

# Center *for* Distributed Learning



*Mobile and eTextbook Survey  
Summer 2012*



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## Executive Summary

Mobile learning is rapidly evolving in higher education. In its 2012 Horizon Report, the New Media Consortium projected that mobile apps and tablet computing will have a time-to-adoption date of less than one year. eTextbooks, textbooks offered in a digital format, are also becoming increasingly adopted in higher education. While these technologies show promise in supporting learning, students must first have access to devices, and also possess the digital literacy skills to know how to effectively use them. In addition, faculty are often not prepared to support the development of these skills (New Media Consortium, 2012).

In order to appreciate the landscape of the adoption of mobile learning and eTextbooks at UCF, a student survey was developed and implemented by the Center for Distributed Learning in the summer of 2012. To recruit students, 390 UCF instructors certified to teach online courses were contacted and asked to participate. Of these, 39 instructors volunteered to share the survey with students in their current course offerings. A total of 933 students enrolled in online, mixed-mode, and face-to-face classes completed the survey. The participants were surveyed in 84 courses from 12 different colleges, 86% being undergraduates.

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 toward 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 attitudes at UCF, and shape our next course of action.

### **Key findings of this report include:**

- Ownership of mobile devices (smartphones, iPod Touch) is high when compared to tablets and e-book readers.
- College level, sex, GPA, and age emerged as demographic factors related to ownership of mobile devices, tablets, and e-book readers, along with the use of mobile devices and apps for academic purposes.
- There is a large difference between instructors requiring the use of mobile devices and apps in coursework and reported student use of mobile devices and apps in order to complete coursework.
- eTextbook use is relatively low, and their enhanced features are underutilized by students and instructors.
- Student status, student level, and discipline emerged as demographic factors that related to eTextbook usage.
- eTextbook features that facilitate reading and studying, along with instructor features, are more highly favored among students than social features.
- Most students use a computer to access eTextbooks more often than tablets or e-book readers.
- Money and access emerge as significant influences in the decision to adopt mobile learning and eTextbooks.
- Students are mixed in their belief that mobile and/or eTextbook technologies will enhance learning of content or increase motivation.

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

## General Ownership and Usage

### General Ownership

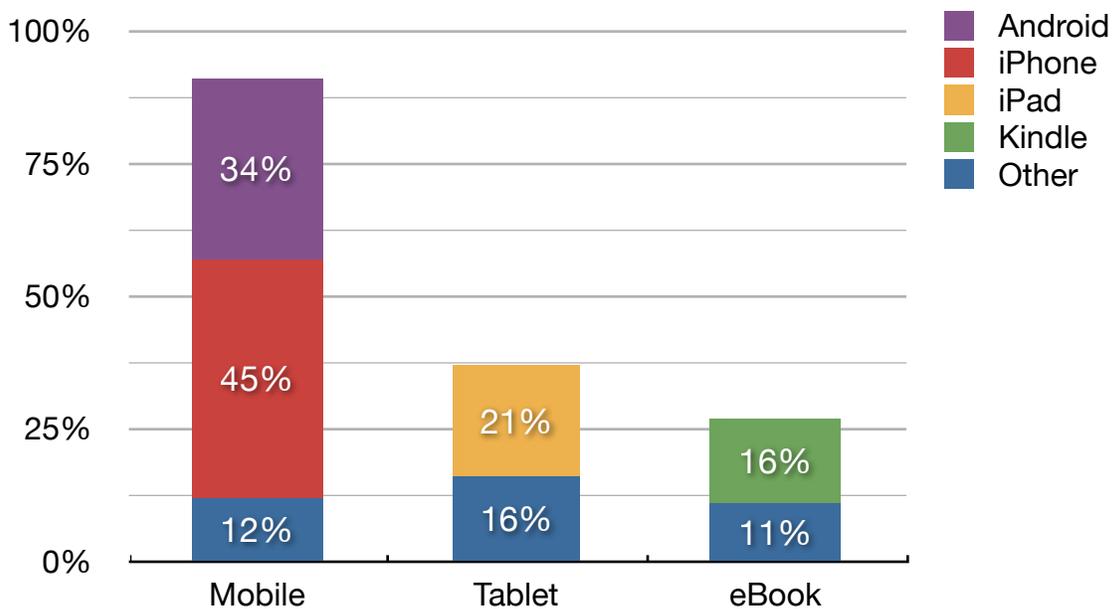
Ownership of mobile devices (smartphones, iPod Touch) is high (Figure 1).

