A FRAMEWORK FOR USING iPADS TO BUILD EARLY LITERACY SKILLS

Laura Northrop • Erin Killeen

Not sure if your students are playing or learning on their iPads? This article describes how to integrate iPads into classrooms to effectively and engagingly teach early literacy skills.

The rapid adoption of iPads and other tablet devices by schools creates a new opportunity to use the technology in early literacy skill development. Increasingly, students also have access to tablets and smartphones at home, giving educators an excellent opportunity to use these technologies to connect school and home learning activities. However, we argue that this technology needs to be used in a careful and deliberate way to ensure learning and development of early literacy skills, and we show how the gradual release of responsibility model (Duke & Pearson, 2002; Pearson & Gallagher, 1983) can be used to integrate iPads into the classroom effectively for emergent and beginning readers.

Integration of technology into the classroom to promote understanding of 21st-century literacies is an important curricular goal promoted by the

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International Reading Association (2009). Likewise, technology is an important component of a globally focused, globally linked classroom (Suarez-Orozco, 2007) and an important component of an elementary classroom. Although students can be given direct instruction on technology, technology can also be used to focus on traditional curricular goals (Hutchison, Beschoter, & Schmidt-Crawford, 2012) to implement the Common Core State Standards. However, this integration needs to be done thoughtfully to best ensure positive learning outcomes for our students. Although little research has been done on the use of iPads and smartphones as learning tools, past experiences with technology can help guide future use of tablets in the classroom.

Including technology can increase student engagement and motivation (Chiong, Ree, Takeuchi, & Erickson, 2012); however, it is important to realize that use of technology does not automatically lead to increased student achievement. Studies examining comprehension of children reading e-books, both on the computer and, more recently, on tablets, find that children recall fewer narrative details when reading e-books and that students can become distracted by animations or enhanced content (Chiong et al., 2012; de Jong & Bus, 2002).

Because student achievement may actually be hindered by the use of technology, it becomes important, then, to ensure that the iPad app is used to enhance curricular integration and support identified learning goals and is not simply used for technical integration or as an instructional add-on (Harris & Hofer, 2009; Hutchison et al., 2012).

Once curricular goals and appropriate technology are identified, teachers need to consider whether the technology is providing instruction at a student’s appropriate level. Studies examining comprehension of children reading e-books, both on the computer and, more recently, on tablets, find that children recall fewer narrative details when reading e-books and that students can become distracted by animations or enhanced content (Chiong et al., 2012; de Jong & Bus, 2002).

Pause and Ponder

- How do you use iPads in your classroom? How might this change based on the gradual release of responsibility framework?
- Do the apps you use with your students include any potentially misleading or incorrect material? Can you modify your instruction to include only the parts of the apps that correspond with your instruction?
- How can you best support a home–school connection by having parents use iPads and smartphone apps with their children? How can you support students who do not have access to iPads or smartphones at home?

One study, in which researchers controlled for students’ previous story recall ability, found no difference in comprehension between e-books and books read aloud by an adult, noting that “kindergarten children who have reached a stage in which they can understand stories are able to retell a story when they experience it independently in electronic form,” (de Jong & Bus, 2004, p. 390). This suggests that for technology to be effective, it needs to be situated in the zone of proximal development of a student (Vygotsky, 1978) and allow the student to work with material at his or her instructional or independent level. We caution that just because a student may be technologically capable of using the app doesn’t necessarily ensure that he or she understands the literacy content in the app.

A Framework for iPad Integration

To ensure that students are working at their instructional or independent level, and accessing and working with the desired literacy content, the instructional framework of gradual release of responsibility (Duke & Pearson, 2002; Pearson & Gallagher, 1983) can be modified and applied to tablet use. Following this instructional framework, a teacher first explains and models the activity, followed by guided and independent practice by the student. This gradually shifts the instruction from teacher-centered to student-centered and allows teachers to scaffold and guide students’ understanding of the material. This framework also allows teachers to make adjustments and provide feedback as necessary. Ideally, students will internalize and automate the reading processes and strategies taught with this direct instruction.

Here we present a sample phonics lesson showing how this framework can be applied to iPad use in the
classroom, whereas Table 1 gives a general framework for integrating apps into classroom instruction. This lesson uses the app abc Pocket Phonics (Apps in my Pocket Ltd, $2.99; Lite version is free). This app is designed to teach letter formation, letter sounds, and blending of simple words. The app begins with initial and final consonants and short vowels and provides some practice with long vowels and long vowel patterns in the later sequences.

