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iLit: Using iPads for Multi-sensory Literacy Development Intervention

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By midnight of the first day of the iPad's release on April 3, 2010, Apple sold 300,000 of the new device, and by the end of the first week, more than 500,000 were delivered (Waters 1). And after 80 days, three million had been sold (The iPad—Breaking New Ground). As educators we wondered how this device could contribute to instruction. Would it be more than just a web-surfing device? What would we be able to do on it that we can't do on the laptops and netbooks we just bought? How would these devices fit in? An administrator of New York City's Department of Education explained then that "the iPad fills a gap rather than replaces particular classes of devices" (Waters 1). Flash forward to 2012. The iPad 3 was released on Friday, March 16. On Monday, March 19 Apple announced the sales figures for the first weekend: 3 million sold, not including any pre-orders (Lowensohn). In between the launch of the first iPad and the third generation iPad, curiosity in what the iPad could do for instruction continued to increase. The term "21st Century Learning" was now ubiquitous, and many educators realized that with globalization comes acceleration, and acceleration "requires shifts in theories, teaching, training, methodology, pedagogy, curriculum, indeed, even shifts in an understanding of what learning is" (Carroll and Wilson xxx). Those dedicated to making this shift were early adopters of the iPad, and more have joined them by now. But the technology is still relatively new and large scale studies are few.

Though the iPad is a new tool, we can still learn from older studies regarding technology integration. A 2009 study of two computer programs for early reading difficulties found the most growth when "instruction provided by the teachers was integrated very closely with their experiences on the computer" (Torgeson et al. 54). This reminds us that we cannot expect the iPad to teach – the teacher

still must teach the concepts and skills. The iPad's purpose is for practicing, reinforcing, reviewing, and creating.

The mobility of the iPad is one of its more highly touted features. Before tablet computers like the iPad, the cell phone was the most portable technology available and had advanced to include web access and many available apps. A 2009 study entitled "Pockets of Potential: Using Mobile Technologies to Promote Children's Learning" published by The Joan Ganz Cooney Center found that there was potential for cell phone technology to impact instruction, but there were many barriers – including schools not allowing phones. In 2010 the Cooney Center followed up with another study on the use of two early literacy apps on the iPod touch (the precursor of the iPad) and found promise for vocabulary learning and literacy skills; however, sustaining student interest was a key (Chiong and Shuler 3). Findings indicate that apps that sustained student interest best were "developmentally appropriate" and had "fresh content, shortened wait times, humorous activities, incentives, goals, and parental involvement" (Chiong and Shuler 3). By 2012, many more apps—both for the iPhone, iPod touch, and iPad—have been developed. In 2007 Shuler did a study of the available education apps, and in 2012 she updated this study. She found that over 80% of the top selling apps in the Education category of the iTunes Store are targeted to children, and the number of apps targeted preschool or elementary aged children grew by 72% between 2009 and 2011 (iLearn 3).

Apple is one of the few companies actively marketing their device to the K-16 education market, especially now with the growth of education apps available. After attending an Apple sponsored day-long workshop on how the iPad could be used for instruction, I was excited to try this out with students. The multi-media and interactivity of the iPad was what sold me. I suspected this technology – the iPads and engaging apps—fit with what we have learned in brain research. Carroll and Wilson explain that "each brain appears to have its own pace" (232). Many of the apps are adaptive, meaning they become

more challenging as students succeed at tasks or they review concepts if students are not exhibiting success on tasks. These apps provide some built-in differentiation. Also, the game-like aspect of many apps and the interactivity (using your fingers to manipulate the screen) would seem to create an emotional experience. It is simply fun to use. From research we know that when one connects with emotion, this assists with long term memory – “emotion energizes those memories” and “novelty and curiosity enhance memory” (Carroll and Wilson 230). Lastly, the iPad appeared to be a way to create an enriched environment which “quite literally feeds the brain” (Carroll and Wilson 232.) All of these connections made me want to integrate the iPads with our students with the greatest need for accelerated learning—those not reading on grade level at McKillop Elementary School.

When considering how to get iPads in students’ hands, I had to consider funding. I wanted the iPads “now” but had not budgeted for them. Luckily I found the Dollar General Community grant. Working with our elementary reading specialist, we wrote a grant for \$2900.00 to purchase five iPads, cases, and a handful of apps. I submitted the grant in May of 2011, and we were notified in August 2011 that we had been awarded \$2000.00. We were able to purchase four iPads and utilize some campus funds to purchase apps and covers. The iPads were ready for use by November 2011.

