Assessing iPad Use by Arts and Sciences Faculty

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Abstract
The purpose of this research is to investigate iPad use amongst faculty in a College of Arts and Sciences. Faculty were surveyed and interviewed. Results from the study revealed faculty interest in integrating iPads into their teaching, research, and service. However, the overwhelming request for more support and training highlighted a significant challenge for faculty.

Introduction
Uses of iPads in and out of the classroom are a prevalent research focus in education and instructional technology. Most commonly, current published research in elementary education indicates favorable uses by faculty with student assignments and projects. From math related games to reading comprehension that promote interaction, iPad use in elementary education have shown great success for students (Blair et al. 2014; Smirnova & Bordonora 2014). Teachers have also revealed positive feedback in their adoption of iPad technology in elementary education (Vu, McIntyre, & Cepero 2014; McLeod 2015). However, little published research in higher education indicates colleges and universities are measuring and studying the effectiveness of learning with iPads. The few studies that exist reveal organizational culture of the institution to be a primary limitation for both faculty and students (Bates & Sangra, 2011; DeBacker & Cullen, 2014; Teng, 2015). Furthermore, while research reveals the success of learning with iPads (Marmarelli & Ringle, 2011; Faris & Selber, 2013), little research exists on faculty training and support with iPads. A study by Abilene Christian University (2009) mentioned that faculty gathered for a conference to learn more about implementing mobile-learning in the classroom, but the report did not explain how faculty learned in other ways. Likewise, Drouin, Vartanian, & Birk (2014) describe a community-based model that provides introduction of tablets to faculty, but their unique model may not be appropriate for all colleges.

The NMC Horizon Report: 2014 Higher Education Edition notes specifically that faculty are not receiving adequate training on how to develop their digital media literacy skills (Johnson et al., 2014, 22). As the report suggests, "this growing problem may be attributed to the cultural divide between faculty and students regarding technology adoption and implementation as well as lack of training, support, and resources institutions provide for faculty." Indiana University researchers studied faculty involved in learning communities to discuss best teaching practices using iPads (Gosney, 2012). They recommend colleges and universities be proactive in their investigation of faculty technology needs to promote best technology practices.

While a variety of cross-disciplinary plans have been implemented at colleges and universities to help faculty learn new skills, reports like the NMC Horizon Report: 2014 Higher Education Edition reveal challenges faculty face (22). One approach to solving this problem is that "learning with mobile technologies should go beyond hands-on experience, to the appropriation of the technologies for longer-

term personal and professional development" (Kukulska-Hulme, 2012, 248). In other words, faculty should be lifelong learners to adopt mobile technologies in and out of the classroom. But, this can be difficult if faculty are not willing or advised not to use the technology for personal development and may not take advantage of what these technologies have to offer. Likewise, giving faculty iPads without any instruction, training, or time for exploration does not lead to high rates of successful implementation. As Ertmer and Ottenbreit-Leftwich (2010) suggest, just knowing how to use technologies is not enough for effective pedagogy. Teachers must also have "additional knowledge of the content they are required to teach, the pedagogical methods that facilitate student learning, and the specific ways in which technology can support those methods" (Ertmer & Ottenbreit-Leftwich, 260). Helping faculty is a multifaceted task requiring education and training in many areas, not just one subject area. Department and institutional workshops geared for the masses might not be the solution to helping faculty learn. In fact, as this study will show, faculty prefer personalized learning on their own or with other faculty whether in their same discipline or not.

The Study
This study investigates iPad use amongst 140 full-time faculty who received iPads from the College of Arts and Sciences at a private university in the southeastern United States. Though they did not receive any formal training, faculty who were employed at the college in 2012 participated in iPad user groups in the fall 2012 semester. Typically, faculty met twice with their group either face-to-face or online. The groups were not organized or operated like the communities of practice described by Drouin, Vartanian, & Birk. Rather they were informal conversations among faculty from various disciplines. Those who were employed after 2012 did not participate in a group but did receive an iPad. Feedback collected from the groups was submitted to the Dean's Office. This research project reviewed the feedback from these groups. Afterwards, researchers developed and implemented a survey and requested interviews from all faculty. Fifty-two participants complied. These participants teach a variety of undergraduate and graduate courses in humanities, math, science, technology, social and behavioral sciences, and performing and visual arts.

