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## **The Digital Revolution and Higher Education**

### College Presidents, Public Differ on Value of Online Learning

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# The Digital Revolution and Higher Education

## College Presidents, Public Differ on Value of Online Learning

*By Kim Parker, Amanda Lenhart and Kathleen Moore*

### EXECUTIVE SUMMARY

This report is based on findings from a pair of Pew Research Center surveys conducted in spring 2011. One is a telephone survey of a nationally representative sample of 2,142 adults ages 18 and older. The other is an online survey, done in association with the Chronicle of Higher Education, among the presidents of 1,055 two-year and four-year private, public, and for-profit colleges and universities.

Here is a summary of key findings:

**The Value of Online Learning.** The public and college presidents differ over the educational value of online courses. Only 29% of the public says online courses offer an equal value compared with courses taken in a classroom. Half (51%) of the college presidents surveyed say online courses provide the same value.

**The Prevalence of Online Courses.** More than three-quarters of college presidents (77%) report that their institutions now offer online courses. These courses are more prevalent in some sectors of higher education than in others. While 89% of four-year public colleges and universities offer online classes, just 60% of four-year private schools offer them.

**Online Students.** Roughly one-in-four college graduates (23%) report that they have taken a class online. However, the share doubles to 46% among those who have graduated in the past ten years. Among all adults who have taken a class online, 39% say the format's educational value is equal to that of a course taken in a classroom.

**The Future of Online Learning.** College presidents predict substantial growth in online learning: 15% say most of their current undergraduate students have taken a class online, and 50% predict that 10 years from now most of their students will take classes online.

**Digital Textbooks.** Nearly two-thirds of college presidents (62%) anticipate that 10 years from now, more than half of the textbooks used by their undergraduate students will be entirely digital.

**The Internet and Plagiarism.** Most college presidents (55%) say that plagiarism in students' papers has increased over the past 10 years. Among those who have seen an increase in plagiarism, 89% say computers and the internet have played a major role.

**Do Laptops and Smartphones Belong in the Classroom?** More than half of recent college graduates (57%) say when they were in college they used a laptop, smartphone or tablet computer in class at least sometime. Most colleges and universities do not have institutional guidelines in place for the use of these devices in class. Some 41% of college presidents say students are allowed to use laptops or other portable devices during class; at 56% of colleges and universities it is up to the individual instructors. Only 2% of presidents say the use of these devices is prohibited.

**College Presidents and Technology.** The leaders of the nation's colleges and universities are a tech-savvy group. Nearly nine-in-ten (87%) use a smartphone daily, 83% use a desktop computer and 65% use a laptop. And they are ahead of the curve on some of the newer digital technologies: Fully half (49%) use a tablet computer such as an iPad at least occasionally, and 42% use an e-reader such as a Kindle or Nook.

**College Presidents and Social Networking.** Roughly one-third of college presidents (32%) report that they use Facebook weekly or more often; 18% say they use Twitter at least occasionally.

## OVERVIEW

As online college courses have become increasingly prevalent, the general public and college presidents offer different assessments of their educational value. Just three-in-ten American adults (29%) say a course taken online provides an equal educational value to one taken in a classroom. By contrast, fully half of college presidents (51%) say online courses provide the same value.

These findings are from a pair of Pew Research Center surveys conducted in spring 2011. One is a telephone survey taken among a nationally representative sample of 2,142 adults ages 18 and older. The other is an online survey, done in association with the Chronicle of Higher Education, among the presidents of 1,055 colleges and universities nationwide.<sup>1</sup>

More than three-quarters of the nation's colleges and universities now offer online classes, according to the survey of college presidents, and about one-in-four college graduates (23%) have taken a course online, according to the general public survey. Among those who have graduated in the past decade, the figure rises to 46%. Adults who have taken a course online have a somewhat more positive view of the value of this learning format: 39% say a course taken online provides the same educational value as one taken in person, a view shared by only 27% of those who have not taken an online course.

Online learning is more common in some sectors of higher education than in others. Among the presidents of four-year public colleges and universities, 89% report that their institution offers classes online. Just six-in-ten presidents of private four-year colleges report the same. These private college presidents are among the most skeptical about the value of online learning. Only 36% believe a course taken online provides the same value as a class taken in person. This compares with 50% of four-year public university presidents.

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### Learning Online vs. in a Classroom

*% saying online courses offer an equal educational value compared with courses taken in a classroom*



Note: General public figure is from a telephone survey conducted on landline and cellular phones March 15-29, 2011 (N=2,142). College presidents figure is from a web survey conducted March 15-April 24, 2011 (N=1,055 college and university presidents).

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<sup>1</sup> Findings for the general public are based on a telephone survey conducted on landline and cellular phones March 15-29, 2011 among 2,142 adults nationwide. Findings for the college presidents are based on a web survey conducted March 15-April 24, 2011 among 1,055 college and university presidents nationwide. Presidents of all colleges, public and private (for-profit and not for profit) that met the following criteria were invited to participate in the survey: 1) degree granting, 2) accredited or pre-accredited, and 3) a minimum enrollment of 500 students.

The vast majority of two-year colleges offer online courses (91%), and their leaders are among the most likely to believe that online learning is comparable to learning in a classroom. Two-thirds of the presidents of two-year colleges say an online course provides an equal educational value when compared with a course taken in person. Among the leaders of for-profit colleges and universities, 71% report that their institutions offer classes online and more than half (54%) say these classes offer the same value as classes taken in person.

Of those colleges and universities that offer online courses, nearly six-in-ten (58%) grant degrees for which all the course work can be completed online, according to their leaders. Public institutions are more likely than private ones to provide this option (66% vs. 47%).

Online courses are not necessarily the equivalent of distance learning. Among residential colleges and universities that offer online courses, 88% offer online classes to their students who live on campus.

### Looking Ahead: More Growth in Digital Learning

Over the past decade, enrollment in online courses at colleges and universities around the country has grown at a greater rate than overall higher education enrollment. According to surveys conducted by the College Board and the Babson Survey Research Group, the number of students at degree-granting postsecondary institutions taking at least one online course increased by 21% from the fall of 2008 to the fall of 2009. Over that same one-year period, total enrollment increased by only 1.2%.<sup>2</sup>

College presidents see this trend continuing.

While 15% report that more than half of their current undergraduate student body has taken at least one course online, 50% predict that 10 years from now a majority of their students will be taking classes online.

#### College Presidents See Potential For Growth in Online Learning

*% of college presidents saying ...*



Note: Based on survey of college presidents. Current numbers reflect percent of all college presidents who said 51% or more of their students have taken a course online.

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<sup>2</sup> These surveys were conducted for the Sloan Foundation as part of an ongoing series of surveys on online education. See "Class Differences: Online Education in the United States, 2010" (<http://sloanconsortium.org/publications/survey/index.asp>).