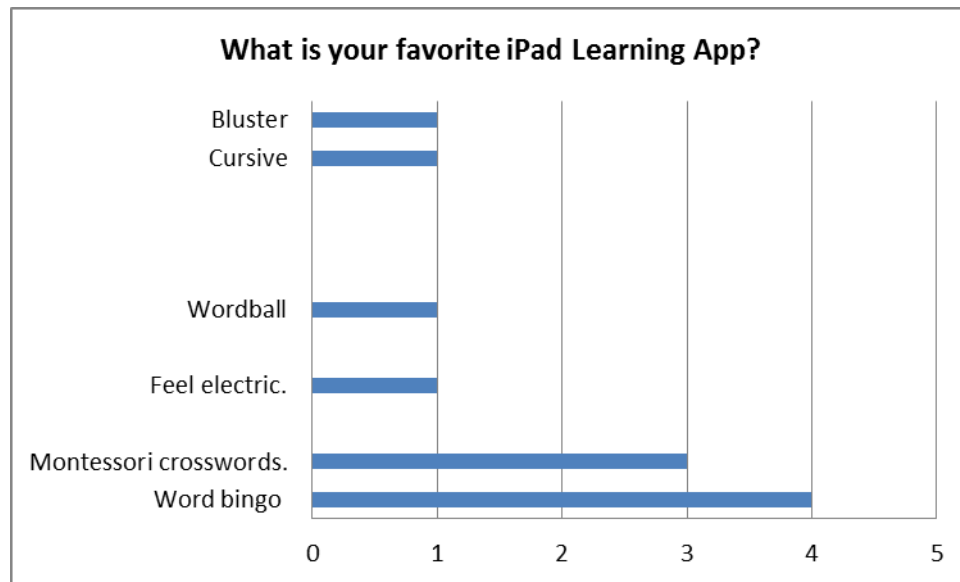
Pam Bazis, the campus reading specialist and certified language therapist, began integrating the iPads into instruction with students in the dyslexia program. She utilizes the Take Flight program of instruction, meeting students every day for an hour, and found ways to seamlessly integrate the iPad. Her 2nd and 3rd graders have used the iPads on a regular basis for five months. Additionally she has student groups for handwriting intervention meeting three times a week for 30 minutes each time and a group for spelling intervention meeting once a week for 30 minutes. The iPad was used with these groups also but less regularly.

As noted in some of the articles and studies consulted, there is no easy way to tell the quality of an app. In her studies, Shuler encourages the collaboration of those in the app industry, policymakers, and educators to “create standards for products marketed as educational” (iLearn 4). We found “trial and error” method was needed for evaluating the effectiveness of apps. Fortunately, there are many free or “lite” versions of apps that give an opportunity to try it out. Also, some reputable organizations provide recommendations, for example Reading Rockets (www.readingrockets.org) has published lists of top spelling and comprehension apps, and the Texas Computer Education Association has lists “free, must-have apps” (www.TCEA.org). But these recommendations may not appear on the information in the app store. In choosing the apps to try out, we relied on recommendations from another language therapist who had been using the iPad with her private tutoring students. We were able to find at least one app to meet the needs of each aspect of our intervention. The table below lists our most frequently used apps and describes their use.

Skill	App & Features
Phonemic Awareness (spoken letter sound correspondence)	<ol style="list-style-type: none"> 1. Montessori Crosswords, \$2.99 -- Specific phoneme selection 2. ABC Spelling Magic (1, 2, & 3), FREE-- moveable alphabet
Phonics	<ol style="list-style-type: none"> 1. Phonics Made Easy, \$4.99 -- PK/K; for review with older students 2. ABC Spelling Magic Letter -- sound on click 3. Camera, built in-- Videotape teacher going through sound decks then replay for review
Fluency	<ol style="list-style-type: none"> 1. Word Bingo, \$.99-- site words/instant words 2. Camera – video self reading
Vocabulary & Spelling	<ol style="list-style-type: none"> 1. Word Bingo-Spelling Practice -- Designated grade levels PK-5; spelling practice good for dysgraphia 2. Montessori Crosswords -- Can target a specific sound 3. Electric Company—Feeling Electric, FREE -- Vocab words to describe emotions 4. Bluster, FREE -- Game; upper grades like 5. ABC Spelling Magic -- good for review
Handwriting & Written	<ol style="list-style-type: none"> 1. Glow Coloring & Drawing, FREE -- slatelike; colorful; choice 2. iWriteWords, Lite is FREE, pro is \$2.99-- printing practice 3. English Cursive Handwriting Practice, FREE – upper, lower, words,

