Tufts iPads for Education Pilot: Phase 1, Fall 2012

Phase 1 of the iPads for Education pilot was a semester-long project sponsored by Tufts Technology Services (TTS) Educational & Scholarly Technology Services (ESTS) that was designed to:

- Increase awareness of how to effectively leverage mobile computing to improve teaching and learning across the University,
- Engage faculty in experimentation by providing them with an emerging technology & connections with their peers,
- Develop resources to support potential new teaching techniques,
- Identify support issues.

Participants selected through a university-wide application process were loaned iPads that were purchased via the TTS Mobile Initiatives fund. Apple's iPad was chosen as the platform based on its potential for educational applications (i.e., app availability), market share, and support reasons.

Who Participated?

<table>
<thead>
<tr>
<th>Fall 2012 Participation</th>
<th>Participants</th>
<th>Loaner iPads</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;S</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>Engineering</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>ASE student</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Dental</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Medical</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td>Gordon Institute</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Friedman</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Veterinary</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>TTS/CELT</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>66</td>
</tr>
</tbody>
</table>

- 90 faculty, staff, and students in total
- 79 faculty (73% borrowed, 27% used their own)

How did the Faculty Use the iPad for Teaching?

Participating faculty experimented with a wide range of iPad apps and activities for teaching. The 6 themes outlined below represent the most common use cases (listed by popularity). In each category, the names of apps used by 5 or more faculty and how they used them are listed.

1. Instant Access to Email & the Web

The most commonly reported benefit of having the iPad was easier access to email and to the web. This helped faculty more easily communicate with students and prepare for class.

<table>
<thead>
<tr>
<th>Apps Used</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail</td>
<td>To more quickly respond to students</td>
</tr>
<tr>
<td>Safari</td>
<td>To gather class-related content and download/capture screenshots of graphs/charts that support data points</td>
</tr>
<tr>
<td>Hoot Suite/Flipboard</td>
<td>To organize different social media channels and hashtags on class-related topics, and engage student in real-world information</td>
</tr>
</tbody>
</table>

Other apps: YouTube, TED, NOVA, Netflix, Podcasts, news related apps (NY Times, Time Magazine, Zite)

2. Enhanced Delivery of Presentations and Feedback, Note-taking, Use of Multimedia, and Remote Projection

The next most commonly used application of the iPad was to enhance classroom experiences, discussions, and artifacts in ways that are either not possible, or not easy on most laptops.
3. Cloud-Based File Management

Adjusting to new ways of storing and retrieving information is a significant part of the learning curve when moving from computers to tablets. Several faculty in the pilot discovered ways to manage this.

<table>
<thead>
<tr>
<th>Apps Used</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Evernote</td>
<td>To prepare lessons across devices and present them in class. To have students submit papers via Evernote and comment on their progress</td>
</tr>
<tr>
<td>Keynote</td>
<td>To create multimedia-friendly presentations directly on the iPad and project existing slides. To control slides remotely</td>
</tr>
<tr>
<td>PDF Expert/iAnnotate</td>
<td>To read class materials and create interactive slideshows with annotations and highlighting</td>
</tr>
<tr>
<td>Reflector *</td>
<td>To project the iPad screen on the laptop connected to a classroom projector</td>
</tr>
<tr>
<td>*Desktop software, not an app</td>
<td></td>
</tr>
</tbody>
</table>

Other apps: Notability, GoodReader, Bamboo Paper, SlideShark and Prezi (presentation), Dragon Dictate

4. Easy Capture/Illustration of Key Points

Several faculty effectively used the iPad's multimedia creation capabilities to create learning objects in a lightweight and timely way to support student learning.

<table>
<thead>
<tr>
<th>Apps Used</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dropbox *</td>
<td>To increase efficiency with personal file management. To share large files with students including video recordings of their presentation for later feedback</td>
</tr>
<tr>
<td>*Tufts now recommends tufts.box.com for cloud storage that you login in with Tufts credentials. This service provides 20GB of free storage for everyone at Tufts, but was not available at the start of the iPad pilot.</td>
<td></td>
</tr>
</tbody>
</table>

Other: iCloud

5. Connecting with the World: Conferencing

A handful of faculty leveraged the wireless connectivity & mobility of the device to bring guest speakers into the classroom virtually from remote locations. The FaceTime app that comes with the iPad can also be used for this but was not explored extensively during the pilot.