Whether learning takes place in a virtual classroom or in a more traditional setting, the textbooks used by college students are becoming increasingly high-tech. Nearly two-thirds of the presidents surveyed (62%) predict that 10 years from now more than half of their undergraduate textbooks will be entirely digital.

### **Laptops, the Internet and Plagiarism**

Through their use of cellphones, smartphones, tablet computers and laptops, today's college students are accustomed to being constantly connected. Increasingly, this has meant bringing these technologies with them into the college classroom. In the Pew Research survey of the general public, more than half of recent college graduates and currently enrolled college students report that they have often (35%) or sometimes (22%) used these types of devices during class time. One-in-five (19%) say they hardly ever used these devices in the classroom and 22% say they never have.<sup>3</sup>

The institutional rules about the use of laptops and other portable computers during class tend to vary across and even within colleges and universities. A narrow majority of college presidents (56%) say that at their institution it is up to the individual instructor to decide whether students can use laptops or other portable computers in the classroom. Four-in-ten college presidents (41%) say that at their institution, students are allowed to use laptops during class. Only 2% say laptops are prohibited in class.

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<sup>3</sup> This question was asked of adults who graduated from college between 2006 and 2010 and adults who were currently enrolled in college (n=366).

Students' ease of access to the digital world has created some problems for educators. A majority of college presidents surveyed say they have seen a rise in plagiarism over the past decade, and most believe that technology is a major factor behind that rise. Some 55% of college presidents say plagiarism has increased in college students' papers over the past 10 years. An additional 40% say that plagiarism has stayed the same over this period. Just 2% say it has decreased.

Of those who say plagiarism is on the rise, the overwhelming majority (89%) believe that computers and the internet have played a major role in this trend. Only 7% say these new technologies have played a minor role.

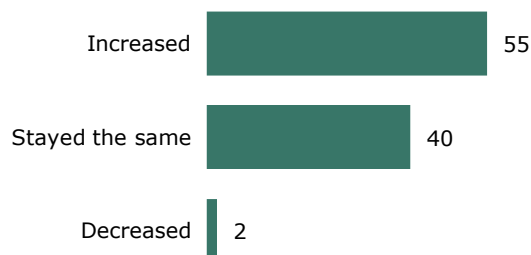
### A Disproportionate Impact across Institutions

These broad trends in technology use are not taking hold at the same pace throughout the nation's institutions of higher learning. There is wide variance in adoption rates among colleges and universities. Aside from the differences among public, private, two-year and for-profit institutions, there are clear divisions across other dimensions. The presidents of liberal arts colleges and highly selective institutions are less likely than other college presidents to report that their schools offer online classes. And at the highly selective schools, fewer students are taking online classes when they are offered.

For example, among the presidents of four-year liberal arts colleges, 61% report that their

### Plagiarism in Papers Among College Students

*% of presidents saying over the past 10 years it has ...*

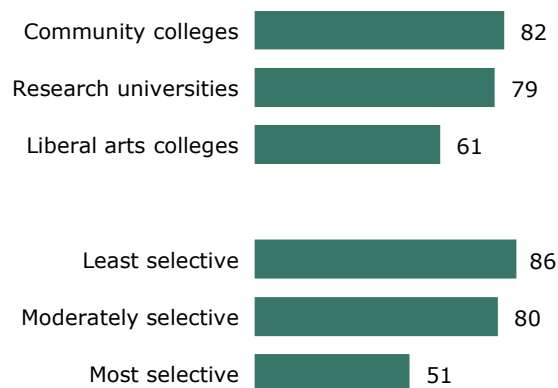


Note: Based on survey of college presidents. No answer responses not shown.

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### Online Learning by Type of Institution, Selectivity

*% of college presidents saying their institution offers online classes*



Note: Based on survey of college presidents. Selectivity categories based on Barron's Profile of American Colleges 2011.

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institution offers classes that are taught exclusively online. By contrast, 79% of the presidents of research universities and 82% of those at community colleges say they offer online classes to students.<sup>4</sup>

## Other Key Findings

- College presidents' beliefs about the mission of higher education are linked to their views and experiences with online learning. Among those who believe the most important role college plays is to prepare students for the working world, 59% say online classes provide the same educational value as in-person classes. Among presidents who say the role of college is to promote personal and intellectual growth, only 43% say online learning offers an equal value.
- College presidents are major adopters of new digital technologies such as e-readers, tablets and smartphones: 87% use a smartphone on a daily basis, 32% use a tablet computer such as an iPad daily and 15% say they use an e-reader such as a Kindle or Nook every day.
- Among college graduates who have taken a class online, 15% have earned a degree entirely online.

## About the Report

This report is based on two Pew Research Center surveys conducted in the spring of 2011. The first, a survey of college presidents, was done in association with the Chronicle of Higher Education. The presidents' survey was conducted online from March 15 through April 24, 2011, among the leaders of 1,055 two-year and four-year private, public and for-profit colleges and universities with enrollments of 500 or more. In addition, the Pew Research Center conducted a survey of the general public from March 15 to 29, 2011. The general public survey was conducted by landline and cellular telephone among a nationally representative sample of 2,142 adults living in the continental United States.<sup>5</sup>

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<sup>4</sup> Colleges were ranked "most selective" (n=196), "moderately selective" (n=351) and "least selective" (n=150) based on ratings provided by Barron's Profiles of American Colleges 2011. For this analysis, "community colleges" are those that offer two-year associates degrees (n=327); "research universities" are those that offer master's degrees, professional degrees or PhDs (n=558); and "liberal arts" colleges are those that offer bachelor's degrees but do not offer master's degrees, professional degrees or PhDs (n=163).

<sup>5</sup> An earlier report based on these two Pew Research surveys was released May 15, 2011. See "Is College Worth It? College Presidents, Public Assess Value, Quality and Mission of Higher Education," Pew Research Center's Social & Demographic Trends project, May 2011 (<http://pewsocialtrends.org/2011/05/15/is-college-worth-it/>). Questions relating to online learning were not included in that earlier report.



Analysis and writing of this report was carried out jointly by the staffs of the Pew Research Center's Social & Demographic Trends project and the Pew Internet & American Life Project.

The report is divided into three sections: Online Learning; Educational Hardware and Content; and College Presidents and Their Use of Technology. A detailed methodology and topline results for the general public and the college presidents surveys can be found in the appendices.

## ONLINE LEARNING

In an effort to make higher education more flexible and accessible to more people, many American colleges and universities offer online classes and even grant degrees for courses of study in which all the course work was completed online. Of the 1,055 college and university presidents interviewed for the Pew Research survey, 77% reported that their institution offers courses for which the instruction takes place exclusively in an online environment.