Expression	sentences 4. Penultimate, FREE -- Journal; paper & color choices
Comprehension	1. TumbleBooks (campus subscription, but check public libraries) -- Audiobook w/ tracking 2. Skitch, FREE -- Take photo of book page and annotate 3. iBrainstorm, FREE -- Sticky notes 4. Learning Ally (\$20 app complements website subscription from TEA) -- Audio books use with paper copy

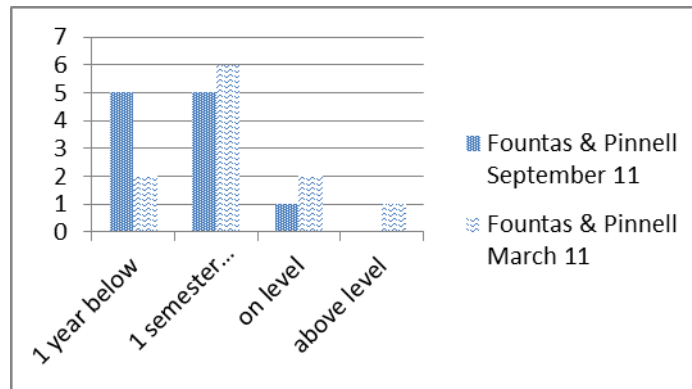
The students definitely had their favorite apps, as noted in the survey results below, WordBingo was very popular. In this app, students tap on the spoken word and earn “bingo bugs” to play with at the end of the activity. This fits with Chiong’s and Shuler’s research that apps with incentives and goals sustain attention (3).



In an effort to see if the iPad interventions were making an impact on learning, we looked at data that would most likely give a true picture of students’ abilities. We focused on the eleven 2nd and 3rd graders who were receiving the intervention regularly for five months. We looked at their Fountas and Pinnell reading inventories, the progress monitoring checks from the Take Flight program, and a spelling test from the Take Flight program. Additionally, we collected qualitative data through a student

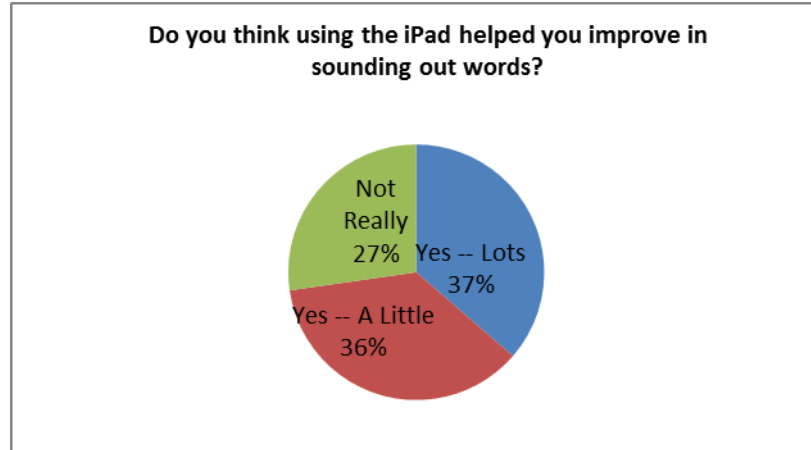
survey. The Fountas and Pinnell was administered three times in the five months of iPad use – first in September/October, again in December/January, and finally in March. The progress monitoring was done in December, January, February, and March. The spelling test was a pre-test administered to students who were entering the program for the first time in May of 2011. The second year students were administered the pre-test in December of 2011. The spelling post-test for both was given in March of 2012. We realized that there are many variables that might impact performance –some of these students use Read Naturally, some also are part of handwriting intervention group, and some have regular time on iStation. Therefore, we were only looking for any correlations of iPad use and data.

Nine of the eleven students had Fountas and Pinnell data for the previous school year, while two students were new to the school in the 2011-2012 school year. The chart below shows a comparison of the students’ Fountas and Pinnell levels in September of 2011 and March 2012 – five months of instruction. We can see that students are gaining ground toward reading on level.

