



UNIVERSITY OF  
CENTRAL FLORIDA



# 2016 UCF Mobile and eTextbook Survey Report

**Center *for* Distributed Learning**

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## Executive Summary

The 2016 EDUCAUSE Technology Research in the Academic Community (Dahlstrom, Brooks, Pomerantz, & Reeves, 2016) reported that mobile technologies are pervasive in the lives of students, with 90% owning a smartphone and 60% owning a tablet. The majority of students use their devices in most or all of their courses and feel their device is very or extremely important to their academic success.

To appreciate the landscape of this mainstream technology on campus, a comparative study on adoption of mobile learning and eTextbooks at the University of Central Florida (UCF) is being conducted.



In 2012, UCF's Center for Distributed Learning (CDL) distributed the first survey to students. The 2012 survey report can be downloaded at: <http://mobile.cdl.ucf.edu/?p=60>. A follow-up survey was distributed in Spring 2014. The 2014 survey report can be downloaded at: <http://mobile.cdl.ucf.edu/?p=672>.

This report will share the results from the most recent survey that was conducted in Spring 2016. The survey includes both closed and open-ended questions which are based on existing research and surveys previously distributed by the university. It was structured in two main categories: mobile learning (devices and apps) and eTextbooks. Topics include device ownership, access, and beliefs towards the technologies concerning areas such as learning, sense of community, and engagement. Student responses to this survey will allow us to gauge a baseline for usage and beliefs at UCF, compare the results with the 2012 and 2014 surveys, and shape the next course of action.

### Key findings of this report include:

- Ownership of mobile devices is high and continues to increase among students.
- Student status, sex, and age (18-64) were demographic factors relating to ownership of mobile devices.
- There is still a large difference between instructors requiring the use of mobile devices in coursework and students reporting the use of mobile devices on their own for learning.
- Student classification, residence, race, sex, and GPA were demographic factors relating to student-reported use of mobile devices, tablets, and e-Book readers for learning purposes.
- 65% of students (n=951) indicated that they had used a mobile app for learning at least once each week.
- Students reported modest instructor support for using mobile apps/devices in coursework.
- Limited internet connectivity is the top reason students may not want instructors to use mobile apps/devices.
- 66% of students (n=974) reported using an eTextbook at least once in their college studies.
- Student status, age, and discipline emerged as significant factors for predicting eTextbook usage.
- Instructors are modestly integrating eTextbooks within courses, with room for improvement.
- Student preference for print textbooks is not a significant deterrent to eTextbook use.
- Most students have mixed beliefs about technical skills, study skills, learning effectiveness, engagement, and sense of community with relation to using eTextbooks.

This report is structured in three sections: mobile device general ownership and usage; mobile app usage and beliefs; and eTextbook usage and beliefs. Recommendations for future action are proposed in the conclusion.

## Mobile Device Ownership and Usage

### General Ownership

- Ownership of smartphones is high at 99% (Figure 1). Most students own at least one iPhone (69%) or Android smartphone (27%) (Figure 2).
- Ownership of tablets is relatively low when compared to smartphones. Tablet ownership is at 63% (Figure 1). Most students own at least one iPad (36%) or Android tablet (10%) (Figure 3).
- e-Book reader ownership is 35% (Figure 1). Most students own at least one Kindle (21%) or Nook (8%) (Figure 4).
- Wearable ownership is low at 28% (Figure 1), with the majority of students owning a Fitbit (12%) (Figure 5).

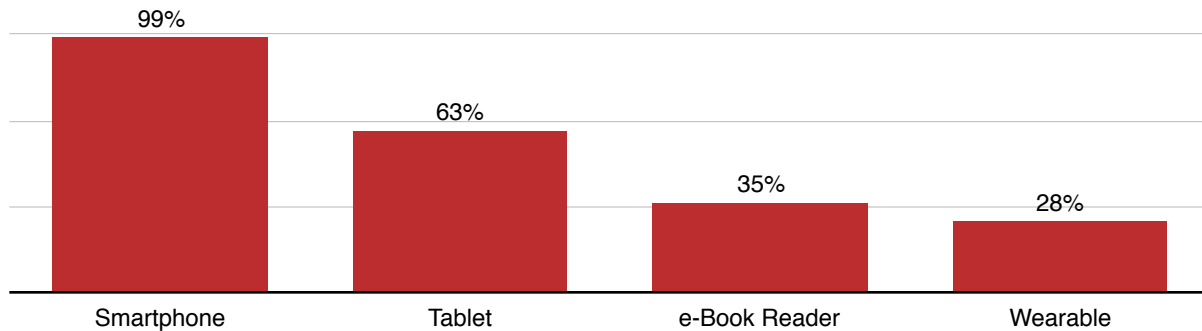


Figure 1: Device Ownership (N=1,474)

