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USING IPADS TO ASSIST STUDENTS WITH SPECIAL NEEDS: A PRELIMINARY OVERVIEW

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ABSTRACT

In this document we provide a preliminary overview of how IPads and software applications are being used by K-12 special education teachers, speech pathologists, and school psychologists to aid with teaching, learning, and development of special needs students. Included in this discussion is a specific look at how IPads are used to assist students with speech impediments, autism, reading skills, and math development. Future research work will be conducted.

Keywords

IPad computers, IPad apps, tablet computers, IPods, K-12, special education, instructional technology, educational software, speech language, autism, reading comprehension, math development, web-based software, cloud-based software

INTRODUCTION

K-12 schools have tried to keep an educational pace with society and business for the times they were in. Early in educational curriculum the classrooms specialized in training students for various trades based on gender. Woodworking for boys and sewing for girls were popular courses built into the curriculum and popularized by John Dewey's *progressive education* in the early 20th century. Fast forward to the end of the 20th century and schools were struggling to build into the educational space internet access and provide computer access for students to the World Wide Web. The federal legislature responded with adding the renowned Gore tax which was to provide revenue for school systems to wire buildings and purchase the hardware needed for internet access.

Technology grants allowed school systems to wire schools, buy computers and build infrastructure for access to the World Wide Web and develop software skills in perceived areas necessary for application to the real world. Beginning with core computer skills, students were taught to use word processing, spreadsheets and databases. They were given access to web space, and faculty and students alike were finding their way through the uncharted waters of technology education.

Today, in K-12 education, technology is alive and well in the school systems across the country. It is estimated that since 1997, the federal government has already distributed approximately $73.6 billion in grants, via the1996 FCC *Gore Tax*, to get schools where they are today (CRS report, 2011). Yet we have learned that despite all of the tax dollars spent, technology is always changing and never truly arrives. Computer systems are in virtually every classroom, computer labs are in most schools and various display systems and smart boards are the common blackboard in use today. Students in many ways surpass their teachers in using technology to their advantage. Discussions of e-cheating prevention among faculty have been a recent topic as students learn to shape technology towards their favor. Some schools have adopted web based instructional packages which handle online discussion, email handlers, grading systems and assignment handlers. Teacher's in the classroom go beyond books and lectures to adapt digital information- web based, movie based, digital documentaries and other resources to provide meaningful and interesting materials to the 21st century students.

A more recent technological advent in the classroom is the introduction of the iPad and other tablets for instructional use. Students have long used iPods to entertain themselves with web access, social sites, music, movies and games. Teachers and schools are now also introducing iPad and tablet applications in the classroom. Specifically, specialized instruction which target specific skills has become a new focus in education. Schools have become interested in skills-based instruction after the NCLB legislation and updated IDEA legislation passed.

One group that has been in education's focus has been the student identified with a disability and served in special education. These students, by definition, have some area of lacking academic skill sets. Fortunately, newer applications or "apps" for use on the iPod, iPad or tablet have been developed to help them. In addition, special education students are also increasingly using the IPad to access developmental applications thru the web. This paper provides a brief overview of how iPads are

used to aid with the development of special needs students, both thru the use of downloaded "apps" and by using the tablet to access web or cloud based tools.

SPEECH LANGUAGE APPS

Speech Language Pathologists (SLP's) have been able to use IPad applications in helping students with articulation (speech sound production) difficulties, speech fluency difficulties and language and vocabulary difficulties. These are different forms of communication difficulties and many specific problems have been remediated partially using iPAD software. Various apps have helped these students in areas such as enabling them to hear themselves speak, listen to model speech, play language games and explore language and vocabulary topics using applications and software.

One example used with younger children involves an IPad app called *Larry the Talking Bird*. Larry mimics what he hears and through this interactive format, Larry can show children with either articulation or syntax problems how they may sound to others. It allows the child to hear their own mistakes in a light hearted and entertaining way. It also provides a non-threatening, non-judgmental context in which the child can feel secure to work through their speech-language issues.

