Project iPad: Investigating Tablet Integration in Learning and Libraries at Ryerson University

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The year 2010 saw a major revolution in tablet technology with the introduction of the Apple iPad. Curious about the potential of this new technology for libraries, a group of librarians at Ryerson University in Toronto seized an opportunity to investigate the emerging role of the tablet in the daily academic lives of students.

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Project iPad Begins

Project iPad came out of an opportunity presented by the Ryerson chief librarian to a small group of new Ryerson librarians. In early summer 2010, she presented the group with an opportunity to have access to $5,000 in funds to use at their discretion. The librarians decided that since there had just been a major release of tablet technology in Canada, they would conduct a tablet-focused project with a small group of students.

The project concept was to purchase a small number of iPads, select four students to whom the iPads would be given for the academic year, and see how the students integrated the iPads into their daily academic lives. The students would be asked to report on how the iPad enhanced or inhibited their study, research, and learning. As a project requirement, students would be asked to blog weekly about their experiences, and the librarians directing the project would meet with them monthly to track their progress. In exchange for meeting these project requirements, students would be able to keep the iPads at the completion of the project in April 2011.

We decided to select the project participants from the Ryerson University Library and Archives Student Advisory Committee (RULA-SAC), a student committee that meets regularly with librarians to advise them on various issues and activities. Students interested in participating in the project were asked to submit 250-word essays on why they would like to participate. By early December the best submissions were selected, and the iPads were distributed mid-month—just in time for students to have the holidays to get to know their new tablets. Students were asked to do their first blog entry over the winter holidays, and they started their weekly blog postings in January 2011.

The librarians had opted to purchase five 16GB Wi-Fi first generation

The four student participants in our iPad experiment

iPads. Four iPads were handed out, and the fifth was kept as a backup in case one was lost, broken, or stolen. A total of a little more than $300 was spent on applications for the four iPads. They were preloaded with Pages, a word-processing application, and students were provided with an initial $25 iTunes gift card with which to select and purchase their own applications. In mid-February participants were each provided with an additional $50 iTunes gift card as the $25 cards ran out quickly and some pricier applications became available that we felt would be worth testing.

performance and functionality of the iPad and students' laptop and desktop computers.

The students agreed that the iPad offered superior performance when compared to a laptop. Aspects worthy of note included the intuitive touchscreen interface, quick startup, lightweight design, and excellent battery life (approximately 10 hours). For students lacking data plans on their smartphones, the iPad helped to improve email communication and support group work where free Wi-Fi was available. Given that Ryerson University is located in Toronto's downtown

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Organizing academic workflows with the iPads. Project iPad provided participants with the opportunity to develop new approaches for time management and organization in their personal and academic lives. Before participating in this project, no team member had previous experience working with tablet technology. As a result, early blog posts featured comparisons between the

core, a large proportion of students commute to campus using public transportation. By digitizing course materials and importing them into iBooks or a comparable application, the iPad allowed for offline review while in transit. Similarly, the Read It Later application allowed the students to save desired webpages for when a Wi-Fi connection was available to view them offline later.

The iPad allowed participants to customize effective time-management strategies and streamline their tasks. Students all agreed that the iPad altered their academic workflows, making them practically paperless. Applications such as Dropbox eliminate the need for external data storage, and various calendar options are available. One approach involved synchronizing the iPad calendar with a web-based calendar to streamline timetabling. Another approach involved the use of the iStudiez application to personalize course management and to create a detailed academic timetable. Students noted the importance of hardware add-ons, such as the wireless keyboard and conductive stylus, for content creation. Along with the stylus, students recommended the Penultimate application to enhance note taking without a keyboard and to improve the creation of diagrams to support lecture content. Finally, students recommended a combination keyboard and docking station to improve the speed of touch-typing.

Integrating the iPad into academic life. The iPad is marketed as a tool to bridge the gap between a smartphone and a laptop. Many view the iPad as a luxury technology that is best used for the consumption of media as opposed to the active production of scholarly work. This project allowed us to explore the concepts of production versus consumption by identifying how the iPad may become an integral tool in aiding collaboration among peers. We began to see how bridging this gap, which the iPad does so well, blurs the lines between what constitutes production and consumption of information. The group discussed the common attributes and issues each student found with the iPad; they also discussed how or if they envisioned it affecting their academic lives. The main points highlighted for each individual participant often rang true for the other participants.

Bonita, a third-year urban and regional planning undergraduate, was interested in the iPad for its potential to help her better organize her readings, notes, and schedule. She quickly discovered iBrainstorm, which lets the user draw on the touchscreen and then insert the image into a document. The application allowed her to copy diagrams her professor sketched during lectures directly into her notes, which she typed using the Pages application. Bonita used the iPad to organize all of her academic documents. She scanned handouts, saved them online, and discarded the paper copies. She also used GoodReader to read and annotate documents in most formats.