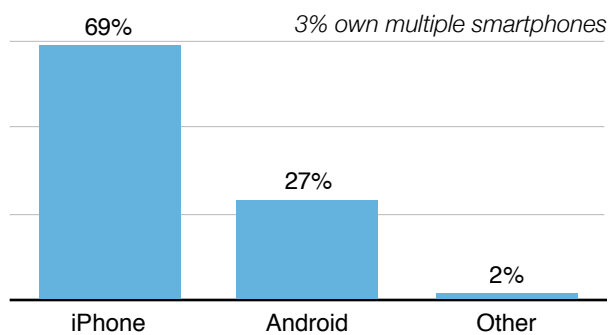


Figure 2: Smartphone Ownership (N=1,474)

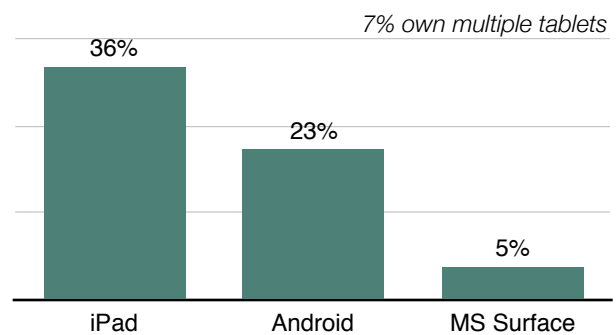


Figure 3: Tablet Ownership (N=1,474)

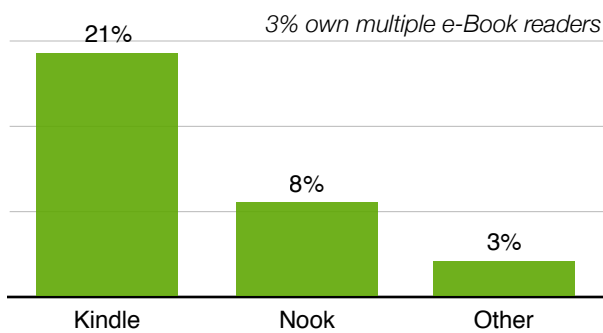


Figure 4: e-Book Reader Ownership (N=1,474)

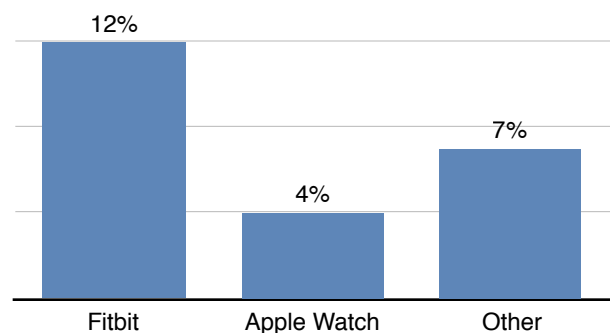


Figure 5: Wearable Ownership (N=1,474)

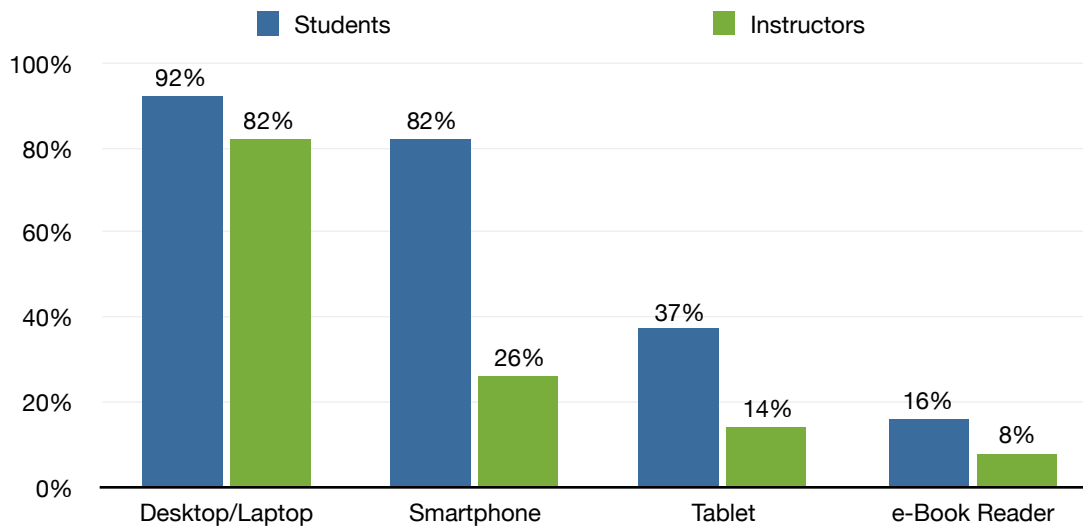
Student status, sex, and age (18-64) were demographic factors relating to ownership of mobile devices.