The extent to which online learning has been adopted by institutions of higher education varies widely, and there are significant differences by sector. Two-year colleges are the most likely to offer online course work, with 91% offering online courses. Nearly as high a share of public four-year colleges and universities (89%) offer online courses. Seven-in-ten for-profit colleges and universities (71%) offer classes online. Private, four-year colleges are the least likely to offer online courses, though six-in-ten of these institutions offer courses online.

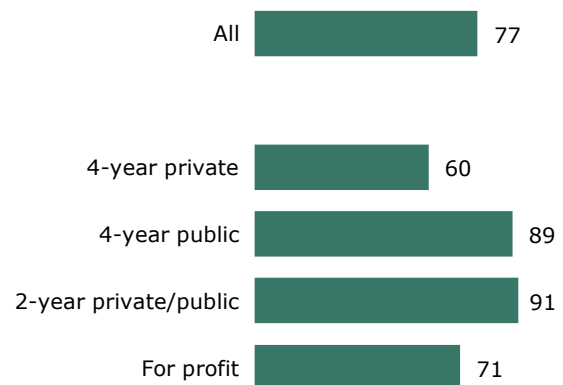
Religiously affiliated schools and highly selective colleges are significantly less likely than other schools to offer online courses.

While 65% of religiously affiliated colleges and universities offer online classes, fully 80% of schools without a religious affiliation offer those courses. Among four-year colleges and universities, barely half of highly selective schools (51%) offer online courses, compared with 80% of mid-tier schools and 86% of colleges with low levels of selectivity.

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### Online Learning by Sector

*% of college presidents saying their institution offers online classes*



Note: Based on survey of college presidents.

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## Students and Online Learning

While many schools offer online courses, only a minority of students are taking advantage of these offerings. Again, adoption of online learning by students differs across institutions.

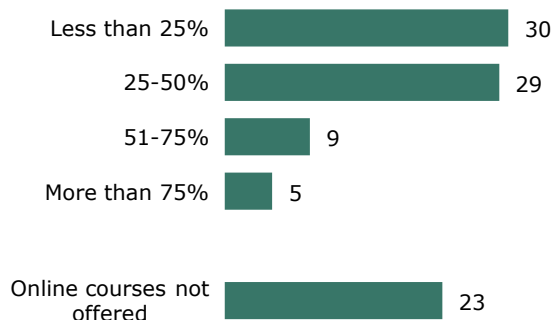
Across all colleges and universities, three-in-ten presidents report that less than a quarter of their currently enrolled undergraduate students have taken at least one course online. Roughly the same proportion (29%) says between one-quarter and half of their students have taken an online course. Only 15% report that more than half of their students have taken an online course.

College presidents see the potential for growth in this area. Fully half of those surveyed predict that 10 years from now a majority of their undergraduate students will be taking a class online. The presidents of two-year colleges anticipate the most growth in this area. Roughly two-thirds (65%) say that in 10 years, most of their students will be taking at least one online course (up from 16% currently). A majority (54%) of the leaders of for-profit institutions also predict that by 2021 most of their students will be enrolled in online classes.

The presidents of four-year public and private colleges don't anticipate quite as much growth over the next decade. Among the presidents of four-year public institutions, 45% say in 10 years at least half of their students will be

## Presidents Report on Student Enrollment in Online Classes

*% of current undergraduate students who have taken at least one course online*

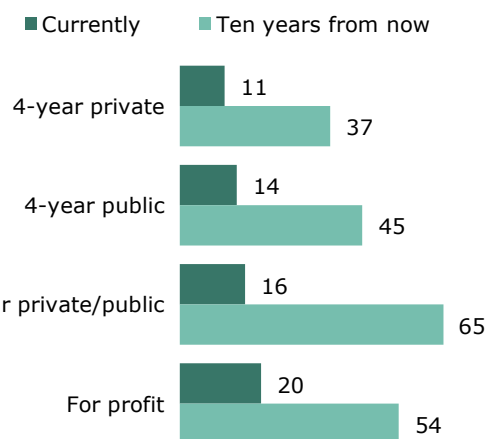


Note: Based on all college presidents. Don't know/Refused responses not shown. Subcategories may not equal reported sum due to rounding.

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## Presidents Predict the Future of Online Learning

*% saying more than half of their undergraduate students have taken/will be taking an online class*



Note: Based on all college presidents.

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taking an online course (up from 14% now). And among the presidents of four-year private colleges, 37% say most of their students will be taking courses online 10 years from now.

According to the Pew Research survey of the general public, roughly one-in-four college graduates (23%) report that they have taken a course online for academic credit. Among recent college graduates, that share rises dramatically. Nearly half (46%) of those who graduated in 2000 or later say they have taken a class online.

Black and Hispanic college graduates are more likely than whites to have taken a class online (35% vs. 21%). In addition, graduates who attended college later in life are more likely than those who went to college right after high school to have some experience with online learning. More than one-third (36%) of college graduates who completed college when they were 30 or older say they took classes online. This compares with only 17% of graduates who finished college when they were 22 or younger. In addition, college graduates who majored in business are more likely than those who majored in science, engineering or liberal arts to have taken online courses.

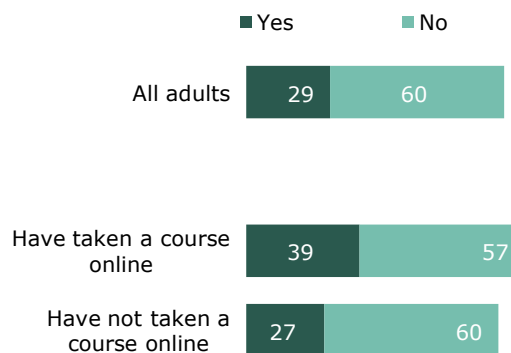
## The Value of Online Learning

Along with the growing prevalence of online learning comes a real sense of skepticism among the public about the value this format offers students. Respondents in the general public survey were asked whether they thought a course taken online provides an equal educational value as a course taken in person in a classroom. Only 29% of all respondents said online classes offer an equal value. Six-in-ten said online courses do not offer the same value as classes taken in person, and 11% were unsure.

Views on this issue are fairly consistent across major demographic groups. In spite of the fact that they have grown up in a digital world, young adults are as skeptical about online learning as are their older counterparts. Among those younger than 30, only 28% say a

### Public Views on Learning Online vs. in the Classroom

*In general, do you think a course taken only online provides an equal educational value compared with a course taken in person in a classroom, or not? (%)*



Note: Based on general public survey. Don't know/Refused responses not shown.

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course taken online is equal in value to a course taken in person; 67% say it is not. The same is true for those ages 30 and older: 30% say an online class offers the equivalent value of a class taken in person, 58% say it does not.