<table>
<thead>
<tr>
<th>Apps Used</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skype</td>
<td>To bring a guest speaker to class remotely</td>
</tr>
</tbody>
</table>

6. Other Use Cases

Some faculty reported interesting and potentially valuable explorations with the iPad, across these categories:

- Web access (Trunk, TUSK, Tufts Qualtric Survey, iTunes U)
- Audience response (mobile Poll Everywhere)
- Office Suite apps (CloudOn, Pages)
- Reading apps (Kindle, PDF Reader)
- Subject-specific apps
Recap of 4 Faculty Early Adopters

Below is a recap of the October 2012 faculty development event, which featured 4 faculty early adopters who presented on the ways they have started incorporating the iPad into their teaching.

Flipping the Classroom: Lynne Batchelder

Teaching goal: to prepare students with diverse backgrounds in chemistry.
Professor Batchelder used the Educreations app to create short pre-recorded lessons for her students. She effectively combined images, her voice narration, and writing on the iPad into these videos and shared these recordings with her students.

Facilitating Conversation: Kris Manjapra

Teaching goal: to engage students in dialogues and to use annotations to create and retain unique artifacts from each class session.
Professor Manjapra imported the text from each week’s Trunk Forum discussion into the iAnnotate app, marked up comments, and invited students to elaborate on their contributions. He also used Neu.Note to create and share handwritten notes during the class.

Leveraging Social Media: Pearl Robinson

Teaching goal: to foster student engagement by bringing real-world information into class in real time.
Professor Robinson used the Hootsuite and Flipboard apps to help students monitor topics and activities emerging real time in social media related to African elections. She also developed a Social Media Toolkit to guide students in connecting their analysis of the timely real-world information into their course readings.

Synthesizing Information: Tim Atherton

Teaching goal: to actively engage students in the process of learning.
Professor Atherton used Poll Everywhere (a web-based clicker system) to collaboratively develop questions and possible answer choices by having students propose answers in realtime; Then, he polled the class on the answer and facilitated discussion to reach consensus on the correct ones.

For more information: go to go.tufts.edu/iPadPilotFall12_TLR

What Support Did the Faculty Receive on iPad Experimentation?

Participating faculty received the following support opportunities:

- 1 basic setup and training session (1 hour long)
- 2 sign-ups offered for one-on-one basic training prior to the group workshops
• Group workshop 1:
  ‣ 36 faculty gathered to learn about possibilities of the iPad in teaching and learning presented by Apple Education professional (2 sessions in Medford, 1 session in Boston)
• Group workshop 2:
  ‣ 17 faculty gathered in Medford, showcased 4 instructors’ use cases and small group brainstorming. TLR Innovation Newsletter featured the event details: go.tufts.edu/iPadPilotFall12_TLR
  ‣ 8 health-science faculty gathered on a conference call, unstructured conversations
• Project resources produced by ESTS (in progress):
  ‣ Tips & Tricks handouts: sites.tufts.edu/ests/projects/ipads-for-education
  ‣ Student perspectives blog: sites.tufts.edu/atfellows

So, How Did the Pilot Go? Faculty Feedback

Overall Feedback
Based on the end of semester survey, total responses (N=50; 70% borrowers, 30% own)
  • Before pilot: 14% used the iPad for teaching
  • During pilot: 76% used the iPad for teaching
  • After pilot: 92% will use the iPad for teaching

Goals and Expectation
48 open-ended responses indicated the faculty’s original goals for their participation (category by popularity, # of mentions). They mainly hoped to:
  • Gain ideas and see the possibilities of iPad use in teaching (27)
  • Accomplish specific pedagogical objectives (13) such as:
    ‣ To enhance presentations including lecture slides, mobility in class using real-time note-taking/polling, editing demonstrations via projected screen (5)
    ‣ To grade papers/provide feedback for students
    ‣ To gain ideas on discipline-specific uses
    ‣ To evaluate Ebook publishing options
    ‣ To streamline the delivery of class materials
    ‣ To create video library for class resources
    ‣ To be more efficient in reviewing student writing/showing videos in class
    ‣ To use it as a collaboration tool to facilitate a blended mode of instruction
    ‣ To increase reflection and capture evidence of student learning experiences
  • Learn basic uses of the iPad and gain familiarity with the tool (8)

iPad Usage Frequency and Perceived Benefits

Highlights:
• 57% used their iPad to prepare for class.
• Most frequently, faculty capitalized on the iPad’s multimedia functions and used it as a presentation aid to classroom instruction.

How often did you use the iPad for each of the following tasks?