- Younger students reported owning more smartphones than older students.
- Graduate students reported owning more tablets and e-Book readers than undergraduate students.
- Female students reported owning more tablets and e-Book readers than male students.
- Part-time students reported owning more tablets and e-Book readers than full-time students.
- Older students reported owning more tablets and e-Book readers than younger students.

## General Usage

There is a large difference between instructors requiring the use of mobile devices in coursework and students reporting the use of mobile devices on their own for learning (Figure 6).

- 26% of students reported that their instructors asked them to use a smartphone (e.g., iPhone, Android Phone) to complete an assignment.
  - 82% of students reported using smartphones on their own for learning.
- 14% of students reported that their instructors asked them to use a tablet (e.g., iPad, Kindle Fire, Android Tablet) to complete an assignment.
  - 37% of students reported using tablets on their own for learning.
- 8% of students reported that their instructors asked them to use an e-Book reader (e.g., Kindle, Nook, Sony Reader) to complete an assignment.
  - 16% of students reported using e-Book readers on their own for learning.
- By comparison, 82% of students reported that their instructors asked them to use a laptop/desktop to complete an assignment, while 92% of students reported using laptop or desktop on their own for learning.



**Figure 6: Student Usage to Instructor Requirement of Devices for Assignments (N=1,474)**

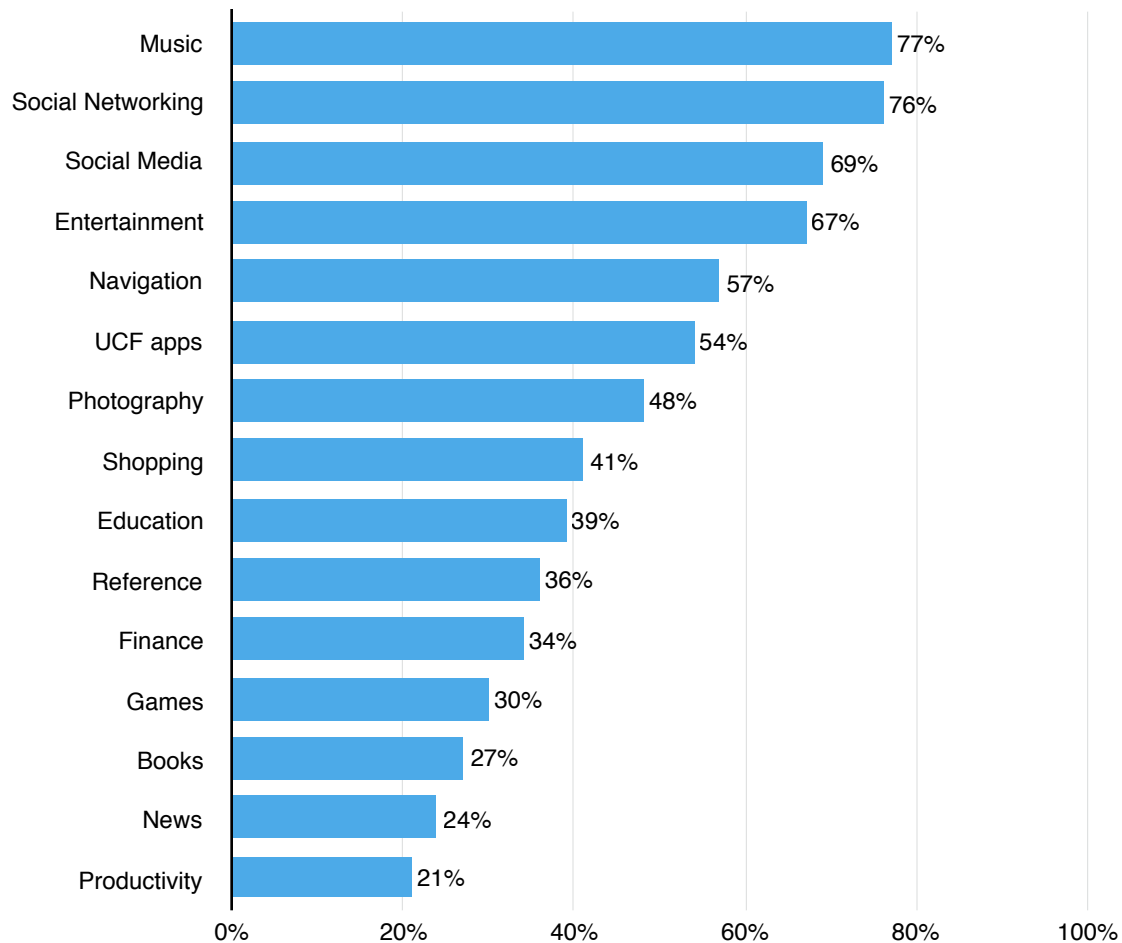
Student classification, residence, race, sex, and GPA emerged as demographic factors relating to student-reported use of mobile devices, tablets, and e-Book readers for learning purposes.