Most college graduates have a negative view of the value of a class taught online as opposed to one taught in a more traditional classroom setting. Only about one-in-five college graduates (22%) say an online course offers an equal educational value, while 68% say it does not. Among non-college graduates, 32% say online classes are equal in value to classes taught in person.

Those who have personal experience with online learning have a somewhat more positive view of its value. Even so, a majority rejects the notion that online classes offer the same educational value as in-person classes. Roughly four-in-ten (39%) of those who have taken an online course say online classes in general provide an equal value when compared with classes taken in person in a classroom, and 57% say they do not. By comparison, 27% of those who have never taken a class online say the value is equivalent to being in the classroom.

Compared with the public, college presidents have a more positive view of the value of online learning. Still, they are divided over whether a class taught online provides an equal educational value as a class taught in person. Overall, 51% of college presidents say online classes offer an equal value, and 48% say they do not.

Presidents who lead colleges where online learning is part of the curriculum have a much more positive assessment of the value these classes provide than those who oversee institutions with no online classes. Among presidents of colleges that offer online courses, 59% say these classes are equal in value to in-person classes. Only 21% of presidents whose institutions do not offer online classes agree.

Looking across different sectors of higher education, presidents of two-year colleges are among the most likely to say online classes are just as valuable as classes taken in person (66%). More than half of the presidents of for-profit colleges (54%) agree that online classes provide an equivalent educational value.

Among the presidents of four-year public universities, opinion is more evenly divided: 50% say a course taken online is equal in value to a course taken in person; 48% say it is not. The leaders of four-year private colleges are among the most skeptical about the value of online learning: 36% say online classes provide the same value as classes taken in person, while 62% say they do not.

Beliefs about the mission of higher education are linked to presidents' views about the value of online learning. Those who believe that the mission of higher education is to prepare

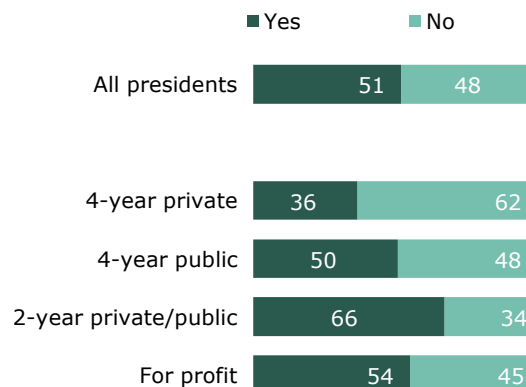
students for the workforce are more likely to say that online courses provide equal value to in-person classes (59% vs. 40%). Meanwhile, presidents who believe that the mission of higher education is to promote personal and intellectual growth are less enthusiastic about the value of online courses—43% say they are equal in value to in-person classes, while a 56% majority says they are not.

## Online Degrees and on-Campus Options

Online courses are provided not simply to increase student access to certain classes, but in many cases the courses are offered as a part of a fuller online degree program. Of the roughly three-quarters of American campuses that offer online courses, more than half (58%) offer degrees for programs where all of the course work has been completed online, according to their presidents. Online degrees are most prevalent at for-profit institutions, where 71% offer them, and at four-year public institutions, of which two-thirds (66%) offer degrees for work completed entirely online. Among two-year colleges that offer online classes, 54% also offer online degrees, and among four-year private schools, less than half do so (47%).

## Presidents' Views on Learning Online vs. in the Classroom

*Generally speaking, do you believe a course taken online provides an equal educational value compared with a course taken in person in a classroom, or not? (%)*



Note: Based on survey of college presidents. Don't know/Refused responses not shown.

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Institutions that do not offer full degrees for courses taken online are less likely to have a large percentage of students taking online courses. Half (54%) of schools where less than one-quarter of students take online courses do not offer online degrees. In contrast, 82% of schools where at least three-quarters of the students take online classes offer degrees for work completed entirely online.

While many online courses are designed to facilitate distance learning for those who cannot or choose not to be on campus, many campuses now have a substantial number of on-campus students taking courses online. According to their presidents, half of universities and colleges that offer online courses make at least some of those courses available for their on-campus undergraduate students; 7% do not make these courses available; and 42% do not have residential students. Of residential colleges that offer online classes, 88% offer online courses to on-campus undergraduates, and 12% do not. On-campus online courses are more prevalent at four-year public schools (96% offer these classes to their residential undergraduate students) than at four-year private schools (73%).

## EDUCATIONAL HARDWARE AND CONTENT

In addition to expanding access to educational opportunities through online learning, digital technology shows promise in revolutionizing other aspects of education. College texts are big business, with the higher education market estimated at more than \$8 billion annually.<sup>6</sup> But paper may be giving way to digital versions—whether consumed on a web page, a library’s “e-reserves” or through an e-reader such as a Nook or Kindle. The advent of digital textbooks has already begun; digital textbooks make up about 3% of sales, according to the National Association of College Stores.<sup>7</sup> And in July, Amazon announced the option to rent textbooks on the Kindle for as little as 30 days.<sup>8</sup>

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<sup>6</sup> Source: “Total market size based on Eduventures Textbook Market Study and the National Association of College Stores, 2009.” <http://blog.xplana.com/reports/digital-textbook-sales-in-u-s-higher-education-%E2%80%93-a-five-year-projection/#15> accessed on July 7, 2011.

<sup>7</sup> U.S. textbook sales in 2010, according to the National Association of College Stores, via [The New York Times](http://www.nytimes.com/2011/06/06/business/media/06iht-EDUCSIDE06.html?_r=1) “Digital Textbooks Slow to Catch On,” June 8, 2011 [http://www.nytimes.com/2011/06/06/business/media/06iht-EDUCSIDE06.html?\\_r=1](http://www.nytimes.com/2011/06/06/business/media/06iht-EDUCSIDE06.html?_r=1) Accessed on July 12, 2011.

<sup>8</sup> Choney, Suzanne. “Rental Textbooks Available on Kindle.” July 18, 2011, accessed on July 18, 2011 [http://technolog.msnbc.msn.com/\\_news/2011/07/18/7105056-rental-textbooks-available-on-kindle](http://technolog.msnbc.msn.com/_news/2011/07/18/7105056-rental-textbooks-available-on-kindle)

The college presidents surveyed believe that a rapid conversion to digital textbooks is just around the corner. Just under two-thirds of today's college presidents (62%) believe that more than half of the textbooks used by students at their institution a decade from now will be entirely digital. Just 7% of presidents believe that less than a quarter of the texts their students will use in the future will be digital, and 30% estimate the share will be between 25% and 50%.