<table>
<thead>
<tr>
<th>Task</th>
<th>Weekly</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present slides to my class</td>
<td>21%</td>
<td>8%</td>
</tr>
<tr>
<td>Show websites or videos to my class</td>
<td>27%</td>
<td>17%</td>
</tr>
<tr>
<td>Show images to my class</td>
<td>32%</td>
<td>23%</td>
</tr>
<tr>
<td>Prepare for class</td>
<td>11%</td>
<td>68%</td>
</tr>
<tr>
<td>Engage students during class</td>
<td>24%</td>
<td>18%</td>
</tr>
<tr>
<td>Connect with guest speakers via Skype or Web conference</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>Grade student assignments</td>
<td>17%</td>
<td>25%</td>
</tr>
<tr>
<td>Provide feedback to students</td>
<td>11%</td>
<td>44%</td>
</tr>
<tr>
<td>Write on the iPad and annotate slides or images in class</td>
<td>15%</td>
<td>11%</td>
</tr>
</tbody>
</table>
• 60% that used the iPad’s multimedia functions found it to be useful in their instruction.

Not many faculty indicated to what extent their goals were met, but of those who did reported mixed outcomes. Almost equally divided, about a third of the faculty felt their experiences either met or exceeded their original goals for learning, another third felt their goals were somehow met but not fully fulfilled, and the remaining third felt their experimentation fell short of their initial expectations, as a result of the following challenges:

• Lack of time for experimenting or scheduling problems (16)
• Technical issues ranging from classroom/office internet connectivity to difficulties with the iPad touch interface and/or operating system (11)
• Overcoming a learning curve with tablet computing (11)
• Same measure/expectation to work as a laptop replacement (6)
• Students not having iPads (3)
• Lack of ideas for useful application (2)
• Did not see much value (2)
• Classroom management that required multitasking between devices (1)
• Lack of a sense of ownership with the loaner device (1)

Several challenges in using mobile apps were reported:

• Language apps not mature enough for college students
• Cost of using a polling app (poll everywhere) for more than 40 students

“\textit{The main issue is discovering the right apps to get the job done and trying to get the most out of them.}”

**Change in Teaching**

50%+ indicated that they have made plans to experiment with the following in their future teaching, as a result of this pilot:

• Flipped classroom so class time is spent on engaging activities and/or more breaks in lectures.
• Lecture-related multimedia creation
• Leveraging more multimedia in class (NPR, YouTube)
• Using Keynote
• Annotating lecture slides
• Annotation/drawing apps for language instruction
• Projecting editing processes live
• Polling apps
• Skype conferences with students
• Remote projection
• Whiteboarding
• Demonstration of electronic medical records
• Student video projects demonstrating a concept
• Interactive workbooks
• Engaging students in the larger world through social media
• Accommodating students with different learning preferences via more varied instruction & assessment
• More student grading using markup apps
• Better use of images in class
• Student collaboration
• Using 3D medical models during lecture
• Employing the ability to change the “language speak” setting during language classes

Future engagement

• 94% of the pilot participants expressed an interest in being informed of the pilot’s results including a report.
• 85%+ of the pilot participants indicated that they have an ongoing interest in sharing practices via peer group meetings and/or would welcome the opportunity to observe instruction in an iPad-based classroom and provide feedback.

What’s Next?

The Fall 2012 faculty pilot allowed ESTS to carefully select 4 Spring 2013 instructors that proposed pedagogically meaningful uses of the iPad in their seminar-style classes. All of these instructors and their students have checked out an iPad for the semester with the following goals:

• History of the Book (16 students): To access primary resources and stimulate discussion
• Intermediate Japanese (5 students): To help students learn Japanese with mobile language resources
• Occupational Therapy (10 students): To improve student reflections during fieldwork
• Affective Neuroscience (16 students): To simulate student-led class discussion

The participating faculty attended an idea-sharing workshop prior to class and updated their syllabus to reflect meaningful integration of the iPad into their courses. Also, they share monthly reflection notes, implemented a mid-term evaluation of their iPad integration activities, and will share their lessons learned in the near future.

“I think what is changing me the most is the old idea that "change" in my curriculum is difficult and inconvenient, involving time consuming activities like tracking down web sites or making hard copies of new articles or saving something to my hard drive and trying to retrieve it in time for class. Instead, I feel this tool is giving me a new way to be flexible, adaptable, and creative -- realizing that not everything has to be saved and stored, but many things can be worked with in the present while the energy is fresh. I think this matches my personality and teaching style -- so in short, it is a liberating experience to have this tool!”

iPads for Education Pilot
sites.tufts.edu/ests/projects/ipads-for-education
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it.tufts.edu/ests
Questions/feedback? Email us at edtech@tufts.edu