Kris, a Ph.D. candidate in communication and culture, was interested in the iPad for its potential to improve his research and writing workflows, as well as for the iPad's pedagogical implications. For Kris the real potential of the iPad is its ability to "democratize the learning process … to de-individualize and collectivize learning." Kris felt the biggest myth surrounding the iPad is that it is a tool best used for the consumption of media. He cites interactive applications, creative touchscreen tools, and collaboration with peers enabled by its size, portability, and intuitive interface as examples of how the iPad can be an essential tool for academic productivity. Along with the other participants, Kris voiced concerns over the lack of USB access and subsequent reliance on cloud computing. Kris soon began to favor the iPad over his laptop for reading and annotating documents. He organized his readings with the iPad-friendly bibliographic tool Mendeley and used iAnnotate to read PDFs and insert notes. When saving information sources such as webpages, newspaper articles, or blog entries, Kris used Instapaper, which automatically removes advertisements and cleans up menus and columns while allowing the user to preserve necessary images. It also stores a link to the original location and date of retrieval for citation.

Ashley, a third-year graphic communications management undergrad-uate, was drawn to the iPad for the tactile nature of the touchscreen and its impact on printed works. Ashley told us, "When I first heard about the iPad, I was terrified. I am in the printing industry and using a device that is in direct competition with print. Little did I know, it would be a great asset to print." Ashley praised an application called DisplayPad, which allows users to expand their desktop space, making the iPad essentially a second monitor with touchscreen capabilities. For her creative work in the pressroom, Ashley discovered the myPANTONE application to help her gather information on color and retrieve and re-create colors from anywhere. Using the iPad with myPANTONE, she learned a lot about the impact of color on a screen as opposed to in print.

Sarah, a public health student, was attracted to the iPad for its portability. Sarah pointed out that there are often situations where a laptop feels intrusive, while the iPad feels professional and discreet. Studying with the iPad, Sarah discovered that she felt less distracted, and she retained information more readily. Sarah attributed this to the application-based format of the iPad, which discouraged her from multitasking. The iPad's portability and quick startup allows for reading anytime anywhere, helping her to keep up with class readings. Sarah now favors iPad online readings over print, partly because the cost of printing is high and partly because reading for long periods with her laptop feels awkward.

Conducting library research with the iPad. On multiple occasions, students were asked to comment on the use of their iPads for library research. Students noted the convenience of taking the iPad into the stacks to locate books. There was also discussion about the size of the iPad. Because it is larger than a smartphone, the students would rather use the library's desktop interface instead of the mobile

catalog application, as it is more conducive to advanced catalog searches.

In the final week of the project, we asked the participants to blog about their experiences using the beta version of the library's Summon discovery tool called Search Everything. Students generally agreed that conducting intensive research online is more conducive to a desktop or laptop rather than the iPad. Kris commented that searching is already a "taxing enough activity on my desktop, and [I] prefer to devote as little time as possible to doing it, and to doing it on a big screen where all the tiny text and links are more readily apparent." Another student suggested that a Summon application would be an ideal way to use Summon via the iPad.

Considering iPad Loans for Your Library

Although a paperless library may be some time away for Ryerson, online resources have increased in popularity. The demand for content on portable devices has skyrocketed. The e-reader market is still dominated by Amazon's Kindle, but the iPad is becoming the preferred device when considering library loan potential because of its wide spectrum of applications including and beyond an e-reader. As our students discovered, the iPad is a hybrid device that can be used not only to consume information but also to produce new content.

Libraries were quick to begin incorporating iPads into their loan services. Early adopters among academic institutions were the Massachusetts Institute of Technology Lewis Music Library, North Carolina State University, Wake Forest University, and Boston College. Like any other device for loan, iPads require a specific set of policies and procedures as well as new staff workflows. The iPads are usually preloaded with applications, bookmarks, ebooks, and videos as well as documentation for their use. App Store and iTunes accounts are turned off in most

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cases, although some allow patrons to sync additional data and applications. All content and settings are restored to the original settings before the next checkout, and the program is mostly identified as a short-term loan ranging from 2 hours to a couple of weeks. Most programs are successful as they provide an opportunity for people to test them before buying.

Our students were supportive of the idea of iPads for short-term library loan. However, due to the personalized nature of this device (email, courseware, scheduling, music, and photos), they also expressed concerns that it would be difficult to start anew with each loan. The iPad seems most conducive to a much longer loan period, perhaps a full term. Moreover, the iPad is an expensive and vulnerable device, so theft and damage are of concern. At Ryerson we have an extremely popular laptop loan program; however, the operational costs for hardware replacement and ongoing maintenance are very high. Similar budget concerns would likely apply to an iPad loan program as well.

iPad technical issues. A number of technical issues presented themselves throughout the project. We originally imaged all of the iPads with the same configuration profile and App Store account. We thought that reconfiguring the devices with the latest software and applications would simplify the process for the students. If the students did not want to create their own iTunes accounts, they would not be required to do so. This would have worked well if we were running an iPad loan program. However, we quickly learned that the students needed to personalize their experiences to really engage with the software and embed the device into their studies, which the initial configuration would not allow.