We like this app because it allows students to hear the letter sounds and then manipulate the letters into words. Limitations of the app include not teaching letter names and having a limited number of words to blend, so students may move quickly through the practice items or may quickly find themselves working with phonics concepts that are too difficult. For example, the app begins with medial, mixed short vowels with CVC words, but within 10 words includes preconsonantal nasals such as /nt/.

Because even the first lesson on this app uses both initial and final consonants and medial vowels, we recommend that students be familiar with both concepts and ideally be situated in the late letter-name stage (Bear, Invernizzi, Templeton, & Johnston, 2012) of word study development. To be successful with this app, students need to be ready to practice blending individual sounds into words with feedback from the teacher.

In our sample lesson, the app is set for practice with word manipulation only (removing the letter formation and letter sound practice feature) and is set to allow access to all letter sounds so students can progress through multiple levels. Our model lesson starts with the first lesson, which can be accessed by clicking on the letter s. After designing the framework, we tried it with two students one-on-one during tutorials. Students were from different grade levels, but both were beginning readers.

### Teaching Letter–Name Phonics With iPad Integration

**Step 1: Teach the Concept Without the iPad**

First, teach the literacy concept using explicit instruction before using the app. Apps provide plenty of time for practicing literacy concepts, but should not be substitutes for directly teaching concepts. Without prior instruction in the literacy component, it is likely that students will not really be applying the literacy content knowledge in a meaningful way.

We suggest teaching letter–name phonics concepts by using explicit, direct teaching and progressing through a systematic sequence of phonics that includes initial and final consonants, medial short vowels, mixed short vowels, consonant blends and digraphs, and preconsonantal nasals before moving onto long vowel patterns. One highly effective way to teach phonics concepts is through direct explanation and modeling with word sorts (Bear et al., 2012). Word sorting allows students to compare and contrast the letter sounds and phonics feature and

### Table 1 A Framework for Effective Teaching With Apps

<table>
<thead>
<tr>
<th>Step</th>
<th>Guidelines</th>
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<tbody>
<tr>
<td>Step 1: Teach the targeted literacy skill without the app</td>
<td>Teach the literacy concept before introducing the app with direct instruction.</td>
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<tr>
<td>Step 2: Explain and model the app</td>
<td>Explain the literacy concept the app uses, directly connecting to the concepts students learned in step 1.</td>
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<td>Demonstrate how to open and access the correct level of the app.</td>
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<td>Model 2–3 examples, using a think-aloud to make your thoughts and questions visible to the student.</td>
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<td>Step 3: Guided practice with the app and with the targeted literacy skill</td>
<td>Determine whether your students can successfully navigate the technology aspects of the app, such as how to turn it on, how to choose the correct level or game, and how to progress from item to item.</td>
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<td>Determine whether your students can successfully work with the literacy concept of the app, asking questions such as “What are you practicing with this app?” or “Why are we playing this game?” or “Can you explain why you chose that answer?”</td>
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<td>Watch while your students use the app, noting any misconceptions, difficulties, or specific places where their application of the literacy skill is incorrect.</td>
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<td>Create questions to guide your students when they are incorrect, such as “Why do you think that answer was wrong?” or “What do you need to change to make that answer correct?” or “Do you have another idea?” or “Would you like me to show you how to do that problem?”</td>
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<tr>
<td>Step 4: Independent practice with the app</td>
<td>Make the tablets and apps available during center time and independent set time.</td>
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<td>Extend learning by having students use words or concepts from the app in other activities.</td>
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<td>Collaborate with parents to continue learning at home on family tablets or smartphones.</td>
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“For each app, we recommend creating a list of guiding questions that you can use to help students learn the program.”

Step 2: Explain and Model the App
Introduce the app as a way for students to practice what they have learned in their word-study instruction. To ensure that students are successful with the app, explain and model how to use the program with the students.

First, explain the specific literacy concepts targeted by the app: “Today we are going to practice blending the sounds together to form words. Remember that letters make sounds, and if you say those sounds together really fast, you can make a word.”