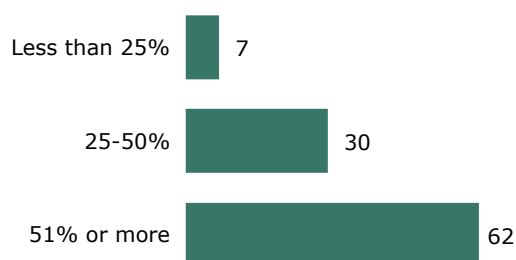
Even those presidents who oversee institutions where online learning is less prevalent predict a dominant role for digital textbooks. Among the leaders of four-year private colleges, 60% say that 10 years from now more than half of the textbooks used by their students will be entirely digital. This compares with 59% of presidents from four-year public universities, 65% of presidents from two-year institutions and 66% of presidents from for-profit colleges.

## Laptops on Campus

As more and more students own laptops and other portable computing devices, and as course texts migrate into digital environments, schools have a policy decision before them—allow laptops in the classroom for note-taking and e-textbook reading; ban their use during class time as an unwelcome distraction from learning; or allow instructors to make their own decisions about whether to allow the devices in class. Most colleges and universities have settled on a middle ground for the time being. A narrow majority of college presidents (56%) report that it is up to the instructor as to whether students can use portable computers during class. An additional 41%

## Presidents Predict the Future of Digital Textbooks

*Ten years from now, what percentage of student textbooks will be entirely digital? (%)*

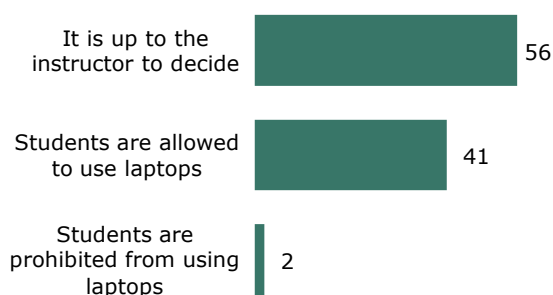


Note: Based on survey of college presidents. Presidents were asked specifically about textbooks used by their *undergraduate* students. Don't know/Refused responses not shown.

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## Use of Laptops in the Classroom

*What are your institution's guidelines on students' use of laptops/portable computers during class? (%)*



Note: Based on survey of college presidents. Don't know/Refused responses not shown.

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say that students are allowed to bring their laptops to class. And just 2% say their institutions prohibit laptops from the classroom.

## Plagiarism and New Technologies

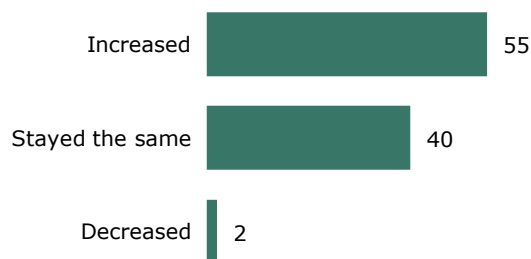
While technology has shown promise in expanding opportunities for distance learning and for creating less expensive and more interactive learning materials, it may also facilitate certain negative behaviors including plagiarism and cheating. When asked about plagiarism in papers among college students, the majority of college presidents (55%) say that it has increased in the past decade. Another large portion of presidents (40%) believe that it has stayed the same over the past 10 years. Very few college presidents (2%) believe that plagiarism has decreased over the past decade.

These findings are similar across different types of colleges and universities, nonprofits and for-profits, four-year and two-year institutions, community colleges, liberal arts colleges and research universities as well as across the spectrum of admissions selectivity.

When asked whether they feel that computers had played a role in the increase in plagiarism, presidents overwhelmingly believe that they have. Roughly nine-in-ten presidents (89%) believe that computers and the internet have played a major role in the increase in plagiarism on papers over the past decade. Just 7% say they have played a minor role, and 1% say they have not played a role in the increase.

## Plagiarism in Papers Among College Students

*% of presidents saying over the past 10 years it has ...*

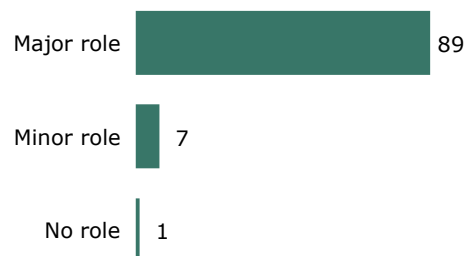


Note: Based on survey of college presidents. Don't know/Refused responses not shown.

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## Plagiarism and Technology

*How much of a role have computers and the internet played in the increase in plagiarism? (%)*



Note: Based on college presidents who said plagiarism in papers among students has increased over past decade (n=556). Don't know/Refused responses not shown.

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## COLLEGE PRESIDENTS AND THEIR USE OF TECHNOLOGY

College presidents are adept at using multiple forms of technology. They have high rates of access to technology, with 91% of presidents reporting they use a laptop computer at least occasionally, 88% saying they use a smartphone and 87% saying they use a desktop computer. They are also early adopters of new technologies such as tablet computers and e-readers. Roughly half of the college presidents surveyed (49%) report that they use a tablet computer (such as an iPad) at least occasionally, and 42% use an electronic book device (such as a Kindle or Nook). Just under one-third of presidents (32%) report using a mobile phone that is not a smartphone on at least an occasional basis.

College presidents employ multiple forms of technology (laptop and desktop computers, smartphones and other cell phones) to varying degrees on a daily basis. Presidents most often rely on smartphones, with 86% using them several times a day. Desktop computers are the second most often used technology, with 82% of presidents using them several times a day, a third higher than laptops (56%). One-in-four (24%) report that they use other mobile phones several times a day.

Roughly one-quarter (26%) of the college presidents surveyed say they use a tablet computer several times a day. Nearly one-in-ten (8%) use an e-reader this often.

Compared with the general public, college presidents are proving to be early adopters of many of these new technologies. According to a

2011 survey conducted by the Pew Internet & American Life Project, 12% of all adults had an e-reader such as a Kindle or Nook. This compares with 42% of college presidents who report using such a device at least occasionally.<sup>9</sup> Similarly, while only 8% of the general public report

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### College Presidents and Technology Use

(%)

	Use at least occasionally	Use several times a day
Laptop computer	91	56
Desktop computer	87	82
Smartphone	88	86
Tablet computer (like an iPad)	49	26
E-reader (like a Kindle or Nook)	42	8
Other mobile phone	32	24

Notes: Based on survey of college presidents.

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<sup>9</sup> Please note that the question wording was different for the college presidents' survey and the general population survey, which may complicate comparing the statistics. Presidents were asked, "How often, if at all, do you use the following?" The general population was asked, "Please tell me if you happen to have each one, or not. Do you have ...?" The general population data are from the Pew Internet & American Life Project's spring 2011 tracking survey and can be accessed in the Twitter Update 2011 report, <http://www.pewinternet.org/Reports/2011/Twitter-Update-2011.aspx>, and in the "Search and Email Still Top the List of Most Popular Online Activities" report, <http://www.pewinternet.org/Reports/2011/Search-and-email.aspx>.

having a tablet computer such as an iPad, 49% of college presidents use this type of technology at least occasionally.