- Male students reported using smartphones for learning more than female students.
- Part-time students reported using tablets for learning more than full-time students.
- Students living on campus reported using tablets for learning more than students off campus.
- Multiracial, Asian, and white students reported using tablets for learning more than other students.
- Students with higher GPAs reported using e-Book readers for learning more than students with lower GPAs.

## Mobile App Usage and Beliefs

### Student Use of Mobile Apps

65% of students (n=951) indicated that they had used a mobile app for learning at least once each week. The use of apps in students' personal lives is extensive and varied. Students selected the app categories that they used most frequently (Figure 7).



**Figure 7: Most Popular App Categories for Student Personal Use (N=1,474)**



When asked how often students use UCF mobile apps for learning:

- 78% responded that they use Canvas Mobile for learning.
- 70% responded that they use UCFMobile (<http://ucfmobile.ucf.edu>) for learning.

When asked how students would like UCF to use mobile apps/devices in the future, these areas were most identified:

- Parking Availability - 78%
- Maps (GPS Directions) - 55%
- Coursework - 54%
- Computer Availability - 51%
- Knights Cash - 48%
- Regional Campus Maps - 41%

## Instructor Support

35% of students (n=469) indicated they would like their instructors to use more mobile apps or devices in coursework. However, students reported modest support from instructors who are using mobile apps/devices in coursework.

- 39% of students reported their instructor provided instruction on how to use the mobile app/devices in coursework.
- 29% reported their instructor modeled the use of mobile apps/devices in class.
- 36% reported their instructor clearly stated the requirement of using a mobile apps/devices in coursework in the course syllabus.

In a follow-up question, the top reasons given for not wanting instructors to use apps/devices include:

- Limited internet connectivity (on and off campus): 41%
- Limited funds: 34%
- Lack of technical support: 29%
- No interest in learning with a mobile device: 27%
- Limited or no access to mobile devices: 23%
- Limited or no access to training resources: 20%

## Beliefs

Using a 5-point Likert scale from “strongly agree” to “strongly disagree,” students were asked about the use of mobile apps/devices for academic purposes. Students (N=1,474) agreed or strongly agreed to the following items:

- Easier to access coursework: 74%
- Increases communication with other students: 66%
- Increases communication with instructor: 65%
- Increases knowledge in field of study: 52%
- Improves quality of work: 47%
- Increases motivation to complete coursework: 45%

