When the iPad launched in May 2010, it was reported to be one of the most popular electronic devices (Anderson, 2011; Murray & Olcese, 2011). Much of its popularity might be attributed to ‘comfortable size and weight touch screen, Wi-Fi data connection and a plethora of applications that are easily downloaded’ (McClanahan, Williams, & Tate, 2012, p. 20). The iPad’s popularity has even extended into the classroom where schools at all levels are rapidly purchasing Apple’s new device for student use (Dobler, 2012). While some researchers have recently suggested that the iPad and other similar devices can be used for the future of one-to-one educational delivery (Allen, 2011; Ferriter, 2010). Since the published research on the use of the iPad is still emerging, little is known about the advantages of its use by struggling readers. The purpose of this case study was to investigate the effectiveness of the iPad in helping struggling preschool readers (equivalent to kindergartners in the United State) to improve alphabet recognition and letter sound correspondence skills.

Two preschoolers who had been diagnosed as struggling readers and diagnosed as Attention Deficit Hyperactivity Disorder (ADHD), volunteered to participate in tutoring sessions over the course of the semester. The researchers worked with each student individually on a weekly basis using the iPad’s software applications, such as the ABC Matching game, Alphabet Learn, Alphabet Tracing, and ABC go go, etc. The study used Basic Reading Inventory (Johns, 2008) as an informal assessment for both pre-test and post-tests. Observational notes and interviews were also completed. The results of the pre-test showed that both students could correctly identify 10 uppercase and lower case alphabetical letters and four letter sounds. By the end of the semester, both students were able to recognise the 26 letters and 24 letter sounds. However, they were still confused about soft and hard ‘C’ sounds. We have listed four strategies that worked effectively with the two students which teachers could implement these strategies in a daily routine.

Applications Connect with the Classroom

Strategy 1: Matching Letter Game

Both students had been taught 26 alphabet letters and letter sounds during the first semester of the academic year. The matching game is the first step we used to teach upper and lower case alphabetic letters to the students. When the students touched an uppercase letter, the app said the letter, and the student dragged his/her finger to the lowercase letter on the screen. Only three upper case letters and three lower case letters appeared on the screen for each matching game. When the student dragged his/her finger, a line appeared to both the upper and lower case letter identified correctly. In contrast, the line simply disappeared when the student did not choose the correct match. Occasionally, we would ask the student if he/she could tell us another word that started with the same letter. For example, if the letter was C and the student chose candy, we would ask the student if he/she knew another word that started with a C. We also used flash cards to assess letter identification and reinforce the students’ letter and sound associations.
**Strategy 2: ABC go go**

*ABC go go* is full of creative sounds and environmental print and pictures to reinforce the students’ letter recognition and letter sound. When the student touched the screen, a letter card flipped and showed a picture of an item that began with that letter. The app then said what the item was and a sound followed, which helped the student distinguish letter names and letter sounds. For example, when the letter Gg was displayed, a picture was displayed. ‘G is for grapes.’ We find this app is effective in reinforcing letter names, especially for students who had not fully developed the connections between alphabet letters and sounds. The students could use this app independently, with a partner or with a tutor for higher level scaffolding. The students can repeat reading the electronic texts over and over with the speech of animated characters until they can recognise the letters and then are able to use the letters to develop letter sounds. We also created a non-threatening and low-anxiety learning atmosphere. For example, to assure that the students could handle use the iPad individually, we encouraged students to hold the iPad instead of our holding it for them and told the students, ‘Do not afraid of breaking the iPad.’ We also often told the students, ‘Good Job.’ ‘You can do it;’ ‘It is Ok to make an error.’ By doing so, students were able to freely explore the app and explore letters and sounds and they gained more confidence about their capabilities.

**Strategy 3: Alphabet Learn**

This fun colourful learning app features a musical introduction and easy to see graphics. The app shows three letters at a time with a representative picture, then a sentence using the letter. For example, as three letters are displayed, the app will say: Bb, the blue bird sits on the bay window, Bb /b/. The student can choose the letter described. When the correct item is selected a green check appears and says, ‘Good job!’ Along the bottom of the screen are 2 hands, which display a finger for each correct answer the student completes. We found this app helped both students develop phonemic awareness and some sight words. The application not only provided a great letter recognition tool, but also helped the students make connections between letters and the name of the pictures. It is also a wonderful tool to help English language learners develop alphabetical skills.

**Strategy 4: Alphabet Tracing**

Writing is also a fundamental skill to help young readers recognise alphabetical letters. Alphabet Tracing is an effective app to teach students how to form the letters. The app has many animated characters to teach students how to write each letter. The students can choose from a train, worm, or truck with a variety of colours and textures which
show them how to trace upper and lower case letters step by step. The app also provides pictures and labels of real life objects that start with the letter being traced. Students could also choose a dot to dot writing activity. For this activity, a letter appears on the screen and the app says the letter name. Then a dotted line appears and models how to write the letter. The student can follow the dotted line and write the letter. After the letter is correctly written, the app will again say the letter name. The student can erase letters with his/her fingers when the writing is completely finished. Unlike the paper-based alphabetic trace, our students could write, hear, read, and say the letters at the same time.

Conclusions
We noticed that the two students’ attention span was longer while interacting with the iPad. The students gradually developed confidence and were able to identify the alphabetic letters, and to distinguish the differences between letters and sounds by hearing, seeing, playing, and writing letters and words in meaningful ways. We also assisted the students mastering other literacy practices, such as sight word identification, phoneme segmentation, and phonics blending by using the iPad.

The use of the iPads helped the struggling readers to learn independently and encouraged the development of positive attitudes such as, ‘I can do it’. We also discovered the development of technology skills supported young children’s early literacy development through natural movements and use of fingers to tap, swipe, drag, pinch, and stretch icons or texts. iPads not only serve as a teaching tool to facilitate instruction and learning, but also have motivating power. The iPad offers versatility with great potential for teachers who identify and make use of multiple applications in the classroom.

References

SuHua Huang is an assistant professor at Midwestern State University, Texas, USA, where she teaches Reading Assessment. Email at suhua.huang@mwsu.edu

Nicole Clark is a fourth grade reading teacher at Shive Elementary in Vernon, Texas, USA.

Whitney Wedel is currently a senior student at Midwestern State University, Texas, USA.

Whitney Wedel, SuHua Huang, Nicole Clark