Many college presidents are also utilizing social media outlets such as Facebook and Twitter. Fully half of those surveyed say they use Facebook at least occasionally, with 18% saying they use it every day. Nearly one-in-five (18%) say they use Twitter at least occasionally.

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### College Presidents and Social Media

(%)

	Use at least occasionally	Use daily
Facebook	50	18
Twitter	18	5

Notes: Based on survey of college presidents.

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College presidents may be slightly ahead of the general public in their use of Facebook and Twitter. In the 2011 Pew Internet survey, 45% of all adults said they had used Facebook and 10% had used Twitter. However, college presidents lag behind or are on par with young adults in their use of social media. Among those ages 18-29, 74% use Facebook and 17% use Twitter.

Technology use by college presidents is fairly consistent across different sectors of higher education. While the institutions may differ in the degree to which they have embraced online learning, their leaders are equally adept at using many of the newer technologies. Younger presidents (under age 50) are more likely than their older counterparts to use laptop computers at least daily. There are notable patterns by region as well. Presidents of colleges located in the East are less likely than their counterparts in other regions to use a smartphone daily. East Coasters also lag behind the rest of the country in Facebook adoption. While presidents of 50-55% of the colleges in the Midwest, South and West use Facebook at least occasionally, just 37% of East Coast presidents use the social network.

## APPENDIX 1: SURVEY METHODOLOGY

### About the General Public Survey

Results for the general public survey are based on telephone interviews conducted March 15-29, 2011 among a national sample of 2,142 adults 18 years of age or older living in the continental United States (a total of 1,052 respondents were interviewed on a landline telephone, and 1,090 were interviewed on a cell phone, including 544 who had no landline telephone). The survey was conducted by interviewers at Princeton Data Source under the direction of Princeton Survey Research Associates International (PSRAI). Interviews were conducted in English and Spanish. A combination of landline and cell phone random digit dial (RDD) samples were used; both samples were provided by Survey Sampling International. The landline RDD sample was drawn using traditional list-assisted methods where telephone numbers were drawn with equal probabilities from all active blocks in the continental U.S. The cell sample was drawn through a systematic sampling from dedicated wireless 100-blocks and shared service 100-blocks with no directory-listed landline numbers. Both the landline and cell RDD samples were disproportionately stratified by county based on estimated incidences of African-American and Hispanic respondents. Additional interviewers were obtained with 18-34 year-olds through a combination of additional screening in the cell phone RDD sample, and by re-contacting landline and cell phone respondents ages 18-34 from recent surveys conducted by PSRAI.

<b>Number of Interviews Completed by Sample Source</b>				
	<b>New RDD All Adults</b>	<b>New RDD 18-34</b>	<b>Callback 18-34</b>	<b>Total</b>
Landline	1,001	--	51	1,052
Cellular	<u>805</u>	<u>204</u>	<u>81</u>	<u>1,090</u>
Total	1,806	204	132	2,142

Both the landline and cell samples were released for interviewing in replicates, which are small random samples of each larger sample. Using replicates to control the release of telephone numbers ensures that the complete call procedures are followed for all numbers dialed. At least 7 attempts were made to complete an interview at every sampled telephone number. The calls are staggered over times of day and days of the week (including at least one daytime call) to maximize the chances of making contact with a potential respondent. An effort is made to recontact most interview breakoffs and refusals to attempt to convert them to completed interviews.

Respondents in the landline sample were selected by randomly asking for the youngest adult male or female who is now at home. Interviews in the cell sample were conducted with the person who answered the phone, if that person was an adult 18 years of age or older. The additional interviews with 18-34 year-olds from the cell sample were administered an age screener; those who were in the target age range completed the interview. For the landline callback sample, interviewers asked to speak with the person based on age and gender who participated in an earlier survey. For the cellular callback sample, interviews were conducted with the person who answered the phone once it was confirmed that they were in the target age range.

Weighting is generally used in survey analysis to adjust for effects of sample design and to compensate for patterns of nonresponse that might bias results. The weighting was accomplished in multiple stages to account for the different sample frames as well as the oversampling of 18-34 year-olds. Weighting also balances sample demographic distributions to match known population parameters.

The first stage of weighting accounted for the disproportionately-stratified RDD sample design of the landline and cell samples. In addition, this stage included an adjustment to account for the oversampling of 18-34 year-olds. The first stage weight also included a probability-of-selection adjustment for the RDD landline sample to correct for the fact that respondents in the landline sample have different probabilities of being sampled depending on how many adults live in the household (i.e., people who live with no other adults have a greater chance of being selected than those who live in multiple-adult households). Lastly, this stage of weighting also accounted for the overlap in the landline and cellular RDD frames.

In the second stage of weighting, the combined sample was weighted using an iterative technique that matches gender, age, education, race, Hispanic origin, and region to parameters from the March 2010 Census Bureau's Current Population Survey. The population density parameter is county based and was derived from 2000 Census data. The sample also is weighted to match current patterns of telephone status and relative usage of landline and cell phones (for those with both), based on extrapolations from the 2010 National Health Interview Survey.

The survey's *margin of error* is the largest 95% confidence interval for any estimated proportion based on the total sample – the one around 50%. For example, the margin of error for the entire sample is plus or minus 2.7 percentage points. This means that in 95 out of every 100 samples drawn using the same methods, estimated proportions based on the entire sample will be no more than 2.7 percentage points away from their true values in the population. Sampling errors and statistical tests of significance take into account the effect of weighting. The following table shows the sample sizes and the error attributable to sampling that would be expected at the 95% level of confidence for different groups in the survey:

<b>Group</b>	<b>Sample Size</b>	<b>Plus or minus ...</b>
Total sample	2,142	2.7 percentage points
18-34 year-olds	781	4.5 percentage points
4-year college graduates	757	4.6 percentage points
Non-college graduates (no 4-year degree)	1,372	3.4 percentage points

Sample sizes and sampling errors for other subgroups are available upon request.