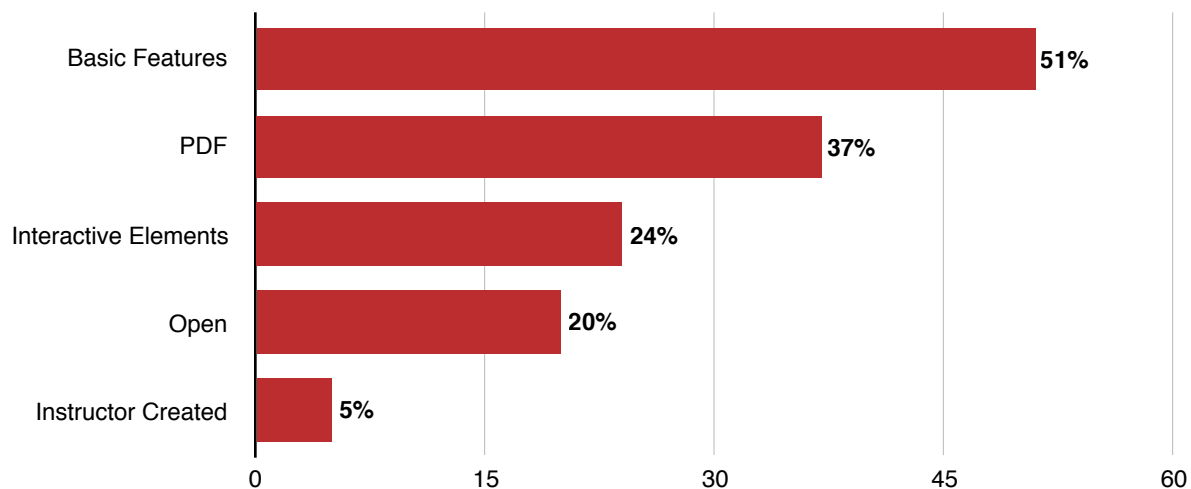


## eTextbook Usage and Beliefs

### Usage

66% of students (n=974) reported using an eTextbook at least once in their college studies (Figure 8). Among these students, multiple types of eTextbooks were used.

- 51% had used an eTextbook which had basic features like highlighting and annotations.
- 37% had used an eTextbook which was a PDF (replica of the print version).
- 24% had used an eTextbook which contained interactive elements.
- 20% had used an open eTextbook (free and available online).
- 5% had used an eTextbook that was created by the instructor.



**Figure 8: Types of eTextbooks used at least once by students (n=974)**

- 60% indicated they had purchased at least one eTextbook, while 59% indicated they had rented.
  - 31% obtained eTextbooks from the campus bookstore.
  - 75% obtained eTextbooks from an online retailer.
  - 35% obtained eTextbook that was bundled with a print book.
  - 10% obtained the book by sharing with a friend.
- 55% were required to use the eTextbook in their course by the instructor.
- 41% first became aware of the eTextbook option on their own, 42% from the instructor, while 8% heard about the option from peers.
- Low cost (74%) and ability to access the textbooks anywhere (63%) were top factors to influence the students' decision to adopt an eTextbook.

Student status, age, and discipline emerged as demographic factors that related to eTextbook usage.

- Undergraduate students reporting using eTextbooks more than graduate students.
- Younger students reporting using eTextbooks more than older students.
- eTextbooks were used significantly more in disciplines such as science, business, engineering, and health.

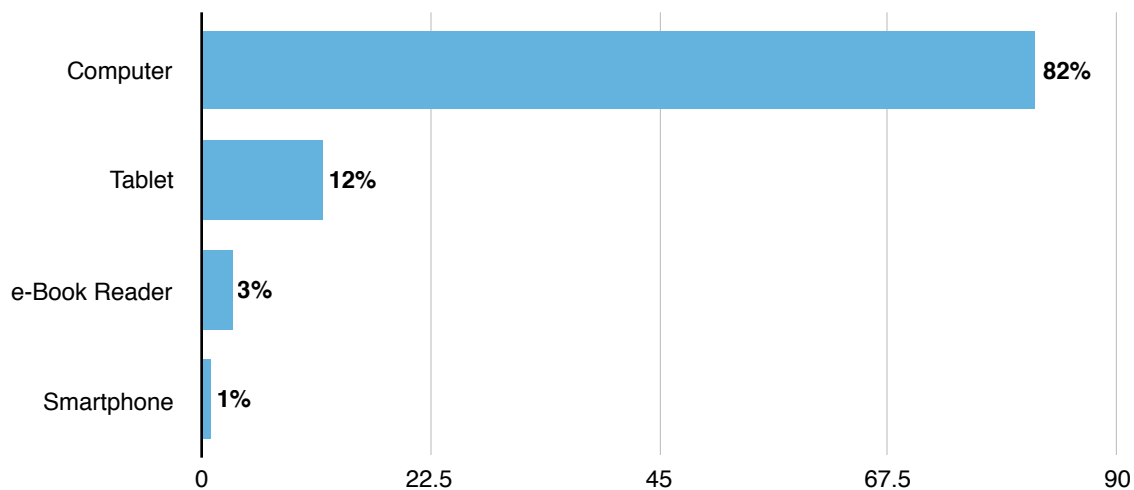


Of all students (N=1,474), including those who have used or not used an eTextbook in their college studies:

- The top reason why they would not use an eTextbook was the preference for print textbooks (17%).
- Around 5% indicated that they were not familiar with eTextbook or were unaware of the eTextbook option.

