Using iPad Apps to Enhance Literacy Skills of English Language Learners with Special Needs

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Abstract

21st-century technology does not serve as a tool but becomes part of our lives. Building a digital bridge connecting people around the world, technology has ushered in a new era of special education without limit of time and space. Undoubtedly, digital-era teaching also takes special education into a new stage which enables ELLs with special needs to have expected learning outcomes through innovative instructional designs, the application of technology, and learning-based resources. Targeting specific learning needs, this article therefore aims to reveal useful iPad apps shown on plenty of websites for teachers to effectively integrate into instructional design that helps special-needs students get motivated within the network of technology.Reviewing relevant research and websites, this article gives educators access to information concerningusing iPad apps for teaching special-needs students. Specifically, special education teachers would gain information on how to incorporateiPad apps into their daily teaching practice and curriculum design.

Keywords: ELLs with special needs, special-needs children, iPad apps, literacy skills

1. Introduction

Amendments to the Individuals with Disabilities Education Act stated that technology for special-needs students is the equipment used to "increase, maintain, or improve functional capabilities of individuals with disabilities" ("Federal Definitions," 2010). Rather, technologies can benefit students with a disability, effectively helping those students learn successfully.

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Still, technological innovations enable special-needs students to success in the regular classroom (Hasselbring, 2000). Technology in the classroom, clearly, has taken the traditional pedagogy into a digital stage in which teachers work with digital learners with special needs.

In addition to positive effects that technology brings to special education, based on Krashen's (1985a, 1985b, 1994) input hypothesis, language acquisition can take place when the amount of one-way comprehensible input is received. More precisely, language acquisition can be reached at a higher level through the additional assistance derived from sufficient and instrumental comprehensible input.

Specifically, with the help of network via the Internet, students with disabilities are able to learn beyond the classroom, further promoting their competitiveness during academic years (Hasselbring, 2000). It is obvious that a teacher ofEnglish language learners (ELLs) with special needs can provide those students with comprehensible input through effective technology for literacy enrichment.

Not surprisingly, teaching with the aid of technology is viewed as a new pedagogy for getting special-needs students involved in on-line interaction with teachers in the classroom. Needless to say, the iPad captivates students with special needs by its colorful pictures, audio, and video on the large multi-touch screen in which they joyfully experience visual and auditory perception (Farnsworth & Malburg, 2012). Through iPad apps, special learners with disabilities or learning difficulties are able to enrich literacy skills for sure.

Applying Krashen's (1985b) input hypothesis as the theoretical framework, this article is therefore intended to unfold teaching ELLs with special needs through iPad apps forstimulating their learning interests and enhancing their literacy skills through the exploration of the following question of inquiry: What are some relevant iPad apps that special education teachers might use in order to enhance special-needs English language learners' literacy skills?

2. A Brief Theoretical Overview

In fact, a brief review of Krashen's (1989) research stressed that more comprehensible input is associated with greater vocabulary acquisition and the major source for developing vocabulary and spelling competency is derived from comprehensible input. In other words, more opportunities for vocabulary acquisition occur when a learner is exposed to a learning environment in which provides as much comprehensible input as possible.

Through iPad apps, the learning games facilitate ELLs with special needs to acquire more vocabulary in a way that is comprehensible and reflective for them to develop a definition and a picture for a given word or concept. Clearly, iPad apps further enhance their literacy skills in the areas of vocabulary enrichment and reading comprehension.

In addition, more written comprehensible input leads to more language acquisition (Krashen, 1989). Engaging the development of handwriting skills through iPad apps turns ELLs with special needs into real world of writers. The learning games in apps thus serve as an essential bridge that spans the written comprehensible input and reading acquisition. Also, input hypothesis with the i+1 perspective suggests that a learner continues to make great progress in second language learning when comprehensible input is beyond the current language ability (Krashen, 1985a, 1985b). Apparently, further comprehensible input is achieved by the apps that tap into a progressive way to build language learning in the processes of learning and reading a word, hearing its pronunciation, seeing its image, and playing online games with it.

Likewise, some researchers evidenced that in the concordance program the key information in the context "allows i+1 input to be comprehended and incorporated into the developing languages" (Jung, 2003, p. 4). Therefore, instead of being a traditional teacher who adopts single or limited tasks, teaches via using textbooks, tends to be linear, logical, independent, and individual when teaching, we, as 21st century teachers, can design a more innovative and interactive teaching strategy through technology to enhance special-needs students' literacy skills.