Of the 91% of students who owned a mobile device, nearly 80% of students owned a smartphone device.

- 45% iPhone
- 34% Android

Ownership of tablets and e-book readers is relatively low when compared to mobile devices.

- 37% of students owned a tablet, of which 21% was an iPad.
- 27% of students owned an e-book reader, of which 16% was a Kindle.



**Figure 1: Ownership of Device by Percentage (N=933)**

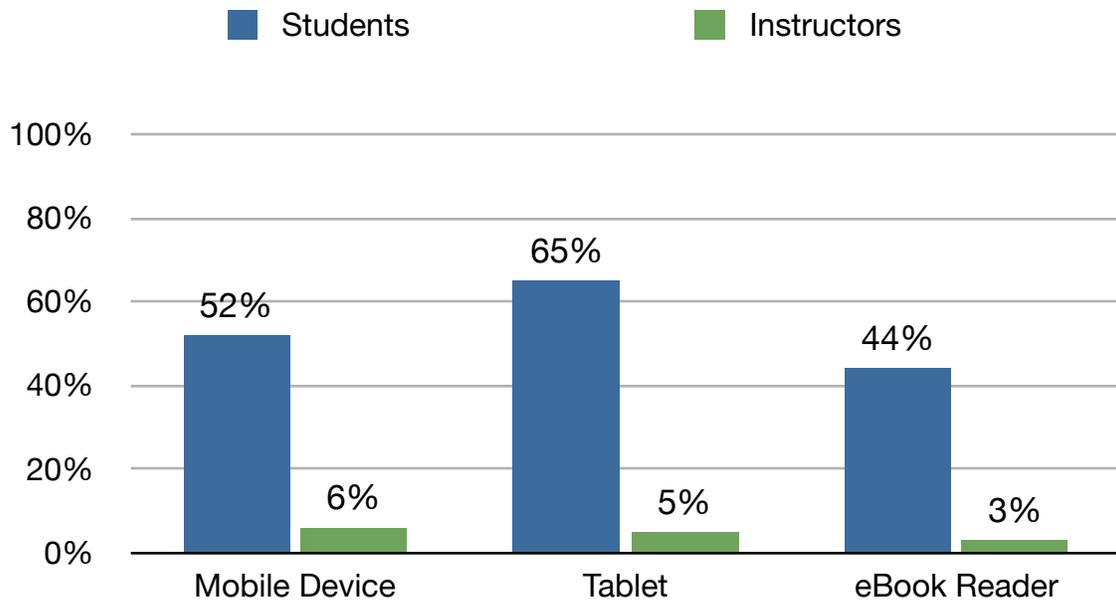
Student level and sex were demographic factors which related to ownership of tablets and e-book readers, but not mobile devices.

- Graduate students reported owning tablets more than undergraduate students.
- Female students reported owning e-book readers more than male students.
- No demographic factors were associated with the ownership of mobile devices.

## General Usage

There is a large difference between instructors requiring the use of mobile devices and apps in coursework and students reporting the use of mobile devices and apps on their own to help complete coursework (Figure 2).

- 6% of instructors have asked their students to use a mobile device to complete an assignment.
  - 52% of students who owned a mobile device reported using them on their own to complete an assignment at least once a week.
- 3% of instructors have asked their students to use a tablet to complete an assignment.
  - 65% of students who owned a tablet reported using them on their own to complete an assignment at least once a week.
- 2% of instructors have asked their students to use an e-book reader to complete an assignment.
  - 44% of students who owned e-book readers reported using them on their own to complete an assignment at least once a week.



**Figure 2: Student Usage to Instructor Requirement of Devices for Assignments (N=933)**

Undergraduate status, race, sex, age, and GPA all emerged as demographic factors which related to student reported use of mobile devices, tablets, and e-book readers for academic purposes.