The Results
By using a mixed methodology to collect data, researchers were able to comprehend the extent and effectiveness of faculty iPad use in teaching, research and scholarship, and service. Results of the survey and interview are discussed separately. Both reveal insights into iPad use that could help educators and administrators make better informed decisions for training and supporting faculty in their use of mobile technology.

Survey Results

Teaching
Using the iPad to deliver a lecture or to demonstrate an activity to students was rare among faculty surveyed. Only eight faculty members indicated they used the iPad to demonstrate an assignment or activity on a weekly basis. Thirteen participants said they used their iPad to prepare lecture/lesson notes and other course materials. The majority of respondents from the survey (95.9%) indicated they used the iPad to read and write emails from/to students. While the majority (96%) of participants use Blackboard to teach, 46% never use their iPad to organize their Blackboard site for their classes.

On a rating scale, participants were asked about their level of agreement to the following two statements regarding their teaching: a) My iPad plays an important role in teaching my students. And, b) Learning effective strategies for teaching with an iPad is important to me. Nineteen participants either agreed or strongly agreed that iPads play an important role in teaching students while 17 participants either disagreed or strongly disagreed. However, more participants (25) either agreed or strongly agreed that learning effective strategies for teaching with an iPad was important.

Research and Scholarship
The majority of faculty noted they used their iPad to read and search for scholarship. Only four participants stated they never used their iPad to read or search for scholarship. More participants use the iPad to collect and store research than those who do not. However, the majority of faculty (55.1%) do not use the iPad to write, edit, or revise scholarship or analyze research data. In terms of attending, preparing

for, and presenting at conferences, 26 participants use the iPad to plan conference travel, 12 use the iPad to construct conference materials, 12 deliver presentations, and 37 take notes on the iPad when attending conference presentations.

Service

The majority of participants use their iPads to serve their university. For example, all but two participants used their iPad to email with faculty and administrators. Thirty-nine participants use their iPad to set up and plan meetings with committees and other groups on campus, 37 keep a calendar of important deadlines for university activities, and 40 take notes during meetings and download and view materials for meetings. The majority (65%) either agree or strongly agree that learning effective strategies for serving the university with an iPad was important. Of the three categories (teaching, research and scholarship, and service), more faculty (29) reported that the iPad plays an important role in serving the university compared to the 19 and 20 faculty members who reported its importance for teaching and research and scholarship. The majority of faculty (32) either agreed or strongly agreed that learning effective strategies for serving the university with an iPad was important.

Training and Support

Faculty want help related to hardware and software issues, but also want training and funding for apps. In terms of financial support, 25 participants indicated that the university does not provide financial support for using an iPad. In terms of time, the majority (47.92%) neither agreed nor disagreed that the university provided sufficient time to learn how to use an iPad. In terms of training, 44.9% said they neither agreed nor disagreed that the university provided iPad training to help faculty. No one strongly agreed that the university provided iPad training to help faculty. More faculty want to participate in training workshops than those who do not. More faculty want to participate in iPad user groups than those who do not. However, the majority of participants prefer to learn more about their iPad through online tutorials, websites, and videos. In an open-ended question about what hinders their use, participants pointed to the following reasons:

1) inability to connect the iPad to the projector in the classrooms on campus
2) lack of knowledge and training
3) unreliable wifi
4) lack of funding for apps

Interview Results

Teaching

Thirteen of the 52 faculty members were interviewed after the completion of the survey. As many of the interviewees revealed, limitations of the technology in the classroom and a lack of adequate time and training were the most common responses to their inability to adopt iPads into their teaching. Although, participants did reveal a number of iPad applications that helped manage their class including Prezi, Blackboard, Turnitin, Notability, Dropbox, Evernote, Keynote, and Kindle. The Pearson Grammar Application was also used frequently by several writing faculty that participated in this study. Despite the success of application use on an individual basis, many of the participants interviewed expressed interconnectivity issues between the iPad and the computer/projector in the classroom as limiting their abilities to teach.