Indeed, applying digital technologies into instructional designs and settings has changed the way children learn (Prensky, 2010). Specifically, iPad apps are able to guide the special education to the next stage in which children with special needs learn happily while playing the games.

The aforementioned statements present the tenets of Krashen's (1985b) input hypothesis and the justification of its applicability in the pedagogy with a basis that iPad apps can be designed to create innovative, interactive, and reflective learning setting and conditions for ELLs with special needs. Rather, the above brief theoretical discussion is imperative in order for readers to understand the answer of the inquiry question addressed in this article. The next section will discuss the answer of the inquiry question.

3. Discussion

As suggested in the introduction, the inquiry question guiding this article was: "What are some relevant iPad apps that special education teachers might use in order to enhance special-needs English language learners' literacy skills?"

An extensive review of several Internet-based iPad apps done by the authors pinpointed the existence of the following ipad apps that might effectively enhance special-needs ELLs' literacy skills. These apps include "Injini child development game suite" ("iTunes Preview," 2012), "ArtikPix" ("ArtikPix by," 2012), "In my dreams" ("In My," 2010), and "Write for school" ("Write for," 2012). The following section briefly presents each iPad app and its targeted special-needs learners, applicability, and effectiveness for developing literacy skills.

3.1 Injini Child Development Game Suite ("iTunes Preview," 2012)

This app was designed by Project Injini and published by NCsoft Corp. in 2010 ("iTunes Preview," 2012). It targets special-needs children with "autism, cerebral palsy, down syndrome," and developmental delays, such as cognition, language, and fine motor (Genna, 2012). It consists of 9 feature games, 8 mini games, and over 100 illustrations (Genna, 2012; "Injini Description," 2011). These play-based learning games help young children with special needs reach milestones of language development.

The collection of Injini games promotes special-needs children's skills regarding "fine motor, cause-and-effect understanding, spatial awareness, memory, differentiation, response inhibition, visual processing, sequencing," and so on ("Injini Description," 2011).

Puzzle game, for instance, includes 9 levels, engaging children in an innovative experience filled with fun and enjoyment as they move pieces to fill the missing parts of a picture, such as a picture of "fan." It helps young children with special needs not only develop fine motor skills but also understand spatial concepts ("Injini Description," 2011). In particular, children are able to learn vocabulary by verbal analogies integrated into the puzzle games ("Injini Description," 2011). Therefore, the literacy development in the area of vocabulary enhancement is assured positively in this app. However, teachers or parents have to guide children about how to play the games whenever they are playing seeing that some games' designs might be more complicate for young children with developmental delays. This is the only shortcoming that needs to be noticed.

3.2 ArtikPix ("iTunes Preview," 2012)

This app was designed by Eric Sailers and published by Expressive Solutions LLC in 2012. It targets children with speech and sound delays ("App Friday," 2010). It includes 21 decks of flashcards with various English sounds and three-level matching games. In addition to the vocabulary matching games, this app offers an access for voice recording. The features of this app are "autoplay and tap-to-play," "recording and playing voice," as well as "saving and copying data" ("App Friday," 2010).

In the part of flashcards, for example, students flick on the deck card with "th" sound, learning different words with the same sound, such as "*th*anks" and "*th*anksgiving"("App Friday," 2010). After practicing how to pronounce each word correctly, students record their own voice while repeating each word three times. After recording, they immediately get the speech score showing the results on each voice recording. Then, they can save the data from voice recording, and copy the data to the email. In the part of matching games, students can choose words in the data storage, and match all the cards one per time, and later get the results of speech score.

With the portable and easy-to-use advantages, the ArtikPix app engages special-needs children in the processes of developing language ability, particularly improving their articulation (George, 2012). Applying it to language arts class, teachers are able to track students' progress in an effort to improve their skills in articulation and vocabulary development. In addition, the accuracy of English pronunciation can be assessed through audio recording function. Beyond the traditional drills in articulation practices, the ArtikPix app has children with speech and sound delays "play" sounds through fun matching games ("App Friday," 2010). The design of each game is informative and constructive in general; however, it will take more time for beginners to learn about the setting.

