Techtalk: Mobile Learning and Literacy Development

By David C. Caverly

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, mulitmodal 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 a *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 *Spreakers;* 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 should be **disseminated** in open source venues using apps like *Google Drive*, a *WordPress* blog, a *YouTube* video channel, or even a class *Facebook* site.

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, then, 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 same subheading and write down the first letter of the boldfaced words in the even-numbered paragraphs. The resultant acronym helps instructors and students remember that this is a reading and composing process.

References

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David C. Caverly (dcaverly@txstate.edu) is a professor in the graduate developmental education program within the Department of Curriculum and Instruction at Texas State University-San Marcos, San Marcos, TX 78666.

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Appendix C: Observation Form

SRL Observation Form

After observing the instructor for at least one hour, **circle the appropriate value** to represent the frequency and quality of each behavior.

Instructor: _____ Observer: _____ Class: _____ Date: _____

Description of target behavior	Write a check mark for each time you see this behavior.	How often was each behavior carried out? Never 1 2 3 4 5 Very Often	Was the behavior carried out systematically?
1. Teacher models specific strategies at each step of the problem		1 2 3 4 5	Yes No
2. Teacher writes down strategies clearly on the board in words		1 2 3 4 5	Yes No
3. Teacher explains to the students that they need to write down strategies		1 2 3 4 5	Yes No
4. Teacher encourages students to monitor strategy use during problem solving		1 2 3 4 5	Yes No
5. Teacher makes deliberate errors during presentation		1 2 3 4 5	Yes No
6. Problem solving errors are used as a departure point for analysis, i.e. teachers don't just start over or quickly correcting errors themselves		1 2 3 4 5	Yes No
7. Teacher refers to strategy steps for correcting errors		1 2 3 4 5	Yes No
8. Teacher encourages individual practice of strategies for problem solving and error detection		1 2 3 4 5	Yes No
9. Teacher encourages students to go to the board to demonstrate problem solving / error detection strategies		1 2 3 4 5	Yes No
10. Teacher encourages students to verbalize error detection / problem solving strategies while reviewing practice problems		1 2 3 4 5	Yes No
11. Teacher leads discussions about goal setting, self-monitoring, or other definable parts of the SRL model		1 2 3 4 5	Yes No
12. Students have the opportunity to check their understanding (discuss answers to problems and errors) with peers in pairs or groups.		1 2 3 4 5	Yes No
13. Teacher calls on students that are avoiding participation, inspiring a healthy academic tension in the classroom.		1 2 3 4 5	Yes No
14. Teacher aims to get students who are struggling with the material involved in some way, e.g. calling them to the board for demonstration, asking them to explain strategies, pushing them to discuss errors and strategies during individual practice.		1 2 3 4 5	Yes No
15. Teacher moves around the classroom during practice and attempts to give feedback to each student		1 2 3 4 5	Yes No