In addition to sampling error, one should bear in mind that question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

## About the College Presidents Survey

Results for the college presidents' survey are based on interviews conducted from March 15 to April 24, 2011 among 1,055 college and university presidents under the direction of Princeton Survey Research Associates International. Interviewing was primarily self-administered online by college presidents, however, a phone interview option was made available to any president who requested it (1,022 interviews were completed online and 33 by telephone). The college presidents' survey was done by the Pew Research Center's Social & Demographic Trends project in association with the Chronicle of Higher Education (Chronicle). The list of college presidents was compiled by the Chronicle from the Higher Education Directory and the Integrated Postsecondary Education Data System. The population for this study is college and university presidents of public and private (for-profit and not-for-profit—NFP) institutions in the U.S. that meet the following criteria: (1) degree granting; (2) have received accreditation or pre-accreditation status from a recognized accrediting agency; and (3) had a minimum enrollment of 500 students in the fall of 2009. Institutions in U.S. territories, military institutions, graduate-only institutions, system offices and CEOs of for-profit parent companies were excluded from the survey. Presidents of institutions who oversee multiple eligible locations and branches were included but were only asked to complete the survey once. After the above institutions were excluded and presidents who oversee multiple locations were counted only once, the final list included 3,324 college and university presidents.

All 3,324 presidents on the list were contacted to complete the survey. Each president was mailed a letter on stationery with logos of both the Pew Research Center and the Chronicle of Higher Education on March 10, 2011. The letter was signed by Paul Taylor, executive vice president of the Pew Research Center, and Jeffrey J. Selingo, editor of the Chronicle of Higher Education. This letter was intended to introduce the survey to prospective respondents, describe the nature and purpose of the survey, and encourage participation in the survey. The initial letter contained a URL and a password for a secure website where the survey could be completed. The letter also included a toll-free number for respondents to call if they had questions.

Subsequent requests to complete the survey were sent primarily by email to those who had not yet responded. Three email requests to complete the survey were sent to those who had not yet responded and could be contacted by email (over 90% had working email addresses) on March 16 (to NFP and for-profit), March 30 (to NFP), April 5 (to for-profit) and April 12 (to NFP and for-profit). On March 17, interviewers at Princeton Data Source began calling those without email addresses, as well as those whose email requests had bounced back as undeliverable, in an effort to gather working email addresses and encourage participation online. On April 4 (for NFP) and April 11 (for for-profit) phone calling began to all presidents who had not yet completed the survey, to encourage participation online.

## APPENDIX 2: TOPLINE SURVEY RESULTS

### PEW SOCIAL & DEMOGRAPHIC TRENDS FINAL TOPLINE FOR ONLINE EDUCATION QUESTIONS March 15-April 24, 2011, HIGHER EDUCATION SURVEY WEB SURVEY OF COLLEGE PRESIDENTS TOTAL N=1,055

NOTE: ALL NUMBERS ARE PERCENTAGES. THE PERCENTAGES GREATER THAN ZERO BUT LESS THAN 0.5% ARE REPLACED BY AN ASTERISK (\*). COLUMNS/ROWS MAY NOT TOTAL 100% DUE TO ROUNDING.

#### ASK ALL:

Next we have a few questions about the use of technology in higher education.

Q.41 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?

<u>All</u>		<i>4-year Private</i>	<i>4-year Public</i>	<i>2-year Private/Public</i>	<i>For profit</i>
51	Yes, online courses provide equal value	36	50	66	54
48	No, online courses do not provide equal value	62	48	34	45
2	No answer	2	3	0	1
		(n=412)	(n=253)	(n=315)	(n=75)

#### ASK ALL:

Q.42 Does your institution offer any courses for which the instruction takes place exclusively in an online environment, or not?

#### ASK IF RESPONDENT ANSWERED 'YES' IN Q.42:

Q.43 What percentage of your current [undergraduate] student body has taken at least one course online? Just your best estimate is fine.

<u>All</u>		<i>4-year Private</i>	<i>4-year Public</i>	<i>2-year Private/Public</i>	<i>For profit</i>
77	Yes	60	89	91	71
30	Less than 25%	31	39	23	30
29	25-50%	16	31	50	13
9	51-75%	6	10	13	10
5	More than 75%	4	4	4	11
4	No answer	3	6	2	8
23	No	40	11	9	29
0	No answer	0	0	0	0

**ASK IF RESPONDENT ANSWERED ‘YES’ IN Q.42: [n=820]**

Q.44 Are online courses available for [undergraduate] students who live on campus?

<u>All</u>		<u>4-year Private</u>	<u>4-year Public</u>	<u>2-year Private/Public</u>	<u>For profit</u>
50	Yes, online courses are available for students who live on campus	64	85	31	21
7	No, online courses are not available for students who live on campus	23	4	0	1
42	Institution doesn't have residential students	10	11	68	78
1	No answer	2	0	1	0

**ASK IF RESPONDENT ANSWERED ‘YES’ IN Q.42: [n=820]**

Q.45 Does your institution grant degrees where all the course work has been completed online, or not?

<u>All</u>		<u>4-year Private</u>	<u>4-year Public</u>	<u>2-year Private/Public</u>	<u>For profit</u>
58	Yes	47	66	54	71
41	No	52	34	46	26
1	No answer	1	*	0	3

**ASK ALL:**

Q.46 Just your best guess, 10 years from now, during the typical semester, what percentage of your [undergraduate] students will be taking at least one course online?

<u>All</u>		<u>4-year Private</u>	<u>4-year Public</u>	<u>2-year Private/Public</u>	<u>For profit</u>
18	Less than 25%	33	15	6	15
31	25-50%	30	39	30	26
27	51-75%	18	25	36	28
23	More than 75%	19	20	29	26
1	No answer	*	*	0	5

**ASK ALL:**

Q.47 What are your institution's guidelines regarding students' use of laptops or other portable computers during class?

<u>All</u>		<u>4-year Private</u>	<u>4-year Public</u>	<u>2-year Private/Public</u>	<u>For profit</u>
41	Students are <b>allowed</b> to use laptops or other portable computers during class	41	41	40	41
2	Students are <b>prohibited</b> from using laptops or other portable computers during class	*	0	0	11
56	It is up to the instructor whether students can use laptops or other portable computers during class	58	59	59	47
1	No answer	1	0	*	1



**ASK ALL:**

Q.48 Over the past 10 years, has plagiarism in papers among college students ...?

<u>All</u>		<u>4-year Private</u>	<u>4-year Public</u>	<u>2-year Private/Public</u>	<u>For profit</u>
55	Increased	51	51	57	61
40	Stayed the same	43	44	39	32
2	Decreased	2	2	2	4
3	No answer	4	3	3	2

**ASK IF RESPONDENT ANSWERED "INCREASED" IN Q.48: [n=556]**

Q.49 In your opinion, how much of a role have computers and the internet played in this increase?

<u>All</u>		<u>4-year Private</u>	<u>4-year Public</u>	<u>2-year Private/Public</u>	<u>For profit</u>
89	A major role	89	84	87	93
7	A minor role	7	9	8	5
1	No role	0	1	1	0
4	No answer	4	6	4	2

**ASK IF RESPONDENT ANSWERED "DECREASED" IN Q.48: [n=21]**

Q.50 In your opinion, how much of a role has anti-plagiarism software played in this decrease?