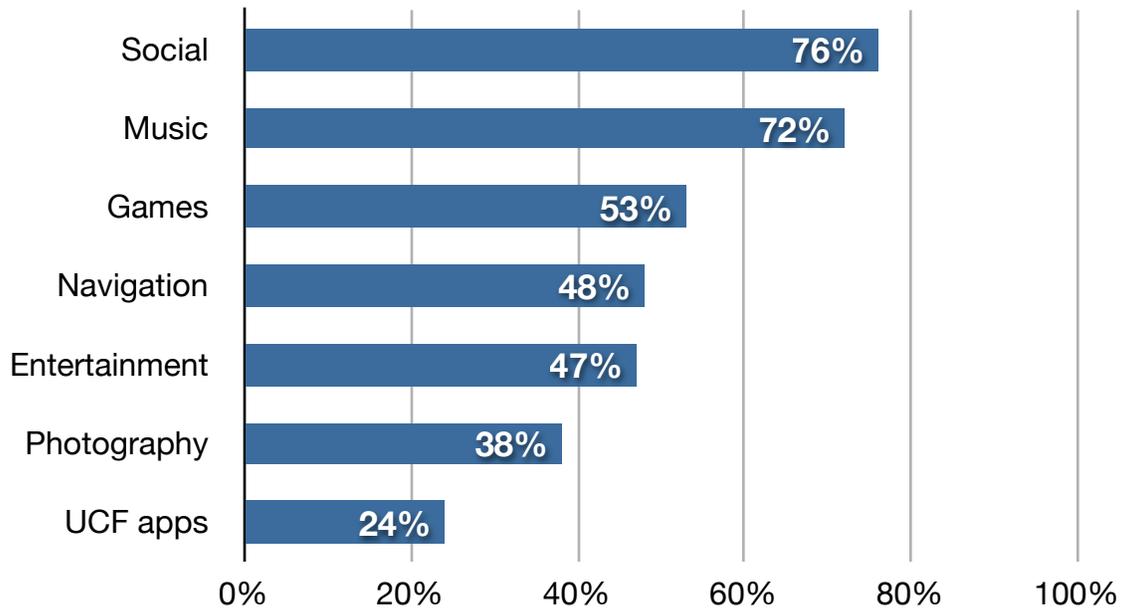
- Freshmen and sophomores reported using mobile devices for academic purposes and to complete an assignment more than juniors and seniors.
- Students identifying as Asian reported using mobile devices for academic purposes and to complete an assignment more than other races.
- Students identifying as Hispanic reported using mobile devices to complete an assignment more than other races.
- Males reported using mobile devices for academic purposes more than females.
- There is a small but significant relationship between age and use of mobile devices for academic purposes. Older students reported using mobile devices for academic purposes more than younger students.

- There is a small but significant relationship between GPA and use of mobile devices and e-book readers for academic purposes. Students with lower GPAs reported using mobile devices or e-book readers for academic purposes more than those students with higher GPAs (note: GPA was self-reported).

## Mobile App Usage and Beliefs

### Usage

The use of apps in students' personal lives is extensive and varied (Figure 3).



**Figure 3: Most Popular App Categories for Student Personal Use (N=933)**

Students responded that they used apps in their academic lives as well, in diverse ways.

- 32% of the students reported using mobile apps at least once a week to complete an assignment.
- The most frequently cited apps can be classified in the following general categories:
  - Resource management (Dropbox, Evernote, Notes, word processing)
  - Information (Google, Safari)
  - Reference (Dictionary)
  - Study (Flash Cards)
  - UCF (UCF Mobile, Mobile Learn)

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

- MyUCF - 75%
- Events - 62%
- Library - 53%
- Coursework - 50%

## Beliefs

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

- Easier to access coursework (77%)
- Increase communication with students (70%)
- Easier to complete coursework (64%)
- Increase knowledge in the field of study (58%)
- Improve quality of work (57%)
- Increase communication with the instructor (55%)
- Increase motivation to complete coursework (52%)

36% of students agreed or strongly agreed that they would like their instructors to use more mobile apps and/or devices in coursework. In a follow-up question, the top reasons were given for not wanting instructors to use apps and/or devices:

- Limited funds (16%)
- Limited access (14%)
- Technical support (11%)

## eTextbook Usage and Beliefs

### Usage

Less than half (42%) of students reported using an eTextbook at least once in their college studies.