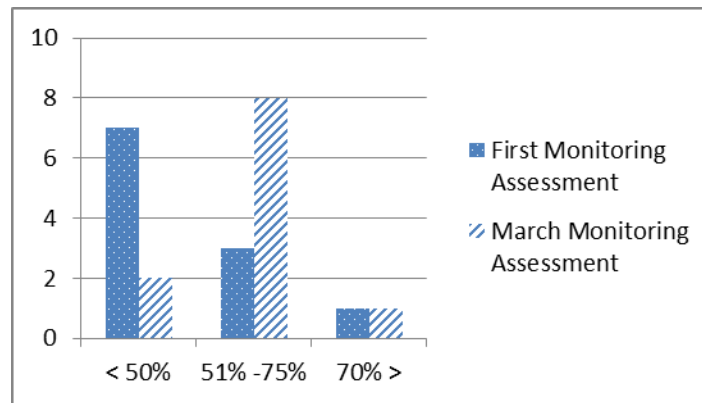


The Fountas and Pinnell assessment also calculates words per minute, and we found a 50% increase in the average words per minute. Students also perceived that they had improved in sounding out words .

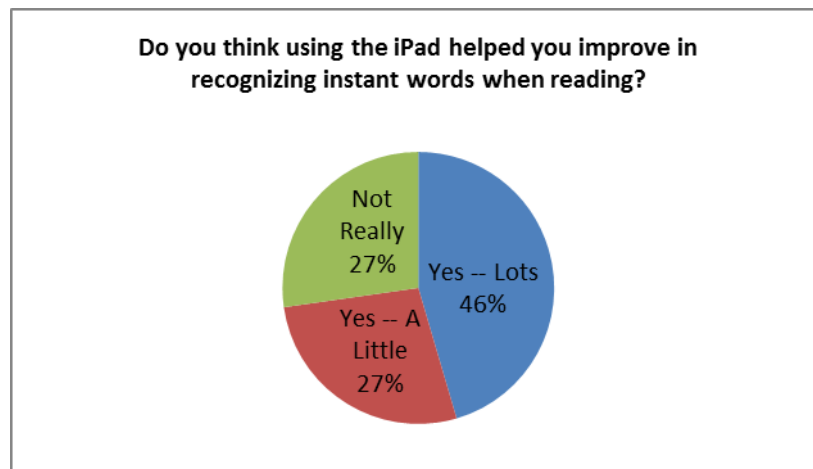
Avg. WPM May 2011	Avg. WPM March 2012
41	62



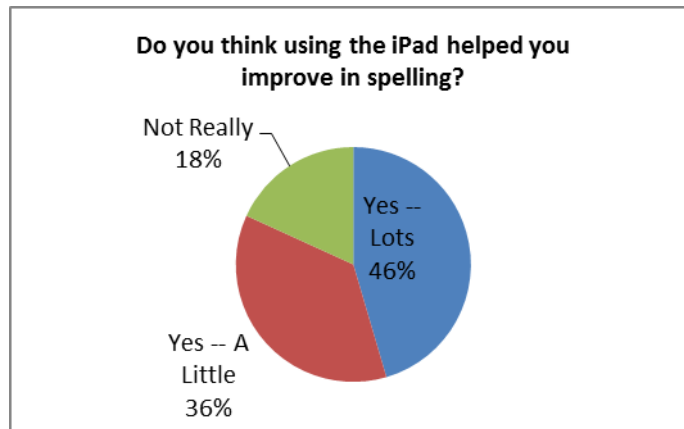
Additionally we found students making progress on their word recognition skills, which is a foundation area of the dyslexia intervention. The chart below illustrates this growth.



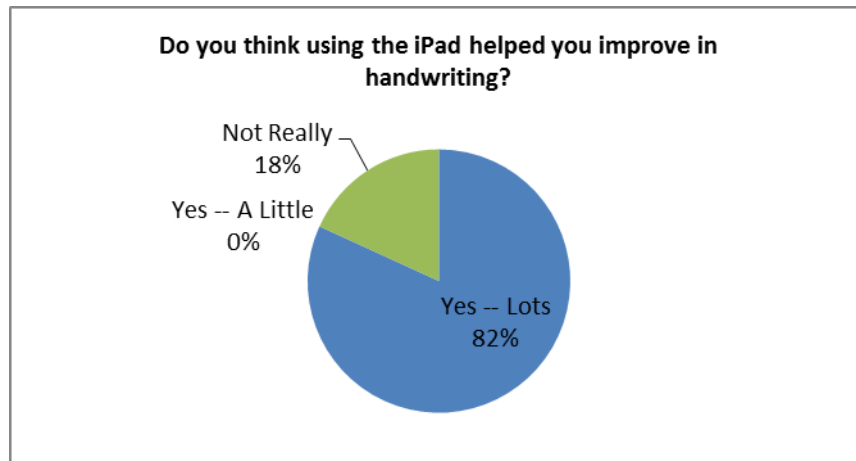
And students perceived that the iPad use had helped them recognize instant words when reading.



