (Wikipedia, course wiki, etc.)</td>
<td>5%</td>
<td>12%</td>
<td>23%</td>
<td>18%</td>
</tr>
<tr>
<td>Use Geo-Tagging, Geo-Tagged environments</td>
<td>7%</td>
<td>9%</td>
<td>18%</td>
<td>15%</td>
</tr>
<tr>
<td>Participate in online virtual worlds</td>
<td>8%</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q5a. Thinking about the most recent school year, how often did you do the following, whether it was for school or personal purposes?
ACADEMIC BENEFITS…
A BLIZZARD OF MESSAGES

- Frequent e-mail users (75% of students) send or receive an average of 25 e-mails a day.
- Frequent texters (74% of students) send or receive an average of 84 text messages a day.
- Frequent Facebook users (58% of students) log into and/or check Facebook 13 times a day.
- Frequent Twitter users (11% of students) read or post 112 tweets a day.
ACADEMIC BENEFITS... SMARTPHONES—NOT JUST FOR COMMUNICATION

Ways Smartphones Are Used for Academic Work
(Among Users) n= 1,122

- E-mailing professors: 66%
- Checking grades: 62%
- Texting other students about coursework: 61%
- Looking up info on Internet outside of class: 59%
- E-mailing other students about coursework: 57%
- Accessing course websites or syllabi: 45%
- Looking up info on Internet in class: 45%
- As a timer or time management device: 42%
- Listening to music while doing coursework: 40%
- Taking pictures: 37%
- Collecting data for classwork: 28%
- To access a social networking website: 28%
- Accessing library resources: 24%
- Registering for courses: 22%
- Conducting research for...: 22%
- Accessing financial aid information: 21%
- Texting professors: 19%
- Making textbook purchases: 16%
- Learning about locations you're in/visiting: 15%
- As a source of additional help or tutoring: 15%
- Posting information or images on the...: 14%
- Writing papers or other classwork: 12%
- Ordering transcripts: 7%
- Making charts or other visual aids: 5%

Opportunities exist for universities and students to take greater advantage of smartphone technology when it comes to administrative activities, such as ordering transcripts, purchasing textbooks, accessing financial aid information, and registering for courses.

Q11. You said you own an iPhone or smartphone. Which of the following are ways you use your iPhone or smartphone for your academic work?
Q10b. Which of the following types of mobile or tablet apps do you use for coursework or other college/university-related activities? Please do not include any apps that you only use for personal, non-academic purposes.
ACADEMIC BENEFITS...THE ONE WEBSITE STUDENTS CAN’T LIVE WITHOUT

Google 36%

Wikipedia 11%
Blackboard 8%

An additional 88 websites/online resources were mentioned by less than 2% of the sample.

Q15. When it comes to your success as an undergraduate, what is one website or online resource you couldn’t live without?
Q4a. And, how valuable are each of the following when it comes to your academic success, (whether it’s your own personal device, or something your instructor or university uses as a part of your academic experience)? Please consider only your academic success when rating these technologies, not the other aspects of your life.

Wi-Fi access is instrumental to student success, and students want access from everywhere on campus.

Value of Technology for Academic Success
Percent Responding “Extremely Valuable”
(Among users and those whose instructors use)
N = bases vary

- Laptop computer: 81%
- Projector: 78%
- Desktop computer: 73%
- USB Thumbdrive/portable harddrive: 64%
- Printer: 57%
- Netbook: 53%
- Net: Smartphones: 46%
- Document camera or digital overhead projector: 41%
- Interactive whiteboard (e.g., SMART board): 35%
- eReader (e.g., Kindle, NOOK): 33%
- Other mobile/cell phone: 33%
- Scanner: 32%
- Digital SLR camera: 31%
- 3D TV: 28%
- Internet device that attaches to TV: 28%
- HD set top box: 27%
- Other tablet - not an iPad: 26%
- iPad: 26%
- Digital video camera: 24%
- DVR: 23%
- mp3 player/music device (other than iPod): 23%
- Internet-ready TV: 23%
- Student clickers or student response systems: 22%
- Webcam: 22%
- Smartpen: 21%
- HDTV: 21%
- Digital point and shoot camera: 20%
- DVD player: 19%
- iPod: 19%
- Stationary gaming device: 18%
- Blu-ray player: 18%
- Flip video camera: 16%
- Handheld/portable gaming device: 15%
- Handheld/portable gaming device: 14%
There is a wide range of technologies with potential educational benefits that aren’t being used yet.