- 42% of those students first became aware of the eTextbook option on their own, and 6% heard about the option from peers.
- 45% of those students were required to use it in their course by the instructor.
- Of those who had not used an eTextbook in their college studies, the top reason was their preference for print textbooks (38%). Another 30% indicated that they were not familiar with eTextbooks or were unaware of the eTextbook option.
- Low cost (86%) and ability to access the textbooks anywhere (73%) were top factors to influence the decision to adopt an eTextbook.

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

- Full-time students reported using eTextbooks more than part-time students.
- Undergraduate students reported using eTextbooks more than graduate students.
- Among the 12 colleges represented in this survey, students in the Business and Burnett Honors colleges reported using an eTextbook most frequently.



Students used computers most frequently to access eTextbooks rather than mobile devices, tablets, or e-book readers.

- 83% of students who have used an eTextbook reported using a computer the most to access it.
- 12% of students who have used an eTextbook reported using a tablet the most to access it.
- 3% of students who have used an eTextbook reported using an e-book reader the most to access it.
- 1% of students who have used an eTextbook reported using a mobile device the most to access it.

Students and instructors who have used eTextbooks were not always actively using the features that facilitate reading and studying.

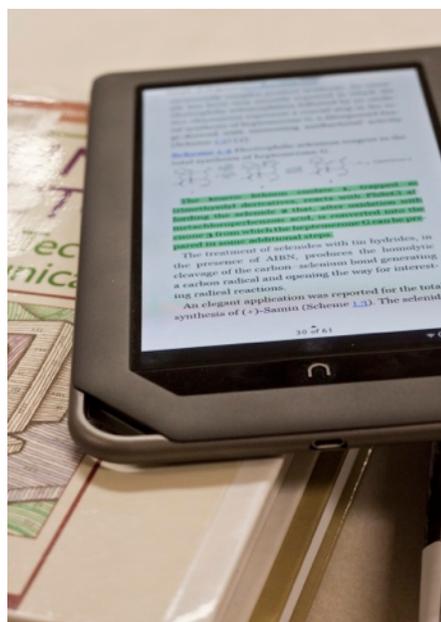
- Around 50% of students reported that they seldom or never actively used the features such as highlighting and making notes.
- Students reported that around 76% of instructors who have used eTextbooks seldom or never actively used the features of eTextbooks.

## Beliefs

73% of students who have used eTextbooks would recommend them to other students.

When asked to rate the influence of certain eTextbook features in their decision to adopt an eTextbook, reading, study, and instructor features were frequently rated as “important” or “very important”, while social features were not.

- 78%: Reading features such as searching for keywords, glossary, zooming text, and multimedia
- 76%: Study features such as highlighting, tagging, making notes, taking quizzes
- 71%: Instructor features such as being able to read instructor notes and highlights
- 37%: Social features such as sharing a passage on Facebook, following users on Twitter, taking a class poll, leaving notes for others to view



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.

- 86% of students believed they have the technical skills to adapt to an eTextbook.
- 72% of students believed they have the study habits to adapt to an eTextbook.
- 60% of students believed that they can learn as effectively as with a print book.
- 34% of students believed that they would be more engaged or motivated by using an eTextbook.
- 30% of students believed that eTextbooks could strengthen the sense of community in the class.

## Recommendations

Based on the survey results and informed by interviews with UCF stakeholders from the Library and Bookstore, we propose the following recommendations as initial steps:

### **1. Establish a faculty focus group for mobile learning and eTextbooks.**

We recommend the formation of a faculty focus group, recruited from the pool of faculty who participated in our faculty survey on mobile learning and eTextbooks. This group also includes stakeholders from CDL, UCF Library, Faculty Center for Teaching and Learning, and UCF Bookstore to discuss the usage and adoption of these technologies.

