Ubiquitous Technology for College Success: Apps+

Linda Hecker
lhecker@landmark.edu
Landmark College Institute for Research & Training

• What are your goals for this workshop?

What do you know about Apps?

What type of Apps do you use?

• Road Map

1. Increased use of mobile app technologies in college
2. Use of Universal Design for Instruction© to evaluate apps
3. Accessibility, Usability and Effectiveness of Apps
   • Note-Taking
   • Writing
   • Reading
4. Concluding thoughts

• State of the ‘Apposphere’

• Apps: self-contained, specialized, mobile software applications

• Over 850,000 mobile apps available; 50,000 apps for education (Apple.com; Google.com)

• 56 billion smartphone apps and 14 billion tablet apps will be downloaded in 2013 (Flurry, 2013)

• 1.2 billion mobile app users worldwide in 2012, 18% of these users live in North America; expected to reach 4.4 billion in 2017 (Portio Research, 2013)

• Apps are Ubiquitous and Mainstream

• Technology is no longer simply assistive or compensatory for students with disabilities, but is redefining learning goals and teaching methods (Rose & Meyer, 2000)

• Read, write, or learn in any environment

• Movement away from “deficits model” towards inclusive learning environments (Gregg & Banerjee, 2008)
• **How to Select Apps?**

- Overwhelming number of choices
- No single yardstick or gold standard for evaluation
- Apps should be evaluated on their ability to address individual needs at multiple levels (Cheeseman, 2012)

➢ **Universal Design for Instruction**

- **Universal Design for Instruction (UDI)**
  
  “An approach to teaching that consists of the **proactive design** and **use of inclusive instructional strategies** that benefit a broad range of learners including students with disabilities.” (*Scott, Mcguire, & Embry, 2002*)

- **How to Select Apps?**
  Adapted from Banerjee, Brinckerhoff, Prasad, 2013

- **Accessibility**: is the degree to which an app makes course content obtainable to diverse learners.

- **Usability**: is the degree to which an app can be easily navigated and operated.

- **Effectiveness**: is the degree to which the features of an app can support a skill and produce a selected outcome.

- **Customizable Evaluation Matrix**

- **Note-taking Apps: screen shot of annotation**

- **Note-taking Apps: screen shot of media input**

- **Note-taking Apps: screen shot of exporting notes**

- **Apps Review Sites**
  - [http://www.edutopia.org](http://www.edutopia.org)
  - [http://www.iear.org/](http://www.iear.org/)
  - [http://www.edudemic.com](http://www.edudemic.com)
  - [http://teacherswithapps.com/](http://teacherswithapps.com/)
  - [http://educationappreviews.com/Education_App_Reviews.html](http://educationappreviews.com/Education_App_Reviews.html)

- **Cognitive Load**

- **Survey of College Students with LD, ADHD, and ASD and Apps Use**
  - Small pilot study (n=62) in fall 2013 - spring 2014
  - Online student survey
• **Selected Findings:**
  - 88.9% said they use smart phone for schoolwork
  - Apps for note-taking (12 different apps were mentioned)
  - App feature most useful for note taking – audio recording that synchs with text
  - 66% said they use apps for writing; most useful feature was voice recognition; improved legibility; cloud storage so you don’t lose or forget work
  - Most useful feature for reading apps – variety of voices and options for font and color (71.4%)

• Empowering Students

• **Apps for Academic Skills**
  - **Note-taking:** Recording and organizing information from a course; planning for studying
  - **Writing:** Organizing thoughts, ideas, notes and resources into an outline and then into a draft
  - **Reading:** decoding text; understanding vocabulary; annotating text; creating study guides and summaries

**Guiding question for students:**

What do you struggle with primarily in each of these areas?

• **Note-taking Apps**

• **Why Take Notes:**
  - Develops active listening
  - Help clarify confusions
  - Improves long-term information storage
  - Results in better test grades
  - Note-taking: cognitive load

• **What Does Research Say?**
  - Computer-aided transcription supports working memory, better notes, better recall (Bui, Myerson, & Hale, 2013)
  - Converting to a visual format improves comprehension and recall (Weishar & Boyle, 1999; Makany, Kemp & Dror, 2009)
  - Deeper processing supports better recall (Hyde & Jenkins, 1973; Cermak & Craik, 1979)
  - Organizing Notes from Notability
• Pull out main ideas
• Highlight key points and important vocabulary
• Identify and fill-in gaps in your notes
  • Work with a partner if you are taking physical notes
  • Reference the audio recording if available
• Outlining with Notability
• Mind Mapping –Notability Tools
• **Thought Organization Apps**
  • Writing and Reading: cognitive load
• Scaffolds and Supports
• **Task analysis**: raise awareness of the time and the multiple steps it takes to complete a task
• **Individualized Process**: strategic step-by-step plan
• **Graphic organizers**: scaffold challenging tasks, helps organize assignments, manage and breakdown overwhelming schedules
• **Best practice: Concept Maps**
  • Inspiration Diagram
  • Inspiration Outline
  • Inspiration Brainstorming
• **Reading Apps**
  • Shallow vs. Deep Processing
  • Active Reading
  • Breaks down comprehension into manageable, predictable steps
  • Scaffolds gaps created by problems in attention, memory, and language comprehension
  • Integrates comprehension with writing about texts (summarizing)
• **Active Reading Steps**
  1. Preread
  2. Read and Highlight
  3. Paraphrase and margin note
4. Chunk by topic
5. Summarize
   • Step 2. Read and Highlight
   • Apps that support active reading
   • Exemplar app: iBooks
   • Large selection of trade books and texts
   • Full color, interactive features
   • Most extensive annotation tools
   • Exportable highlights and notes
   • Similar apps
   • Kindle
   • Adobe Reader – annotating/editing PDF’s
   • Voice Dream Reader – when you need built-in text to speech

ANNOTATING iBOOKS
   • Annotation Process
   • Personalize reading experience
   • Annotate
   • Review Annotations
   • Export Annotations
   • Emailed Notes
   • iBooks Text Books: special features

Built-in study tools
   • Glossary = study cards
   • HL automatically convert to note cards
   • Note cards can be emailed
   • iBooks Texts: Study Cards
   • iBooks Texts: Study Cards
• Adobe Reader
• Adobe Reader
• Reads PDF’s
• Annotates
  – Multi color highlighting
  – Underline
  – Sticky notes
  – Text notes
• Exports notes
• Converts to Word/excel (monthly fee)
  – Adobe Reader: emailing annotated PDF
• Voice dream reader
• Voice Dream Reader
• Full functioned text-to-speech
• Variety of voices
• Limited annotation tools
• Exportable notes and highlights

**App-lication and Conclusion**
• Tips to Support Success
  – Start simple
  – Practice daily
  – Stick with it
  – Daily appointments with self
  – Check off completed work
  – Track completed and pending assignments

**Concluding Thoughts**
• Current approach towards finding appropriate educational apps is "hit or miss"
• Input from actual users in **authentic** and **varied** situations is critical
• Continue to use assistive technologies for access, but consider apps to increase efficiencies in learning and reduce cognitive load
• Identify a core set of apps – frequent use