Q2b. You’ve told us about all the different kinds of technological devices you own and use for academic work. Now tell us, which of the following your instructors used to teach, mentor and communicate with you in the past year?
### ACADEMIC BENEFITS…

### MANY LACK CONFIDENCE IN THEIR SKILLS

#### Student Technology Skill Level
Percentage Responding 4 or 5 “My skill level meets my needs” (out of 5)

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage Responding 4 or 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word processors</td>
<td>69%</td>
</tr>
<tr>
<td>College/university’s library website</td>
<td>50%</td>
</tr>
<tr>
<td>Course or learning management system</td>
<td>52%</td>
</tr>
<tr>
<td>Presentation software</td>
<td>47%</td>
</tr>
<tr>
<td>E-books or e-textbooks</td>
<td>44%</td>
</tr>
<tr>
<td>Online chats, chat events, webinars</td>
<td>42%</td>
</tr>
<tr>
<td>Spreadsheets</td>
<td>36%</td>
</tr>
<tr>
<td>Photo-sharing websites</td>
<td>31%</td>
</tr>
<tr>
<td>Simulations or educational games</td>
<td>30%</td>
</tr>
<tr>
<td>Web-based citation/bibliography tools</td>
<td>30%</td>
</tr>
<tr>
<td>Podcasts and webcasts</td>
<td>27%</td>
</tr>
<tr>
<td>Graphics software</td>
<td>20%</td>
</tr>
<tr>
<td>Freely available course content</td>
<td>20%</td>
</tr>
<tr>
<td>Internet content via a TV</td>
<td>21%</td>
</tr>
<tr>
<td>Online virtual worlds</td>
<td>22%</td>
</tr>
<tr>
<td>Social studying sites</td>
<td>19%</td>
</tr>
<tr>
<td>Geo-Tagging, Geo-Tagged environments</td>
<td>20%</td>
</tr>
<tr>
<td>Speech recognition software</td>
<td>17%</td>
</tr>
<tr>
<td>Video-creation software</td>
<td>15%</td>
</tr>
<tr>
<td>Audio-creation software</td>
<td>15%</td>
</tr>
<tr>
<td>E-portfolios</td>
<td>15%</td>
</tr>
<tr>
<td>Programming languages</td>
<td>13%</td>
</tr>
</tbody>
</table>

Q6. How comfortable do you feel with your ability to use each of the following?
ACADEMIC BENEFITS...
E-MAIL HITS THE TOP OF WISH LIST

Wish Instructor Used More Often

- E-mail: 39%
- Course or learning management system: 32%
- E-books or e-textbooks: 31%
- Presentation software: 27%
- Online forums or bulletin boards: 21%
- Online chats, chat events, webinars: 20%
- College/university library website: 20%
- Web-based videos: 19%
- Freely available course content: 19%
- Video-sharing websites: 18%
- Word processors: 18%
- Podcasts and webcasts: 17%
- Text message: 16%
- Spreadsheets: 16%
- Facebook: 15%
- Tagging/bookmarking/liking: 15%
- Simulations or educational games: 15%
- Blogs: 14%
- Wikis: 13%
- Web-based citation/bibliography tools: 12%
- Social studying sites: 11%
- Instant message: 9%
- Telephone-like communication over the Internet: 9%
- Graphics software: 9%
- Video-creation software: 7%
- Online multi-user computer games: 6%
- Programming languages: 6%
- E-portfolios: 6%
- Web-based music: 5%

*Only items mentioned by at least 5% of students are shown

Q8A. Which things do you wish your instructors used more?

Why Students Say they Want “More” (From open-end responses)

- “I wish instructors e-mailed more so that students and teachers could communicate easier, faster, and more efficiently.”
- “Blackboard makes viewing things in your class easier and more convenient.”
- “E-books are cheaper than regular hardbound textbooks, easier to carry around, and more accessible all the time.”
- “I find PowerPoint presentations easy to follow & understand.”
ACADEMIC BENEFITS...CARNEGIE DIFFERENCES IN TECHNOLOGY VALUE

- Students in community colleges are generally less likely to engage in many technology applications and activities than students at institutions of other Carnegie Classifications.

