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<tr>
<td><strong>Author(s)</strong></td>
<td>Churchill, D; Lu, J; Wang, T</td>
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<tr>
<td><strong>Citation</strong></td>
<td>The 8th eLearning Forum Asia 2013, The Hong Kong Baptist University (HKBU), Hong Kong, 29-31 May 2013.</td>
</tr>
<tr>
<td><strong>Issued Date</strong></td>
<td>2013</td>
</tr>
<tr>
<td><strong>URL</strong></td>
<td><a href="http://hdl.handle.net/10722/187649">http://hdl.handle.net/10722/187649</a></td>
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Exploring the Educational Affordances of the Current Mobile Technologies: Case Studies in University Teachers’ and Students’ Perspectives

Dr. Daniel Churchill
Dr. Jie Lu
Mr. Tianchong Wang

The University of Hong Kong
The iPad as a Pedagogical Tool

• The proliferation and growing popularity of iPads and iPad-like tablets

• A potential “transformative technology” that create flexible, collaborative, and inquiry-oriented learning environment

• Appropriate model for the use of iPads in teaching and learning must be developed
Case Study 1 - Teachers’ Perspective: Research Questions

• How higher education teachers adopt iPads in their teaching practice?

• How their perceptions change through the process?
Participants

9 participants were selected from a range of different disciplines at HKU.

- Department of Mechanical Engineering
- Department of Civil Engineering
- Department of Electrical and Electronic Engineering
- Faculty of Education
- Faculty of Dentistry
- School of Chinese
- School of Public Health
- Faculty of Law
- School of Biological Science
Teachers’ Private Theories (Churchill, 2005)

• Teachers’ use of technology is guided by a set of private theories

• 6 areas of teachers’ private theories were identified that impact instructional decision making and technology integration: learning, students, teacher’s role, technology, planning and design, and educational changes

• These 6 areas of private theories serve as an analytical framework for understanding the participating teachers’ uses of iPads
Piloting Study: Apps Downloaded/Used (Churchill, Fox, and King, 2012)

- **Productivity Tools**: word-processing, document annotation, creating of multimedia material tools
- **Teaching Tools**: support classroom teaching, such as those that support connection to a projector, mark-book, presentation tools and classroom management tools
- **Notes Tools**: enable note taking in combination with audio recording, drawing and typing
- **Communication Tools**: support communication and social networking
- **Drives**: allow connectivity to the Cloud, network drives and a computer
- **Blogging**: allow convenient blogging via the iPad
- **Content Accessing Tools**: e-books, multimedia material and video accessing tools, etc.
The Ongoing Study: Teachers’ Perceptions and Changes

• Size does matter!
The Ongoing Study: Teachers’ Perceptions and Changes

- Mobile Ergonomics
- Instant On
- Battery Life
- Easy to Use
- Tactile
- Apps
- Access to Resources
- Sharing and Interaction to Support a more Student-Centred Teaching Paradigm
The Ongoing Study: Teachers’ Perceptions and Changes

Issues that discourage teachers to adopt iPads for teaching:

- Document Format Compatibility
- Connecting to Classroom Projector
- File Management, Syncing
- Inputting Text on Touch Screen
- Students’ Ownership of Tablets (iPads/Android-based tablets)
- “Technology Dance”?
Further Work

• Explore perception change through adopting iPads
• Theoretical understanding such a change
• Recommendations that support teachers to effectively adopt iPads in their future teaching practices
Case Study 2: students’ perception and adoption of mobile technologies for learning

• Research questions 1: How do students perceive mobile technologies as learning tools?

• Research question 2: How do students apply their mobile devices in a postgraduate course?
Participants

- Nine students enrolled in a postgraduate course “Learning objects” in a university in Hong Kong
Pedagogical design and learning environment

- Online Learning Platform - Edmodo (Mobile and Web versions)
- Group Project and Learning Portfolios
Results

• Student common usage of mobile technologies in daily lives
  
  ➢ Communication and social networking
  ➢ Scheduling daily activities
  ➢ Locating places using mapping and navigation apps
  ➢ Searching information and resources on the Internet
  ➢ Accessing online content (e.g. e-books)
  ➢ Producing multimedia, such as video recording and photo taking
Results

- Students’ perceived usefulness of mobile technologies as learning tools

![Bar Chart]

- Free apps with various functions
- Multimedia production and sharing
- Individuality
- Internet access
- Multi-touch input and interactivity
- Social interactivity
- Portability
Results

• How students used their mobile devices to support their learning in the course?
  ➢ Tracking what was going on in online learning environment
  ➢ Keeping contact with other group members
  ➢ Reviewing learning materials uploaded by the teacher anywhere and anytime
Results

• Students’ perceived challenging aspects of learning with mobile technologies
  ➢ Limited WIFI coverage
  ➢ Inconvenient input method
  ➢ Lack of learning materials tailored for Smartphone/Tablet PC
What we have learned from these two case studies

• Do teachers really know students’ expectation about how the mobile technologies can be used in learning?
• What are factors causing the disjoint usage between daily life and learning contexts?
• What kinds of supports the teacher needs in order to maximize the educational affordances of the mobile learning technologies?
Thank you

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