Second, model how to use the app. When modeling, be sure to model both how to use the app and the literacy content within in the app. Here, you may say: “I will show you how to use the app and how you can think about blending letter sounds into words as you use the app. First, click on the app, and then, click on your name [the Lite version does not allow for student customization]. Today we are going to start with the first lesson, so click the letter s here.”

Once the students have accessed the appropriate program and level, model the literacy content in the app. Use a think-aloud process to make your thinking and reasoning visible to the students. Here, you would say: “I hear the sound /a/. I see three letters—a, s, and t. Which letter makes the /a/ sound? Let’s think. When the letter a is a short vowel, it makes the sound /a/, like in cat. So I think that’s correct, but I’m going to check the other letters just to make sure. My second letter is s. That makes the /s/ sound. The third letter is t. That letter makes the /t/ sound. So I’m going to choose the letter a, because that makes the same sound that I heard.”

Once you choose the letter a, continue with your think-aloud: “Now I hear the sound /t/, and I need to find the letter that makes that sound. I see the letters a, s, and t again. I remember that we just figured out that the letter t makes the /t/ sound. So I’m going to choose the letter t, because that makes the same sound that I heard.”

Now that both letters have been chosen, the app will blend the two sounds together for the student to hear, saying /a/ and /t/ individually, and then saying the entire word at. We recommend setting the app on manual move mode so that it pauses between words. Although a selection box pops up on the screen, if you touch the screen it will disappear, and you will be able to see the word. Playing in this mode will allow the student a chance to practice blending the sounds and reading the word themselves. You can model this by saying: “Now I am going to practice reading the word. The letter a makes the /a/ sound, and the letter t makes the /t/ sound. /a/ /t/. When I blend the letters, and say the sounds fast, it makes the word at. Touch each letter in the word as you say the sound, and sweep your finger along the letters when you blend the word.”

Step 3: Guided Practice With the App
Allow students time for guided practice with the app. Here, you check to ensure that students understand not only how to use the app, but also that they understand the literacy content the app is using. For each app, we recommend creating a list of guiding questions that you can use to help students learn the program, as well as to use as a quick check to ensure that students understand how to use the app.

To offer guided practice, move to the next word, which is sat. To guide students on the literacy content, you may ask questions such as “I hear the sound /s/. What letter makes the /s/ sound?” or “The sound we are looking for is /a/. Can you think of any words you already know that start with that sound? What letter does that word start with?” or “Sip is a word we practiced last week that also starts with the /s/ sound. Can you tell me what letter the word sip starts with?”

Check to make sure that students are familiar with how to operate the app. Guiding questions that check for app usability include “How do you choose a letter to make a word?” “What do you push to get to the next word?” and “What do you push when you are all finished playing?”

When we implemented this lesson, although we checked to make sure our students had the appropriate skills necessary in letter identification and letter sounds, we found that our students were successfully able to match the letters to the sounds, but were unable to blend the sounds.
“Because [misconceptions] can arise, the guidance and feedback provided by the teacher are crucial.”

together into a word and were not able to recognize the word when it was displayed after the matching activity. This showed that although they were able to correctly complete the individual skill practice on the app, they were not able to use those skills toward the larger goal of automatically decoding words.

Because hidden misconceptions and difficulties can arise, the guidance and feedback provided by the teacher are crucial. The guided practice section of the framework also offers an opportunity to offer differentiated instruction to the students based on their specific errors and misconceptions. In this particular case, we suggest that teachers intervene to provide feedback and guidance on blending sounds with larger word parts, such as onset rime, if students are having difficulty blending words using individual phonemes.

**Step 4: Independent Practice With the App**

Once students have a solid understanding of both how to use the app and the literacy content in it, students are ready to use the app for independent practice. We recommend using the app during independent work time or literacy center work. Here, we also recommend extending the learning with non-iPad activities, as many apps are limited in their number of practice items. In this lesson, students can be encouraged to write the words they worked with in their word study notebook or word bank and brainstorm other words that begin with the letters s or t. Likewise, you could choose to focus on the medial short vowel and have students brainstorm words that rhyme with the word *sat*.

For students who have access to a tablet or smartphone at home, teachers can communicate with parents about the apps used at school to extend learning to home. For the phonics app, students may rework through the initial sequence of words (*at*, *sat*, *pat*, *sap*, *it*, *its*, *sit*, *sip*) several times or progress through the entire sequence of words. This app allows the teacher or parent to choose all letter sounds or lock the app on one group of letters and sounds. Students may also use the other function of the app, letter formation practice, during this time.