- Students in community colleges tend to find non-core technologies more valuable than do students in doctoral-granting institutions. These technologies include multi-user games, educational simulations and games, speech recognition software, and, to a lesser extent, virtual worlds, geotagging, and graphics software.
ACADEMIC BENEFITS…CARNEGIE DIFFERENCES IN TECHNOLOGY VALUE

- Across a broad range of technologies, students at institutions that award doctorate degrees are more comfortable with their skills than students at community colleges and, in many cases, students in institutions that award bachelor’s and master’s degrees.

- Students at institutions that award doctorate degrees tend to find a number of core communication, course, and social networking tools more valuable than their counterparts in community colleges.
KEY FINDING 3 – STUDENTS REPORT UNEVEN PERCEPTIONS OF INSTITUTIONS AND INSTRUCTORS ON TECHNOLOGY
UNEVEN PERCEPTIONS OF TECHNOLOGY...  
EFFECTIVE, FREQUENT, AND SEAMLESS USE

- The strongest predictors of how students rate their institution in its use of technology
  - their instructors’ *effective use* of technology
  - their instructors’ use of technology *frequently enough*
  - the *seamless integration* of technology into their courses

- These three predictors alone accounted for approximately 54% of the variance in students’ perceptions of their institution’s effectiveness in using technology.
UNEVEN PERCEPTIONS OF TECHNOLOGY…

NO MAGIC BULLETS

- Students at institutions rated as highly effective in the use of technology say they engage in about as many software activities as their peers and that their instructors use about the same number of devices in their coursework.

- There are no significant differences between students’ frequency of use of most software applications at institutions rated effective and less effective in their use of technology.

- Virtually no high or even moderate correlations exist between individual technologies and any of the major academic benefits of technology described earlier.

- Differentiating technologies, where they exist, often are mundane (e.g., printers, spreadsheets, even USB thumb drives).
UNEVEN PERCEPTIONS OF TECHNOLOGY...
DELIVERY OF BASIC ONLINE SERVICES

Institutional Performance in Online Delivery of Services
Percentage rating 4 or 5 (out of 5)

<table>
<thead>
<tr>
<th>Service</th>
<th>Not Offered</th>
<th>Not Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offering online course registration</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Making grades available online</td>
<td>--</td>
<td>1%</td>
</tr>
<tr>
<td>Offering Library resources online</td>
<td>1%</td>
<td>6%</td>
</tr>
<tr>
<td>Making transcripts available online</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Making financial aid information available</td>
<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>Offering textbooks for sale online</td>
<td>6%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Q16. How would you rate your college/university with regards to the following online services?

©2011 EDUCAUSE. CC by-nc-nd
UNEVEN PERCEPTIONS OF TECHNOLOGY…
VALUE VS. EFFECTIVE USE

Q3. How effectively did your instructors use these technologies to teach, mentor and communicate with you in the past year?
Q4a. And, how valuable are each of the following when it comes to your academic success?

Items with Ns below 45 are not included on this chart.
UNEVEN PERCEPTIONS OF TECHNOLOGY…
SOFTWARE VALUE VS. WISHED USED MORE

Q7. How valuable are each of the following when it comes to your academic success?
Q8A. Which things do you wish your instructors used more?

1st priority
Highly valued technologies students wish instructors used more

Items with Ns below 45 are not included on this chart.

Note: Students may value creative technologies less in an academic context because their instructors don’t model their use.
Q3. How effectively did your instructors use these technologies to teach, mentor and communicate with you in the past year?

Instructors' Effective Use of Technology
Percentage responding “extremely effectively”
(Among those whose instructors use), n=base sizes vary

- Projector: 65%
- Wi-Fi: 59%
- Laptop computer: 58%
- Desktop computer: 57%
- Document camera or digital overhead projector: 56%
- Stationary gaming device: 55%
- Printer: 54%
- HDTV: 53%
- USB Thumbdrive/portable harddrive: 52%
- Digital SLR camera: 50%
- Netbook: 48%
- Interactive whiteboard (e.g., SMART board): 47%
- DVD player: 44%
- mp3 player/music device (other than iPod): 42%
- Smartpen: 41%
- Blu-ray player: 40%
- Scanner: 40%
- Digital point and shoot camera: 39%
- Internet-ready TV: 38%
- Internet device that attaches to TV: 38%
- Other tablet - not an iPad: 37%
- Student clickers or student response systems: 37%
- Net: Smartphones: 35%
- Flip video camera: 35%
- Webcam: 35%
- iPod: 32%
- Digital video camera: 31%
- Other mobile/cell phone: 30%
- DVR: 30%
- iPad: 30%
- eReader (e.g., Kindle, NOOK): 29%
### Agreement with Statements about Technology