In the area of spelling, we used a pre-test and post-test to assess growth. Students were given the same words in each test. The pre-test was administered in May of 2011 for the five students who were in the dyslexia program the previous year, while the newcomers to the program were assessed in December. Students demonstrated an average increase of eight more words spelled correctly on the post-test. In the survey, the majority of students felt they the iPad apps helped them spell better.



We did not administer a handwriting assessment to every student. Three of the eleven students in the Take Flight Dyslexia program also received intervention for dysgraphia and did have an initial handwriting assessment. All of the students did practice forming letters using iPad apps. Second graders practiced print letters with the iWriteWords app, while 3rd graders were beginning to practice cursive letters in March using the Cursive Handwriting Practice App. They also practiced forming letters using GlowDrawing as well as when writing in the Penultimate journal app. In the survey, over 80% of students perceived the iPad use had helped their handwriting:



We had some technical concerns in that the teacher and students had not used an iPad before. A few students had experience with the iPhone and iPod Touch. Just as one study in the *Journal of Research in Technology Education* found that “though most children experienced multiple occurrences of technical incidents, the vast majority showed little to no frustration” (Couse and Chen 89), we too noticed that students just figured out how they worked and didn’t get upset with any technical problem. In response to the question “What was the worst thing about using the iPad?” one student responded that “it does trick you,” and another wrote that “it is sometimes slow,” while eight students responded “none” or “nothing.” One student’s worst thing was, “I can’t take it home!”

We found the students highly motivated to use the iPads. The first question upon entering the room became, “Are we using the iPads today?” Couse and Chen’s study found students were highly motivated to use the iPads – 25 of the 39 students in the study reported they “preferred to use the tablet rather than traditional writing materials” (90). Our students’ responses to the question “What was the best thing about learning with the iPad?” indicate they enjoyed using the iPad and found the apps engaging:

What was the best thing about learning with the iPad?

Reading

It helps me with my work and it is fun to:)

Learning

The best thing that I learn lots of things.

Games that help me learn.

Handwriting

Playing games to learn

The technology is fun and epic and help me learn

Cuc it is funner then normal

Cursive

I brainstorm

As we reflect on the first five months of using the iPads for literacy intervention, we are seeing promise. One of the advantages we are seeing over traditional computers and software is the apps can be selected for targeted instruction. We have found specific apps for each area of literacy. And the iPads allow for better documentation. Students' journals, videos, or drawings can be emailed straight from the iPad, so parents, regular ed teachers, and administrators can see the progress. We are also finding the iPads allow the teacher to do more one-on-one intervention. She was able to do the progress monitoring assessments because she could have students practicing on the iPads while she administered the assessment. She wasn't able to do progress monitoring last year. Also, students are getting more practice. In Take Flight, students go through decks of sound cards – the teacher flashes the card and the students chorally respond with letters and sounds. Normally they would go through the deck once and then move on to the next part of the lesson. But with the iPads, they are able to video the session and go through the "card deck" multiple times while the teacher works one-on-one with a student. When one student said she wished she could practice her sounds over spring break, Mrs. Bazis emailed the video to her mother so that she could download it to their iPod touch, and the student practiced during the car trip for vacation!

I definitely see great potential with the iPads, especially for acceleration. The technology allows for more efficiency, better documentation, and more engagement. Many of these iPad apps are becoming available on other tablet devices, so schools will begin to see more options in various price ranges. And some schools are purchasing the software which students then load on their own devices. The 2010 Speak Up survey by Project Tomorrow found “62 percent of parents would purchase a mobile device for their child if their school incorporated them for educational purposes” (Eisele-Dyrli 46). Therefore, I encourage teachers and school administrators to keep this technology in their sites, try it out with a small group if possible, and investigate how it can make an impact on accelerated learning.

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