Several faculty shared their experience in finding alternate methods to get around challenges. One interviewee revealed his purchase of the "dongle," an iPad to computer connector that allowed him to display his iPad while using a remote feature on his iPhone to advance his slides. Another faculty member converted his PowerPoints to Adobe PDF documents and then displayed them using the Kindle Application. But, these were fixes that the participants discovered on their own, not from any formal training. As faculty talked about significant challenges to iPad integration, the interviewees also revealed limited iPad use by students. Predominantly, interviewees indicated students used iPads for note taking and following the lecture PowerPoint. Some indicated electronic-books were used in their classes more often and the increase in accessibility to this format may promote further use of iPads in the classroom.

Research and Scholarship

The research and scholarship questions did not reveal favorable uses for the iPad in research as many faculty commented on the lack of a keyboard as their main area of concern. While faculty are using the iPad to research and read scholarship, very few are using the iPad to help write their manuscripts. Some faculty felt iPads "will not play a more important role in the future" and iPads were "detrimental when it comes to creativity and research." There were some uses for the speech dictation applications and comic book and sketchbook applications. In addition, some faculty used Prezi on the iPad to develop their presentations. One faculty member also noted that she live tweeted at conferences using her iPad. Overall, faculty still favor the use of their laptop or computer to help create manuscripts and other research.

Service
Faculty use iPads primarily for note taking, accessing email and using Google Documents during meetings. Beyond this, faculty interviewed in this study have not integrated iPads into their institutional service.

Training and Support
Hargis, Cavanaugh, Kamali, & Soto (2014) found that faculty need "support, a safe environment to exchange ideas, a place to develop professional learning network, and time for more collaboration" (52). Their findings are in line with this study's findings. Interviewees revealed several themes to be addressed for successful integration. Classroom interconnectivity (using the iPad to computer connection or wireless Apple TV) was one of the most common responses by the faculty. Limitations of the classroom infrastructure inhibit faculty creativity and ability to share resources using the iPad. For example, some faculty rely on the dry-erase board or computer/projector to display presentations or identify concepts. The inability to connect iPads with the larger screen as well as provide students the opportunity to share their screen prevents a student-centered approach to teaching.

Faculty overwhelmingly desired further training using the iPad from both a technological as well as pedagogical perspective. As one participant shared, "I would like to use my iPad more, but I don't know how." Requests from the faculty on the format of this training included individualized workshops, small groups, asynchronous, and individualized meetings. Some faculty shared their interest in release time from their teaching load to gain an in-depth understanding of the pedagogical concepts necessary to enhance their teaching. And, they shared their need for money, specifically for apps and accessories like a keyboard to support writing based activities. Faculty have purchased keyboards to use with their iPads and in some cases paid for discipline specific applications to support their teaching, but this was money out of their own pockets.

Conclusion
Results from this study reveal faculty interest in integrating the iPad into their teaching, research and scholarship, and service. However, the overwhelming request for more support and training presents a significant challenge to further promote technology use. Faculty want to participate in a training method that best suits their specific skill and experience level such as a workshop, small group, or individualized training. They want to learn in personalized ways instead of methods that are geared towards mass groups. As one interviewee stated, he wanted to "learn something new about using the iPad rather than go to a workshop that told him what he already knew." As mentioned earlier, these findings are in line with the findings of Hargis, Cavanaugh, Kamali, & Soto. In fact, they argue that "informal learning increased as teachers engaged in their own research on ways to implement the iPads, searching and finding apps, seeking advice from other teachers and professionals, and exploring what they could do with the iPad" (51). However, in order for teachers to do this, they need ample time which can be difficult to find when instructors, like those in this study, are teaching four classes a semester and performing their other responsibilities as faculty. As this research shows, creating a culture of technology users requires a sound technology infrastructure in and out of the classroom, one that provides equipment and accessories that help instructors effectively integrate the technology. The benefits of providing these needs to faculty motivated to integrate technology clearly outweigh the associated costs of these improvements to the infrastructure.

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