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My institution uses the technology it has effectively</td>
<td>22%</td>
<td>37%</td>
</tr>
<tr>
<td>I know more about how to use technology than my professors</td>
<td>22%</td>
<td>29%</td>
</tr>
<tr>
<td>My instructors use technology frequently enough</td>
<td>20%</td>
<td>37%</td>
</tr>
<tr>
<td>Technology makes professors better at their job</td>
<td>19%</td>
<td>28%</td>
</tr>
<tr>
<td>My institution needs more technology</td>
<td>19%</td>
<td>24%</td>
</tr>
<tr>
<td>Technology is integrated seamlessly into my courses</td>
<td>19%</td>
<td>27%</td>
</tr>
<tr>
<td>My instructors use technology effectively</td>
<td>19%</td>
<td>36%</td>
</tr>
<tr>
<td>My instructor requires help to get technology up and running</td>
<td>12%</td>
<td>19%</td>
</tr>
<tr>
<td>Instructors don’t know how to use technology that is available</td>
<td>8%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Q13. And how much do you agree with each of the following statements about technology, as it relates to your college experience?
**UNEVEN PERCEPTION OF TECHNOLOGY...**

**TECHNOLOGY ASSISTANCE OPPORTUNITIES**

"Professors should be able to actually use the technology that is available to them. Many of my professors must enlist the help of students to get the technology up and running which wastes valuable class time."

"I hate that when you actually need the technology to work at our school, it never does."

"The campus needs a more reliable Wi-Fi connection, available everywhere. It's gone out repeatedly and there always seems to be new bugs every month!"

"I'd like them to use Blackboard to give us more resources outside the classroom, to post grades, and to have discussions outside the classroom. The tools are all there, but they're not used."

"Professors can utilize emails a lot more to inform the class of important announcements."

"I would like if my college had more up-to-date technology."

"Videoconferencing and webcams could and should be more widely used. The technology is widely available and is easy to use, and can help bring these online classes to life and give the teacher more influence over their material."

"Make the technology more integrated to the learning environment and use more than just PowerPoint."

"Finding some way to make eBooks more widely available to students would be amazing."

Q14. Please describe in as much detail as you can how your college/university or professors could use technology better when it comes to providing you with the best possible college and learning experience. Please mention any additional technology that you think would be beneficial to your education, or ways to make current technology use more effective.
KEY FINDING 4 – FACEBOOK-GENERATION STUDENTS JUGGLE PERSONAL AND ACADEMIC INTERACTIONS
JUGGLE INTERACTIONS…
SOCIAL NETWORK USE—NOT UNIVERSAL

Social Networking Activities Students Do At Least Once a Month

- Use a social networking site: 86%
- Participate on online forums or bulletin boards: 32%
- Participate in online chats, chat events, webinars: 24%
- Participate in online fundraising/social change activities: 7%
- Participate in geotagging activities: 6%
- Participate in social studying activities: 6%
- Post music (you've created) to a music-sharing website: 5%
- Play location-based games: 3%
- None of the above: 8%

Q19. Do you do any of the following activities on a regular basis (by “regular” we mean at least once a month)?
JUGGLE INTERACTIONS…
USE FACEBOOK TO COMMUNICATE

Agreement with Statements about Social Networking

I am comfortable using Facebook or other social networking sites to communicate with other students about coursework.

- 32% agree
- 26% somewhat agree
- 18% slightly agree
- 14% neither agree nor disagree
- 10% disagree

I like to keep my academic life and my social life separate.

- 30% agree
- 24% somewhat agree
- 27% slightly agree
- 14% neither agree nor disagree
- 5% disagree

It’s important to have an online forum to communicate and interact with other students about coursework outside the classroom.