**\*\*\*RESULTS ARE NOT SHOWN DUE TO SMALL SAMPLE SIZES \*\*\***

A major role  
A minor role  
No role  
No answer

**ASK ALL:**

Q.51 Just your best guess, 10 years from now, what percentage of the textbooks used by your [undergraduate] students will be entirely digital?

<u>All</u>		<u>4-year Private</u>	<u>4-year Public</u>	<u>2-year Private/Public</u>	<u>For profit</u>
7	Less than 25%	8	8	4	9
30	25-50%	31	32	30	25
36	51-75%	32	37	42	30
27	More than 75%	28	22	23	36
1	No answer	1	1	*	0

**ASK ALL:**

PRES2 How often, if at all, do you use each of the following?

**RANDOMIZE LIST; ALWAYS ASK ITEM c. BEFORE d.**

## a. Laptop computer

<u>All</u>		<u>4-year</u> <u>Private</u>	<u>4-year</u> <u>Public</u>	<u>2-year</u> <u>Private/Public</u>	<u>For profit</u>
56	Several times a day	61	51	46	69
9	Once a day	9	9	10	5
15	A few times a week	10	20	19	10
12	Less often	9	13	16	7
8	Don't use	9	7	8	7
1	No answer	1	1	1	1

## b. Desktop computer

<u>All</u>		<u>4-year</u> <u>Private</u>	<u>4-year</u> <u>Public</u>	<u>2-year</u> <u>Private/Public</u>	<u>For profit</u>
82	Several times a day	78	89	88	72
1	Once a day	2	1	2	0
2	A few times a week	2	*	*	6
2	Less often	1	1	2	3
12	Don't use	16	8	7	15
1	No answer	1	1	1	3

## c. Smartphone (like a BlackBerry, Droid or iPhone)

<u>All</u>		<u>4-year</u> <u>Private</u>	<u>4-year</u> <u>Public</u>	<u>2-year</u> <u>Private/Public</u>	<u>For profit</u>
86	Several times a day	88	91	83	84
1	Once a day	1	1	2	0
1	A few times a week	1	*	1	0
*	Less often	*	0	*	0
11	Don't use	8	7	13	15
1	No answer	1	*	1	1

## d. Other mobile phone

<u>All</u>		<u>4-year</u> <u>Private</u>	<u>4-year</u> <u>Public</u>	<u>2-year</u> <u>Private/Public</u>	<u>For profit</u>
24	Several times a day	14	26	26	36
2	Once a day	1	4	3	0
2	A few times a week	3	2	3	0
3	Less often	3	4	4	3
60	Don't use	67	56	56	58
8	No answer	11	8	9	3

## e. Tablet computer (like an iPad)

<u>All</u>		<u>4-year</u> <u>Private</u>	<u>4-year</u> <u>Public</u>	<u>2-year</u> <u>Private/Public</u>	<u>For profit</u>
26	Several times a day	27	31	24	21
6	Once a day	4	9	6	6
10	A few times a week	11	7	10	12
7	Less often	6	8	7	8
49	Don't use	49	42	52	52
2	No answer	2	3	2	1

## PRES2 CONTINUED...

## f. E-reader (like a Kindle or Nook)

<u>All</u>		<u>4-year</u> <u>Private</u>	<u>4-year</u> <u>Public</u>	<u>2-year</u> <u>Private/Public</u>	<u>For profit</u>
8	Several times a day	10	6	5	7
7	Once a day	8	9	7	5
15	A few times a week	16	13	16	11
13	Less often	13	16	12	8
56	Don't use	51	51	57	67
2	No answer	2	3	2	1

## g. Facebook

<u>All</u>		<u>4-year</u> <u>Private</u>	<u>4-year</u> <u>Public</u>	<u>2-year</u> <u>Private/Public</u>	<u>For profit</u>
10	Several times a day	9	10	9	15
8	Once a day	9	6	8	9
14	A few times a week	10	12	19	12
18	Less often	17	16	17	25
48	Don't use	54	54	45	37
2	No answer	2	2	2	2

## h. Twitter

<u>All</u>		<u>4-year</u> <u>Private</u>	<u>4-year</u> <u>Public</u>	<u>2-year</u> <u>Private/Public</u>	<u>For profit</u>
3	Several times a day	3	3	2	7
1	Once a day	1	1	1	1
4	A few times a week	4	6	4	2
10	Less often	9	10	12	8
78	Don't use	80	76	78	79
3	No answer	3	4	3	3

**PEW SOCIAL & DEMOGRAPHIC TRENDS  
MARCH 2011 HIGHER EDUCATION SURVEY  
FINAL TOPLINE FOR SELECTED QUESTIONS  
March 15-29, 2011  
TOTAL N = 2,142**

**NOTE: ALL NUMBERS ARE PERCENTAGES. THE PERCENTAGES GREATER THAN ZERO BUT LESS THAN 0.5 % ARE REPLACED BY AN ASTERISK (\*). COLUMNS/ROWS MAY NOT TOTAL 100% DUE TO ROUNDING. UNLESS OTHERWISE NOTED, ALL TRENDS REFERENCE SURVEYS FROM SOCIAL & DEMOGRAPHIC TRENDS AND THE PEW RESEARCH CENTER FOR THE PEOPLE & THE PRESS.**

**ASK ALL:**

Q.44 These days many colleges and universities offer courses online. Have you ever taken a course online for academic credit, or not?

16	Yes
84	No
*	Don't know/Refused (VOL.)

**ASK ALL:**

Q.45 In general, do you think a course taken only online provides an equal educational value compared with a course taken in person in a classroom, or not?

29	Yes
60	No
11	Don't know/Refused (VOL.)

**ASK IF YES IN Q.44 (Q.44=1): [n=411]**

Q.46 Have you ever earned a degree entirely online, or not?

7	Yes
93	No
0	Don't know/Refused (VOL.)

**ASK IF GRADUATED FROM COLLEGE WITHIN LAST 5 YEARS OR CURRENTLY ENROLLED IN COLLEGE**

**[(ED1 OR ED2 = 2006, 2007, 2008, 2009, 2010) OR SCHL=3]: [n=366]**

Q.47 **(IF ED1 OR ED2 = 2006, 2007, 2008, 2009, 2010, INSERT: When you were in college, how often did you; IF SCHL=3, INSERT: When you are at school, how often do you) use a laptop, smartphone or tablet computer during class time? Would you say you (did /IF SCHL=3, INSERT: do) this...**

35	Often
22	Sometimes
19	Hardly ever
22	Never
1	Don't know/Refused (VOL.)

