In the last column, I discussed the role of mobile devices (i.e., phones, tablets, laptops) in everyday lives and in academia. In this column, I’ll review specific apps for fostering literacy development. Still, with over 800,000 apps for Apple and Android devices (iOS or Android respectively) and the Windows phones catching up, only a few apps can be shared in this space.

First, a caveat: the apps discussed here are based upon an epistemological stance that literacy instruction should be integrated. That is, a belief that reading and writing are cognitive processes allowing humans to socially construct meaning in a variety of contexts including but not limited to academia. Readers and writers, speakers and listeners, consumers and producers all construct meaning through an interaction between their knowledge, a text, and the context using cognitive and metacognitive strategies to fit their goals. Thus, integrated reading and writing (IRW) is meaning making through literacy activities in a broad sense. Literacy is negotiated (Holschuh & Paulson, 2013) in this sociocultural context by sharing one’s understanding through consuming and producing texts broadly defined as oral, print, graphic, audio, and video.

Given these assumptions about literacy, how can mobile apps benefit students in this academically literate context. Much like cooking a good vegetable soup, IRW is an iterative process whereby students gather information as they consume texts, arranging that information by adding or adapting it into their prior knowledge, producing a draft text to represent that knowledge, and presenting that draft to solicit feedback. Then, reflecting and responding to that feedback, students cycle back through as they gather, consume, arrange, add, adapt, produce, and present until they feel meaning is made. Also, like a good soup, students have to let it go at a point and reflect on what they would do the next time.

To extend this conversation, I invite you to a DevEd Apps blog (http://devedapps.wp.txstate.edu) where you can access all the citations, discuss the free and low cost apps I am citing, share other useful apps and how to implement them, share research on mobile learning, and add comments. At this blog, I have also organized these apps into a process model and populated it with apps that I cite within this article (Caverly, 2013).

**Mobile Apps for IRW**

Let’s say a professor wants his or her students to learn about the Grand Canyon by producing one of three concise, multimodal guides for park visitors. Breaking the class into three project perspectives (historical, geological, and marketing), students must recognize their perspective’s assigned task as the first step in this academic environment. Posting the task to a Learning Management System (LMS), the professor encourages students to read the assignment and rubric using mobile apps such as Blackboard Mobile, Desire2Learn, or many others specific to the LMS.

Next, students use mapping apps like MindMeister or Inspiration to brainstorm and consider their existing knowledge about this task. As they write, students organize prior knowledge using their chosen perspective as the major topics, adding whatever details they know about the canyon.

MindMeister also allows students to collaboratively share their individual maps among their project group, evaluating what information is similar, different, or missing. Other apps, then, allow the project group members to accumulate additional knowledge through the mobile version of Google Search which can be voice controlled. Once a useful source is found, bibliographic information can be captured using apps like ZotPad (for iOS) or Zandy (for Android) which sync with Zotero for the laptop or desktop, facilitating the creation of a reference list. News aggregator apps like Flipboard or Zite allow students to get current text or images or create personal e-magazines fostering lifelong reading. Other apps are available for e-textbooks like CourseSmart or Kno whereas apps like Kindle or Bluefire Reader allow students to download free e-books. Built in Accessibility options on mobile devices can be activated which will read out loud highlighted text, provide links to definitions or websites, and allow devices to be voice controlled for students with handicaps.

Useful apps like Readability allow students to clear out advertisements from websites and save sites for reading offline. Still other apps like Evernote allow students to capture a resource into group notebooks and provide spaces to share searchable tags, attachments, images; and written, video, or voice notes. Using Evernote or apps like Diigo, the professor can add marginal questions in PDF documents stored in an Evernote class notebook for students to read and annotate. Students can also return to MindMeister to collaborate on critically evaluating the sources for their information validity.

Once this new information is collected, the group members can collaborate on merging the new information into one map for their project group, discussing where the information fits using MindMeister. If the group decides their map is reasonably complete, each group imports its map from MindMeister into a Google Drive document to present the map and to solicit feedback from one of the other two groups. Each group can add comments using designated colored text. The professor should add a rubric to the Google Drive document pages and encourage students to use the rubric to guide their reviews of the other group’s map.

After this first peer review, the separate groups determine the completeness of their information based upon peer feedback. At this point, they might decide to cycle back through accumulating more information sources, merging this information into their group maps, and again presenting their maps to a second group for additional peer review. If they feel their group map is complete, they should arrange the major ideas in their map using MindMeister to better cohere to the discipline-based macrostructure befitting their perspective: the historical group into a sequential macrostructure, the geological group into a cause/effect macrostructure, and the marketing group into a comparison/contrast macrostructure.

Next, the groups should orchestrate converting their maps into a multimodal text, choosing from apps that allow the creation of: (a) an essay using QuickOffice; (b) a slide show using ProShow, Animoto, or QuickOffice; (c) an audio podcast using Garage Band or Sprakers; or (d) a video podcast using Instagram, Magisto, or iMovie. This professor had students choose a different type of multimodal text for each unit throughout the semester as students consumed and produced different genres of narrative, expository, persuasive, and argumentative texts. After a draft of the multimodal text is created, students should share their draft again with peers, soliciting feedback on the new formatting. Here, a specific rubric for each type of multimodal text and each genre would be useful for the students in one project group to provide feedback to students in another project group.
During the peer review, project groups could negotiate with their reviewers to identify where meaning is inadequately constructed. Questioning circles (Christenbury & Kelly, 1983) can help students understand areas of inadequate meaning making through discussing the interactions between the author, reader, and the multimodal text. Viewing interactions as separate and overlapping circles as in a Venn diagram, students would discuss how to clarify meaning in an app such as Google Blogger. Once meaning is agreed upon between the project groups who are producing and the project groups who are consuming the multimodal texts they should own their learning process. This reflection is vital for motivation to use these strategies in the future.

The last step in the process is for individual students to evaluate using apps like DayOne (for iOS) or Memories (for Android) on the effectiveness of the IRW strategies used during this process of consuming meaning from other texts and producing meaning into their own multimodal texts. This reflection is vital for motivation to use these strategies in the future.

**Conclusion**

Students are already using a variety of mobile apps. Applying these and instructional apps, students can be guided through authentic, integrated reading and writing. This mobile learning experience is enhanced by collaborative interaction afforded by these various apps. To guide students through this process, an acronym can be helpful for instructors. Uncover a technology “Easter egg” by returning to the subheading “Mobile Apps and IRW.” Write down the first letter of the boldfaced words in the odd-numbered paragraphs, and then return to the subheading “Mobile Apps and IRW,” write down the first letter of the boldfaced words in the even-numbered paragraphs. Then return to the subheading “Mobile Apps and IRW.” Write down the first letter of the boldfaced words in the odd-numbered paragraphs. Then return to the subheading “Mobile Apps and IRW.” Write down the first letter of the boldfaced words in the even-numbered paragraphs. Then return to the subheading “Mobile Apps and IRW.” Write down the first letter of the boldfaced words in the odd-numbered paragraphs. Then return to the subheading “Mobile Apps and IRW.” Write down the first letter of the boldfaced words in the even-numbered paragraphs. This resultant acronym helps instructors and students remember that this is a reading and composing process.

**References**


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