- 25% agree
- 28% somewhat agree
- 28% slightly agree
- 11% neither agree nor disagree
- 8% disagree

A class online discussion board is better for helping me connect with other students about coursework than a social networking site like Facebook.

- 27% agree
- 24% somewhat agree
- 26% slightly agree
- 13% neither agree nor disagree
- 9% disagree

Q20. How much do you agree with the following statements about the use of social networking sites such as Facebook in conjunction with your learning?
JUGGLE INTERACTIONS… “FRIENDING” BY AN INSTRUCTOR?

Q21. Let’s say a teacher or professor wanted to “Friend” you for academic purposes. Is that appropriate?

Appropriateness of Teacher or Professor “Friending” You for Academic Purposes

- Not Appropriate: 39%
- Appropriate: 31%
- Neutral: 30%
KEY FINDING 5 – STUDENTS PREFER, AND SAY THEY LEARN MORE, IN CLASSES WITH ONLINE COMPONENTS
Q17. What type of learning environment do you generally prefer?

**Preferred Learning Environment**

- Seminars and other smaller classes with some online components: 36%
- Classes that give me the option to use as many or as few online components as I need to: 22%
- Large lecture classes with some online components: 16%
- Seminars and other smaller classes with no online components: 10%
- Seminars and other smaller classes that are completely online: 6%
- Large lecture classes with no online components: 5%
- Large lecture classes that are completely online: 5%
STUDENTS PREFER ONLINE COMPONENTS…

MIXED SIGNALS ABOUT ONLINE-ONLY

Does an online course have the same educational value as an in-person course?

- Yes, online courses provide equal value: 30%
- No, online courses do not provide equal value: 58%
- Don't know: 12%

Does your institution offer exclusively online courses?

- Yes: 80%
- No: 10%
- Don't know: 10%

Have you taken a course entirely online?

- Yes: 65%
- No: 35%

(Among those whose institutions offer online courses)

n=2,395

Q18b. Generally speaking, do you believe a course taken only online provides an equal educational value compared with a course taken in person in a classroom, or not?

Q18c. Does your institution offer any courses for which the instruction takes place exclusively in an online environment, or not?

Q18d. Have you ever taken a course entirely online?
ECAR RECOMMENDATIONS
RECOMMENDATIONS

- Investigate your students’ technology needs and preferences, and create an action plan to better integrate technology into courses and help students access institutional and academic information from their many and diverse devices and platforms.

- Provide professional development opportunities and incentives so that instructors can make better use of the technology they have and feel more comfortable with the technologies students find more engaging and relevant.
RECOMMENDATIONS, cont.

- Expand or enhance students’ involvement in technology planning and decision making.

- Nail the basics. Help faculty and administrators excel at supporting students’ use of core productivity software and applications for academic use, including, e-mail, word processing, spreadsheets, content or learning management systems, library sites, and bibliography tools.
RECOMMENDATIONS, cont.

- Meet students’ expectations for anytime, everywhere, Wi-Fi access on the devices they prefer to use.

- Make more and better use of technologies that students value—and those that are easily integrated into learning experiences in the shared environments in higher education (e.g., tablets, smartphones, student response systems or clickers). In many cases, these are the technologies that distinguish highly rated from less highly rated institutions on the effective use of technology today.
RECOMMENDATIONS, cont.

- Meet students’ expectations for joining the consumer migration to e-content.

- Establish/refine social media policies utilizing information about how your students use social media to enhance their educational experience.

- Use technology in more transformative ways, such as participatory and collaborative interactions and for higher-level teaching and learning that is engaging and relevant to students’ lives and future plans. Use technology more to extend learning beyond the classroom.
RECOMMENDATIONS, cont.

 Give students different options for interacting with the institution and with instructors, including “standard” and more forward-leaning options. Leverage the value that students find in instructional relationships, using face-to-face, online, and blended strategies.

 Move strategically toward blended/hybrid learning environments to meet students’ preferred styles of learning. Offer many different ways for students to engage in learning using technology and meet differentiated needs (e.g., for different student populations and preferences, academic disciplines, and coursework).
FOR MORE INFORMATION

ECAR National Study of Students and Information Technology in Higher Education, 2011
http://www.educause.edu/library/ERS1103

Eden Dahlstrom
ECAR Senior Research Analyst
edahlstrom@educause.edu