One kindergarten student greatly enjoyed the independent use of the iPad and was very focused during practice time. However, we noticed that the child would race through the app, clicking to get the correct answer, not paying attention to decoding and reading the words. In the case of students who are technologically able, but not literacy able, we suggest returning to the framework and repeating the modeling and guided practice portions of the lesson.

**Conclusion**

There are a variety of apps out there dedicated to practicing early literacy skills. Table 2 provides recommended apps in the early literacy skills of letter identification, phonics, and comprehension. Although we are excited

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<tr>
<th>Early literacy skill</th>
<th>App</th>
<th>App description</th>
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<tr>
<td>Letter identification</td>
<td>iWrite Words</td>
<td>Trace upper- and lowercase letters and simple three-letter words.</td>
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<tr>
<td></td>
<td>Little Matchups ABC</td>
<td>Match lowercase to uppercase letters.</td>
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<tr>
<td>Phonics</td>
<td>Little Matchups ABC</td>
<td>Match letters to letter sounds. Match letters to pictures that start with that sound.</td>
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<td></td>
<td>Abc Pocket Phonics</td>
<td>Identify letters based on sound to create words.</td>
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<td></td>
<td>Word Connex</td>
<td>Sort words according to common meanings, spelling patterns, and phonics features.</td>
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<td></td>
<td>iCard Sort</td>
<td>Blank card-sorting program that can be used to create word sorts.</td>
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<tr>
<td>Sight words</td>
<td>Fry Sight Words</td>
<td>Provides a list of 10 sight words at a time for practice; matching game makes memorization fun. Can be customized for each student.</td>
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<tr>
<td>Comprehension</td>
<td>Toontastic</td>
<td>Use premade sets and characters to create a story with a beginning, middle, and end.</td>
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<tr>
<td></td>
<td>iCardSort</td>
<td>Blank card-sorting program that can be used to sequence events.</td>
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<tr>
<td></td>
<td>Popplet</td>
<td>Create concept maps.</td>
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<tr>
<td></td>
<td>Doodle Buddy</td>
<td>Draw scenes from the story.</td>
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about the use of iPads in classrooms, both as motivational and instructional tools, we strongly recommend that use of technology be coupled with effective instruction to ensure that students are actually learning, not just pushing buttons and going through the motions on the app. We offer several guidelines when using tablets to teach early literacy:

1. Explicitly teach the content before introducing the app—Using apps should not substitute for explicit and systematic instruction of key early literacy skills and should not replace teacher-directed instruction in key concepts. Individual modeling and teacher think-alouds are effective ways to present new literacy concepts. Once the main literacy component has been taught, additional misconceptions and difficulties may arise with the students, and additional instruction and feedback may be necessary.

2. Use the app for guided and independent practice—Apps offer a fun and motivational way for students to practice key early literacy concepts. They can be used during center time or independent seat work time and, with many programs, can offer extended practice at home on parents’ smartphones. Apps should be used first with teacher guidance and feedback to ensure that students are correctly using and applying the targeted literacy skill.

3. Check to make sure students understand both how to use the app and the literacy content in the app—Checking for both ensures that students can independently use the technology and that they are able to understand the literacy content with which they are working. Many younger students may be able to correctly work the app and click through the appropriate buttons, but actually have limited understanding of the specific literacy concept.

4. Be aware, and be wary, of the limitations of the app—Many apps we’ve worked with have several good features coupled with several negative

features, significant limitations, and, in some cases, incorrect information or unsound developmental educational practices. Thoroughly familiarize yourself with the app before introducing it to the students so you can identify which features you would like to use that directly support the concepts you’re teaching and which features to skip because they do not support your classroom instruction. Directly teach and model how to use the features of the app that enhance your non–tablet-based, high-quality instruction.

Tablets and apps, when used effectively and in the context of high-quality literacy instruction, can offer additional ways for students to practice early literacy concepts. However, in the absence of a solid teaching framework, we worry that at best, apps will waste precious classroom time, and at worst, students will learn incorrect information and develop misconceptions. We recommend using the gradual release of responsibility framework (Duke & Pearson, 2002; Pearson & Gallagher, 1983), in which the teacher explains, models, guides, and allows for independent practice, to integrate apps into your classroom practice and to ensure that students are working at a developmentally appropriate level.
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