Students used computers most frequently to access eTextbooks rather than mobile devices, tablets, or e-Book readers (Figure 9). Among students who have used an eTextbook (n=974):

- 82% reported using a computer the most to access eTextbooks.
- 12% reported using a tablet the most to access eTextbooks.
- 3% reported using an e-Book reader the most to access eTextbooks.
- 1% reported using a smartphone device the most to access eTextbooks.



**Figure 9: Devices most frequently used to access eTextbooks (n=974)**

Students who have used eTextbooks were not always actively using the features that facilitate reading and studying. Around 53% of students reported that they seldom or never actively used the features such as highlighting and making notes.

## Instructor Use

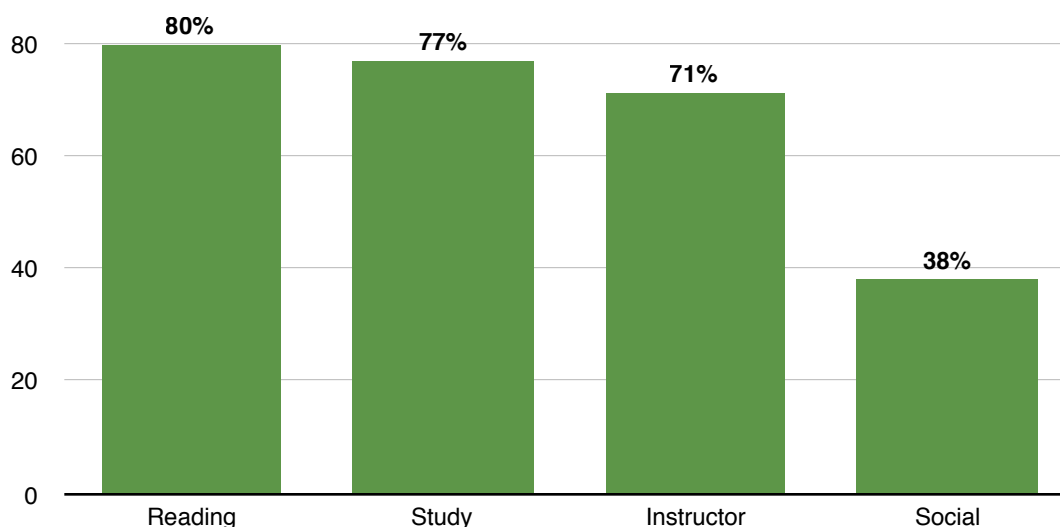
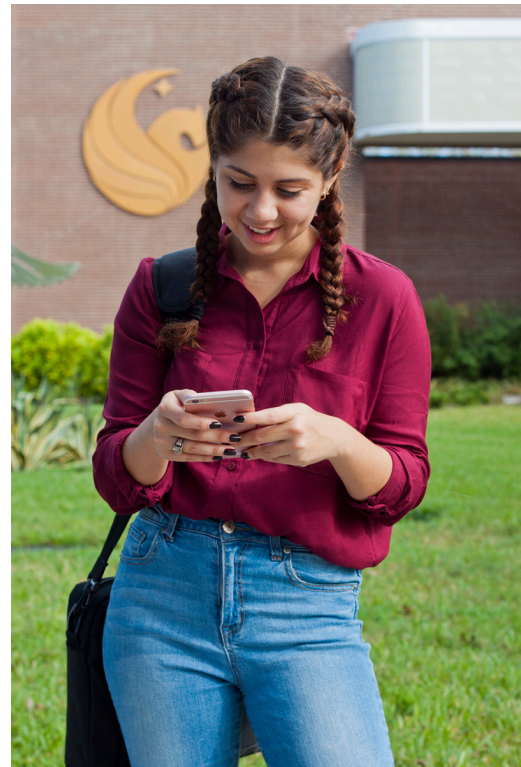
Among students who have used an eTextbook (n=974):

- 46% said the electronic nature of the textbook was stated in the syllabus.
- 44% said the instructor provided instruction on how to use the eTextbook.
- 34% said the instructor modeled the use of the eTextbook in class.
- 48% said the instructors seldom or never actively used the features of eTextbooks.

## Beliefs

38% of students who have used eTextbooks (n=359) would like their instructors to use more eTextbooks in coursework, while 36% disagree, and 26% are unsure. Students indicated that reading, study, and instructor features were “important” or “very important” in their decision to adopt an eTextbook. Features that were more social in nature were not deemed as important (Figure 10).