This group's immediate goals should be to:

#### **Address and clarify issues emerging from the survey in order to drive future research directions.**

There were several findings from the survey that prompt additional inquiries. For instance, students reported that a low number of instructors required the use of mobile devices in coursework. However, the results of the survey do not explain the reasons for this low number. Possible reasons could include issues of student or instructor access, technical skill, or pedagogical beliefs, among others. The focus group would enhance our understanding of the survey answers, and also help generate informed solutions. Engaging in this dialogue would aid CDL in understanding the pedagogical and practical issues that are present with technology adoption at the classroom level.

#### **Investigate how faculty are currently using mobile learning and eTextbooks in the classroom.**

Through our survey, we found that small numbers of faculty are requiring the use of mobile devices and eTextbooks in coursework. It would be helpful to gain a deeper understanding of how these faculty are incorporating these technologies in an official academic capacity. This would inform the CDL Mobile Initiative.

### **2. Promote campus awareness of the current resources that UCF offers for mobile learning and eTextbooks.**

Awareness of the various resources available to instructors and students regarding these technologies is critical. This includes identifying physical resources, such as iPads available from the UCF Library, and digital resources such as Nook Study eTextbooks from the UCF Bookstore. Heightened awareness could increase student access to devices and exposure to eTextbooks.

When students were asked how UCF should use apps in the future, over 50% responded with library services, events, and maps. These features already exist inside the official UCFMobile application and the m.ucf.edu mobile website. Also, only 24% of respondents reported using UCF apps. This suggests a possible gap in the awareness of current mobile offerings. UCF supports two enterprise level applications, UCFMobile and Mobile Learn (soon to be Canvas for iOS). UCFMobile contains valuable information pertaining to campus life, maps, course schedules, and program information. Mobile Learn creates easy access to Webcourses@UCF for students and faculty on the go while using their smart devices.

### **3. Increase access for students to purchase, rent, or borrow mobile devices, tablets, and e-reader devices at UCF to increase adoption of these technologies.**

Money and access emerged as potential barriers to adoption of these technologies. For instance, smartphone usage in our survey sample was nearly 80%. While this is a high number, without 100% ownership, it is difficult to create assignments or assessments using these devices. Our survey helped show the need for support of tablets and e-book readers. Greater access to devices, in the form of checking out from the UCF Library, can help close this gap. Currently, the UCF Library has 44 iPads available. More devices are needed to support a campus of this size. In addition, current policies could be reviewed to ensure that students are meaningfully using these devices for academic purposes. For instance, the checkout times for iPads at the UCF Library are currently set for one week. We suggest increasing checkout times for longer durations, to at least a semester.

If the barriers such as cost were reduced, then full ownership could be achieved and increase the adoption of this technology at UCF. UCF should explore how to reduce these barriers through means such as scholarships, stipends, grants, or partnerships. Faculty could work with their departments to use an allotment of mobile devices if their course work includes the usages of mobile or eTextbooks. Another possibility is greater subsidies on mobile plans and devices for faculty and students. Judging from the survey results, lowering the cost of eTextbooks and devices could increase adoption due to student financial concerns.

### **4. Work closely with publishers and providers of digital content.**

Adopting digital content such as eTextbooks is a challenge because there is currently no standard among publishers and providers of content. They all offer different features, formats, options and settings. For these reasons, the instructional design and quality of digital content is a key concern. It is important to engage in dialogue with publishers and providers of digital content in order to address the needs of UCF faculty and students, and emphasize the expectation of the quality that these resources should exhibit. For instance, as a public university, offering accessible digital content is mandatory to serve all students. Publishers and providers must be made aware of these requirements and create accessible software and hardware. Regarding quality of eTextbooks, the dialogue with publishers and providers will center around the demand for eTextbooks that go beyond digital facsimiles of print books to include rich features such as interaction with content, multimedia and social features.

The UCF Bookstore has a large selection of eTextbooks that are offered through Barnes and Noble's Study Mate desktop software, but little to none of the eTextbooks offered on campus work with mobile devices such as tablets or e-book devices. To increase access to eTextbooks, we recommend exploring more outlets, publishers, and services to bring eTextbooks to these devices. Working with publishers in order to provide eTextbooks at a reduced price is also a viable option, and has been explored by other universities.