3.3 In My Dreams ("In My," 2010)

This app, designed by DevelopEase LLC in 2010, is a great tool for teaching reading and sign language ("In My," 2010). It is created for the developmental needs of children with learning disabilities. Specifically, it helps hearing impaired children learn sentences by showing the sign language. Students, for instance, firstly learn the sentence structure as in the sentence "I slide down a rainbow" through the illustration of animation ("In My," 2010). Next, students' ability in word recognition is reinforced by matching the voice with the written word "rainbow" ("In My," 2010). Students in turn practice the articulation pattern while listening to the repetition of sentences and words. Simultaneously, sign language is taught as well.

Simply put, learning via this app, ELLs with special needs make great progress in sentence structure, phonological awareness, and vocabulary development ("In My," 2010). Rather, this app serves as a useful instructional design for teachers being that its multifunction in special education instruction allows students to obtain the knowledge in a way that makes learning become interesting and diversified. This app, indeed, motivates students for learning by the animation, pictures, and voice, further increasing their academic outcomes in language learning. Through animation and repetition, by and large, the app promotes literacy skills in the area of reading ("In My," 2010).

3.4 Write for School ("Write for," 2012)

The WriteForSchool app was designed by Little Caradams Pty Ltd in 2012. Targeting children with autism and other learning disabilities ("Write for," 2012), this app aims to help special-needs children develop handwriting skills. Through this app's customizable handwriting instruction and auditory cues on each letter, children are able to learn correct handwriting and improve their voice accent. In particular, this app provides various letter fonts (writing styles) presently used in school districts all over the world.

Also, its design in hand writing is personalized for both right-handed and left-handed children. Additionally, the design of this app allows children to use the stylus pen while practicing the handwriting, which benefits children's development of the fine motor skills ("Write for," 2012).

How to use this app is to begin with personal settings. Children, for instance, first select "America" as their school district for learning the correct font and voice accent. Next, right-handed writing is selected ("Write for," 2012). After the app setting is personalized, here comes the page of handwriting instruction, including hand writing on letters, vowels, letter blends, capitals, and numbers. Flicking on the letter "d," for example, children start learning and practicing how to write lower and upper case letter "Dd," and simultaneously listening to the sound while touching the picture with the vocabulary "dog" bearing the letter "d"("Write for," 2012). Undoubtedly, the handwriting and articulation skills are promoted at the same time.

Considering the effectiveness for ELLs with special needs, the WriteForSchool app gives teachers the access to innovative handwriting instruction in which students' interests for learning are motivated, and their learning outcomes are confirmed positively ("Write for," 2012). Likewise, international and customizable features provide students with a variety of choice in learning handwriting without borders across the world. In addition to handwriting skills, students' readiness for school from an early age is promoted ("Write for," 2012). In a word, the literacy skills in handwriting can be reached at a higher level through this app.

4. Conclusions and Recommendations

This article was intended to uncover teaching ELLs with special needs through iPad apps forstimulating their learning interests and enhancing their literacy skills. To achieve the above scholastic objective, this article presented a brief theoretical overview for answering the inquiry question: What are some relevant iPad apps that special education teachers might use in order to enhance special-needs ELLs' literacy skills? Therefore, an overall review of learning-based instruction via iPad technology assured the effectiveness of iPad apps for ELLs with special needs.

Based on the purpose and inquiry question of this article, four iPad apps were introduced in this article. First, "Injini child development game suite" app ("iTunes Preview," 2012), designed by Project Injini and published by NCsoft Company in 2010, enhances the vocabulary enrichment. Second, the app "ArtikPix" ("ArtikPix by," 2012), designed by Eric Sailers and published by Expressive Solutions LLC in 2012, improves children's skills in articulation and vocabulary development. Third, the app "In my dreams" ("In My," 2010), by DevelopEase LLC in 2010, promotes reading skills. Fourth, the app "WriteForSchool" ("Write for," 2012), by Little Caradams Pty Ltd in 2012, helps children's handwriting skills reach at a higher level.