- 80%: Reading features such as searching for keywords, glossary, zooming text, and multimedia
- 77%: Study features such as highlighting, tagging, making notes, taking quizzes
- 71%: Instructor features such as being able to read instructor notes and highlights
- 38%: Social features such as sharing a passage on Facebook, following users on Twitter, taking a class poll, leaving notes for others to view



**Figure 10: Most important eTextbook features perceived by students (N=1,474)**

Most students believed they have the technical and study skills to adapt to an eTextbook but were mixed about learning effectiveness, engagement, and sense of community. Among all surveyed students (N=1,474):

- 78% of students believed they have the technical skills to adapt to an eTextbook.
- 58% of students believed they have the study habits to adapt to an eTextbook.
- 47% of students believed eTextbooks are more suited in online classes (32% neutral).
- 44% of students believed that they can learn as effectively as with a print book (27% neutral).
- 30% of students found reading an eTextbook as easy as a print textbook (57% neutral).
- 23% of students believed that they would be more motivated to use an eTextbook (34% neutral).
- 20% of students believed that eTextbooks could strengthen the sense of community in the class (59% neutral).
- 18% of students believed that they would be more engaged by using an eTextbook (54% neutral).

## Recommendations

Based on the survey results, we propose the following recommendations:

### 1. Review and improve infrastructure on campus.

Of the students surveyed, 35% indicated that they would like their instructors to use more mobile apps or devices as part of their academic experience. That statistic reveals a significant percentage of students who did not answer. It is possible that they hold a negative perception about the use of mobile technology for academic purposes, or are ambivalent at best. Upon further inquiry, students noted that limited internet connectivity, limited funds, lack of technical support, and limited access to the technology are all reasons why they would not want their instructors to use mobile devices for academic experiences. Therefore, our recommendations entail enhancing the infrastructure or knowledge of existing infrastructure at the institution.

We recommend that UCF should continue to:

- *Improve the WiFi signal throughout campus.* Due to previous upgrades in wireless infrastructure, it is possible that the access points exist, but bandwidth in certain locations may be an issue. This particular recommendation is likely to carry over into future studies. More students are access the wireless system with more devices per student. Therefore, the wireless infrastructure will need continuous improvement.
- *Provide increased access to mobile devices and heighten awareness of current programs that allow students to purchase devices at a discounted price.*
- *Increase promotion of student technical support options.* Currently, UCF provides options for student technical support, but the survey results indicate that students may not be aware that support exists, especially for mobile devices. Furthermore, instructors who use mobile apps and devices for academic experiences should also provide insight to students as to where they can acquire support.

### 2. Integrate campus life and academic activities within university apps.

Student ownership of smartphones continues to remain high at 99% and the technology is ubiquitous on campus. Even with tremendous ownership, the use of mobile technologies with coursework still falls short of personal usage. In an effort to encourage more use of mobile devices, particularly smartphones, we recommend adding more value through academic support and mobile opportunities for students and faculty. Over the past two years, UCF has made an effort to add more value through the redesign of the UCF Mobile app, the addition of UCF Apps (Citrix Receiver), and other services such as mobile tracking of shuttles, parking, and further development of myUCF Mobile.

We recommend that UCF continue to invest in resources that will enhance the student and faculty experience at UCF.

- *Personalized notifications.* Push notifications have become common with most services and are frequently expected and preferred for most college-age students. UCF currently uses email as the main and only source of official feedback outside of UCF Alerts. Universities and colleges are exploring and implementing systems that will give students and faculty personalized notifications regarding deadlines, financial aid updates, grade availability and much more. These are generally tied to specific information inside the university portal. This can lead to more awareness, increased academic performance, and better tracking of academic status.
- *Beacons.* A large portion of the UCF population still visits a physical campus, particularly the main campus. While visiting the campus, students can miss out on events, activities, and academic opportunities. The use of Beacons can help bridge this gap by sending notifications to users when in a specific location. These location-aware notifications can help bring more value to on-campus resources, increase engagement through events, and promote discovery of important campus resources.

- *Real-time availability of resources.* The UCF library currently has real-time availability of computers, rooms, and resources in a web and mobile format. This service is convenient for users to locate the best place to meet, study, and engage in campus resources. This service should be extended to other on campus labs and any entity that has a resource to offer, such as Classroom I, Tech Commons, and the Student Union.

### 3. Create faculty development opportunities.

With a marked difference in instructors requiring mobile/smartphone usage (28%), compared to the high number of students reporting usage for learning (82%), there is a clear need to inform faculty on current trends in student usage to promote more mobile adoption. Alongside the current trends in student usage, there are also pedagogical reasons for implementation and student learning experiences. 66% of students (n=974) reported using an eTextbook at least once in their college experience. Students emphasized that they used features such as highlighting and annotations, interactive elements, and ease of access to PDFs to assist in their learning experiences. Students are learning by using the benefits of these eTextbooks with their devices.