Soon after starting this project, Apple released updates to iOS, Pages, and iBooks. This meant that the students would have to come to the library to update the software, as they did not have the account credentials to update it on their own. We discovered that iOS applications bind the content created with the applications to the registered App Store account, which meant that if ownership was transferred from the library to the student—as we were planning on doing at the end of the project—the content created as the library user would be deleted. Therefore, about 3 weeks into the project, we re-evaluated our approach and figured out a better way to manage the iPads and applications. We decided to let each student self-manage his or her device and to provide students with gift cards to purchase some of the applications needed for the project.

Project documentation. To document the project, we used an open source content management and social networking engine, Elgg. The software allowed us to create a private space where the students could blog their experiences, comment on each other's posts, organize meetings, discuss the project, and share links. This software proved extremely effective for these purposes. One issue we noticed with Elgg was that each time students made a post, they had to make sure it was only viewable by the group. The ethics approval we received from the university stipulated that any data provided by the students remain confidential. By not being able to set this as the default, we required the students to perform their due diligence to make sure their posts remained private. On one occasion, a post was made public for a few minutes, which allowed someone outside of the project to read and post comments. Another issue was that there were no email

notifications. When we left comments on blog posts, they tended to go unnoticed. We found that this obstructed the spontaneous discussions we were hoping to obtain. Both of these issues were fixed by a software update for Elgg that was applied halfway through the project.

Lessons Learned and Conclusion

Overall, we were very pleased with the results of the project. However, if we were to repeat it, we would do a few things differently. First, we would allocate a larger budget in order to have more participants and more tablets. It also would be helpful to conduct the project over a longer time frame. Students echoed this sentiment, as much of the first month or two was spent simply learning to use the device. We would also apportion funds toward purchasing peripherals such as keyboards and styluses. Three out of the 4 students purchased styluses, and one student purchased a keyboard, all using their own funds. Finally, now that the tablet market has expanded, we would include other device options beyond the iPad.

Following the project's conclusion, we presented our findings at a faculty conference. A number of faculty members approach us with requests for both general iPad help as well as subject-specific iPad application recommendations. We felt it would be interesting to incorporate a list of subject-appropriate applications in our current research guides as well as to hold "iPad Literacy" drop-in sessions in the library for faculty members. We are excited about the opportunities this presents for a new area of library collaboration and service delivery.

One of the most striking observations was that our participants were definitely in the minority as iPad users among their classroom peers. They often talked about how other students would ask them why they were using an iPad. We concluded that at this time the iPad is still a luxury technology, cer-
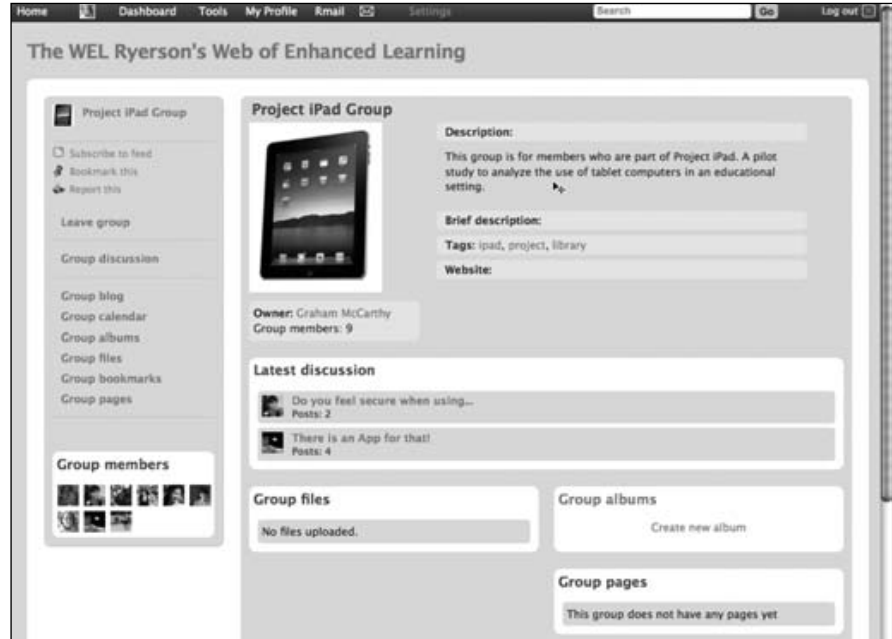
A website introduction to Project iPad

tainly not a device that all students can afford in addition to the more essential laptop and cellphone. That said, we found that the iPad, though not yet as integral to academic life as a computer, can be a powerful tool in aiding collaboration, encouraging organization, and assisting learning regardless of field or level of academic achievement.

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