As would be expected, enhancing special-needs ELLs' literacy abilities would be accomplished via the technology. Today's special-needs students "are increasingly able to interact with classroom technologies" (O'Connell, Freed, & Rothberg, 2010, p. 4). Therefore, the iPad apps integrated with the learning games will be a great helper to develop special-needs children's literacy skills with focuses on areas of vocabulary, articulation, reading, and handwriting. Clearly, students' involvement with iPad apps has a great impact on learning no matter inside or outside the classroom.

Considering the positive effects iPad apps bring to special education, the authors recommend teachers to use them as alternative pedagogy designs for promoting special-needs children's engagement in learning. Still, the authors encourage schools to provide teachers with iPad technology for creating a setting where students' learning processes are full of fun, thus promoting their academic and developmental outcomes. As a whole, learning and teaching with the aid of iPad apps will take special education to a new stage that benefits both students, teachers, and schools.

5. References

App Friday: Artikpix & Percentally. (2010). In *MOMs with apps online*. Retrieved from http://momswithapps.com/2010/04/10/app-friday-artikpix-percentally/

ArtikPix by Expressive Solutions LLC. (2012). In *Apple Inc online*. Retrieved from https://itunes.apple.com/us/app/artikpix/id383022107?mt=8

Farnsworth, D. G., & Malburg, S. (2012). iPad breaking ground for special learners. In *Bright Hub Education: special education online*. Retrieved from http://www.brighthubeducation.com/special-ed-inclusion-strategies/123140-using-the-ipad-for-learners-with-special-needs/

Federal Definitions of Assistive Technology. (2010). In *The Early Childhood Technical Assistance Center online*. Retrieved from http://ectacenter.org/topics/atech/definitions.asp

Genna. (2012). *The best apps for special needs children*. Retrieved from http://ipadkids.com/the-best-apps-for-special-needs-children/

George, K. (2012). *Improving your child's articulation with the ArtikPix app for parents and speech therapists*. Retrieved from http://www.chicagospeechtherapy.com/improving-your-childs-articulation-with-the-artikpix-app-for-parents-and-speech-therapists/

Hasselbring, T. S., & Glaser, C. H. W. (2000). Use of computer technology to help students with special needs. *Children and Computer Technology, 10*(2), 102-122.

Help your child get the head start they deserve. (2012). In *Write for school online*. Retrieved from http://writeforschool.com/

Injini Description. (2011). In *NCSOFT online*. Retrieved from http://www.injini.net/?page_id=18

In My Dreams by DevelopEase LLC. (2010). In *Apple Inc online*. Retrieved form https://itunes.apple.com/us/app/in-my-dreams/id352177461?mt=8

iTunes Preview: ArtikPix by Expressive Solutions LLC. (2012). In *Apple Inc online*. Retrieved from https://itunes.apple.com/us/app/artikpix/id383022107?mt=8

iTunes Preview: Injini-Child development game suite by NCSOFT. (2012). In *Apple Inc online*. Retrieved from https://itunes.apple.com/us/app/injini-child-development-game/id452962000?mt=8&ign-mpt=uo%3D4

Jung, H. J. (2003). Overview of computer assisted language learning research with second language acquisition perspectives. *The Journal of Teaching English with Technology, 3*(3), 3-15.

Krashen, S. (1985a). *Language acquisition and language education.*San Francisco, CA: Alemany Press.

Krashen, S. (1985b). *The input hypothesis: issues and implications*. New York, NY: Longman.

Krashen, S. (1989). We acquire vocabulary and spelling by reading: additional evidence for the input hypothesis. *The Modern Language Journal, 73*(4), 440-464. doi: 10.1111/j.1540-4781.1989.tb05325.x

Krashen, S. (1994). The input hypothesis and its rivals. In N. Ellis (Ed.),*Implicit and explicit learning of languages*, pp. 45-77. London, UK: Academic Press.

O'Connell, T., Freed, G., & Rothberg, M. (2010). *Using apple technology to support learning for students with sensory and learning disabilities*. Retrieved from http://www.nationaltechcenter.org/index.php/2010/08/05/using-apple-technology-to-support-learning-for-students-with-sensory-and-learning-disabilities/

Prensky, M. (2010). *Teaching digital natives, partnering for real learning*. Thousand Oaks, CA: Corwin Press.

Write for school by Little Caradams Pty Ltd. (2012). In *Apple Inc online*. Retrieved from https://itunes.apple.com/au/app/writeforschool/id571423628