UCF is unique in many of its professional development offerings, especially those offered to faculty teaching in a blended or online format. One distinctive element is the mandatory course IDL6543 that is required for faculty teaching online at UCF. An additional course, IDL7000, is offered to veteran online faculty. These offerings provide the instructional designers at UCF a unique opportunity to inform faculty of online pedagogy and, just as important, campus resources and professional development opportunities focused on mobile and eTextbook resources. Featured below are current action items and future plans to support faculty and students at UCF with mobile and eTextbook implementation success.

- A [presentation](#) has been added to IDL6543 about best practices in mobile design.
- Along with highlighted elements of mobile/eTextbooks best practices in both IDL6543 and IDL7000, more advanced and detailed professional development courses, [Textbook Essentials](#) and [Mobile Essentials](#), have been created and are open for faculty use. These courses are modular and allow individuals to work through the experience step-by-step, or pick and choose from the module-specific content that they would like to focus on.
- A university task force focused on Textbook Affordability will be established in 2017, with one of the tasks being to identify instructors that are using open books, which are almost always digital in nature. These case stories will be disseminated among faculty.

### 4. Support information fluency among young, undergraduate students.

Survey results indicate that younger, undergraduate students exhibit two significant trends. First, they are more likely to own smartphones than their older counterparts. Given that 82% of students reported using a smartphone on their own for learning at least once a week, it is likely that most are in this younger demographic. However, of the devices mentioned in the survey, instructors are least likely to support instruction integrating smartphones. Second, younger undergraduate students are more likely to use eTextbooks. The general trends in this area suggest that although use is increasing and the preference for print is plummeting in this demographic, beliefs and active use of eTextbooks have dwindled. This suggests ambivalence about the technology; eTextbooks are being used because they are growing in familiarity and convenience, but they are not seen as pedagogically advantageous.

- Both of these trends point to the need for information fluency among younger undergraduate students. This training would need to be device and platform agnostic, and focused on students' study skills. Digital reading, especially using smartphones, is different than reading a traditional print book. Students are often not given development in this area, nor are instructors.

- The library emerges as a potential venue for this type of support. Currently, the UCF Library has several modules on Information Fluency. Results from this survey can help craft a new module.

## **5. Select providers that are eTextbook friendly.**

Survey results indicated students obtained eTextbooks from a variety of sources including the campus bookstore, online retailers, or through a bundled print textbook. Most notably, 75% of respondents used an online retailer to acquire the eTextbook compared to 35% using the campus bookstore. It is imperative for the campus bookstore to offer competitive pricing and multiple lengths of time to access eTextbooks.

- The institution needs the flexibility to explore bulk purchasing or direct license agreements with eTextbook providers. These methods would allow for the advantage of scale and a consistent reading experience for students. Currently, the bookstore contract prohibits such endeavors.
- 82% of students reported using a computer the most to access eTextbooks. This high percentage could be due to the inadequacy to present eTextbooks on a mobile device. During the selection of course materials, faculty should request an eTextbook evaluation copy to test on a mobile device. The faculty can provide students advice for the optimum hardware and software configurations.
- Only 5% of students responded using an eTextbook created by the faculty member. Incentives and institutional resources are required to assist faculty in the development of their own eTextbook for student use. Various institutions, such as [Boise State University](#), provide faculty development, stipends, and resources to aid in such endeavors. In 2017, faculty at UCF will be offered a cash incentive to enhance at least one of their courses with open educational resources (OERs). Faculty will learn strategies to find, reuse, remix, create, and share OERs within copyright and fair use guidelines, with an emphasis on student engagement and active learning.



## About This Report

### References

Dahlstrom, E., Brooks, D. C., Pomerantz, J., & Reeves, J. (2016). 2016 students and technology research study. EDUCAUSE Center for Analysis and Research (ECAR). Retrieved from: <https://library.educause.edu/resources/2016/6/2016-students-and-technology-research-study>

### Institutional Review Board

On 2/13/2014, the IRB approved the following activity as human participant research that is exempt from regulation:

Project Title: Mobile Learning and E-Textbook Survey

Primary Investigator: Baiyun Chen

IRB Number: SBE-12-08441

### Contact Information

If you are interested in learning more about this survey, or are interested in participating in research opportunities related to mobility and/or eTextbooks, please contact us at the following:

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