### **5. Provide faculty development for mobile learning and eTextbooks.**

While this survey has revealed that the vast majority of students have access to mobile devices and apps, less than a third reported using them for academic purposes. Regarding academic use, we found that students are largely finding and using apps on their own to complete coursework, for purposes such as resource management, information, and reference. It remains unclear whether they possess the digital literacy skills in order to use them effectively to support their learning. In fact, we found that students were mixed in their belief that mobile devices and/or apps can improve their quality of work. If faculty are to integrate this technology in the classroom, they will have to be prepared to support these skills. In addition, faculty themselves will have to know how to utilize this technology for academic purposes. This is a tall order for faculty who are rarely formally trained to use these technologies.

To further increase the adoption of mobile technologies on campus, we recommend more resources and professional development opportunities for faculty. Our vision of professional development would involve the active and contextual use of mobile devices in course settings. It also includes a centralized online resource that includes tools, tips, tutorials, and best practices. Periodic face-to-face and webcast events should be offered to keep faculty updated on the technology and informed about the current activity of mobile learning on campus. Our survey revealed student trends that may inform faculty support of mobile learning. For instance, in students' personal lives, the most popular apps are related to social networking, music, news, and entertainment. This information can be helpful for faculty members that want to introduce mobile apps by concentrating on apps that are already highly used and installed on student devices. Students are also using apps on their own to complete coursework, such as Dropbox and Evernote. Workshops and training should be offered for faculty to help better understand how these apps function and how they can be integrated into instruction.

The survey results revealed a low adoption rate of eTextbooks by instructors. As instructional designers, we can guide faculty through the selection process of eTextbooks. For instance, if a faculty member is interested in adopting an eTextbook, we will help them in the search and encourage them to review it by several criteria such as the student and instructor features it offers. In addition, some instructors are composing their own eTextbooks. Others are exploring open textbooks, although the adoption rate is currently low (Florida Distance Learning Consortium, 2012). We will guide them through these varied choices based on their needs and learner needs.

As with mobile learning, digital literacy emerges as a concern regarding eTextbooks. Our survey found that nearly half of students who have used an eTextbook found them on their own, and half rarely utilized the features that facilitate reading and studying. With student usage on the rise, instructors will have to adapt their teaching practices and model the appropriate ways to engage with an eTextbook, exhibiting how to read and study most effectively. Professional development would involve the active and contextual use of eTextbooks tailored to the individual instructor and course requirements.

## **6. Investigate faculty or program level usage of eTextbooks.**

Finally, we recommend additional investigation of eTextbooks at the faculty or program level. We are interested in conducting a study about the array of eTextbooks currently being used at UCF, exploring the features that are available. Of the instructors who are requiring eTextbooks in their course, how are they being used? We would like to consult with the UCF Bookstore as well and acquire more data about the use and availability of eTextbooks. We have already made contact with the assistant manager there and have followed up with additional questions.

We are interested in the skills required of an instructor teaching with an eTextbook rather than print. One proposed study involves following an instructor as she adopts an eTextbook in her class. Another idea concerns measuring the engagement and performance of a class of students using an eTextbook. We were intrigued by the lack of student support for social features of eTextbooks, so we would like to observe student use of these features. Eliciting student feedback might help explain the low preference for this feature, and may reveal some surprising findings.

### Note: Limitations

As with any survey, there are limitations to the one presented in this report. One major limitation is the self-selection bias, as participants volunteered for the study. Even though we have a large sample size (N = 933), the data only include a selected number of classes at UCF. Thus, the findings could not be generalized to students outside of these classes or to the whole university. However, the results are solid beginning steps toward appreciating the landscape of these technologies at UCF, and generating suggestions for future directions.

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## Institutional Review Board

On 5/4/2012, 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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## Acknowledgements

Special thanks to the Research Initiative for Teaching Effectiveness (RITE) for assistance in reviewing and developing the survey: <http://cdl.ucf.edu/research/rite/>

Special thanks to Sherry Bauerschmidt and Josh Economico for the cover photo.

All photos courtesy of Ryan Seilhamer.