APPS FOR AUTISTIC CHILDREN

The iPad at around $500 has apps which have also helped children with Autism that are functioning along a wide severity spectrum communicate. These are children who have not been able to communicate using typical language but instead rely on pictures and symbols linked to specific meanings and word phrases, can now use specially designed apps on the IPad.

For example, this technology has overnight replaced a very costly picture- to-speech apparatus called the *DynoVox*. The *DynoVox* had cost school systems as much as $10,000 per unit and were dedicated devices to one student. However, now similar apps run on the iPad for under $200. Apps such as *Proloquo2Go* use similar principles of linking pictures to spoken language and allow those without a voice to have one at a huge cost savings to the schools and to parents of children with Autism who have struggled under the weight of costly devices in the past (Herbert, 2010) . Recent studies have also shown some improvement in communication and social skills using iPod and iPad apps (Flores et al., 2012; van der Meer et al., 2011).

READING SKILLS APPS

Many of these new applications combine interesting game-like features with educational skills-based activities. Children identified with academic weaknesses and severe academic deficits have been able to use specific programs to help their particular weaknesses. Children with variety of reading difficulties now have access to software that is tailored to their specific type of reading weakness. These programs can include phonemic awareness issues and difficulties with identifying and blending sounds. Phonemic awareness is the basic building block for learning to read. *HeadSprout* is an IPad app that is used to specifically target K-2nd grade students using phonemic awareness.

Another type of reading skills software tool may provide guided reading practice to help a student who reads haltingly or labored. *STEEP* is a cloud-based example of this type of application, and is used to help these students to become more fluent readers. A third type of reader may have comprehension weaknesses and understanding the key ideas and primary information in the passage context, and could be assisted by the use of an IPad such as *SuperReader*.

MATH DEVELOPMENT APPS

Many special needs students struggle to master the basic facts or concepts in math areas. Again, software can now be used to help this struggling learner using adaptive software to focus on the weaker skills sets, and bypass those skills which he or she has already mastered. One such cloud-based program being used is called *iPASS*, and is accessed by students using an IPad or other tablet technology. This software is a skills-based program containing math concepts from 1st grade through 8th grade. *iPASS* has adaptive technology which allows the program to bypass material the student has shown him or herself to be proficient at and to teach, model, and review materials they may be struggling with.

CONCLUSION

It would seem that education is attempting to make the best use of the available technology used by society to aid in remediation of a student's academic weaknesses and to help them become more proficient learners. In this paper we have provided a preliminary examination of how the use of IPads and tablets can be used to assist with the development of children with special needs. While by no means comprehensive, it does provide an introduction to some of the types of applications that is available to these students.

The adoption of this technology in the schools it would appear has shown some benefit to these struggling students, however, this technology, like the text book or mimeograph of old, is still but a tool that is used by teachers and guides within the

classrooms across school in the country. It holds promise and also still needs to have more research conducted to help measure and refine the instructional efficacy and the optimal conditions in which to use it in the classroom. The authors of this paper will conduct further research in this area and present the results in future work.

REFERENCES

1. Flores*, M., Musgrove, K, Renner, S., Hinton, V., Strozier, S., Franklin, S., Hil, D. (2012, June). A Comparison of Communication using the Apple iPad and a Picture-Based System. *Augmentative and Alternative Communication*, V.28 N.2 , 74-84.
2. Herbert, M. (November, 2010). The iPad—Breaking New Ground in Special Education. Accessed on January 4, 2013 from http://techworkshops.pottsgrove.wikispaces.net/file/view/The+iPad%E2%80%94Breaking+New+Ground+in+Special+Education.pdf/248317743/The%20iPad%E2%80%94Breaking%20New%20Ground%20in%20Special%20Education.pdf
3. Van der Meer, L, Kaghora, D., Achmadi, D., Green, VB., Herrington, C., Sigafoos, J., O'Rielly, M., Lancioni, G., Lang, R, Rispoli, M. (2011). Teaching functional use of iPod-based speech-generating device to individuals with developmental disabilities. *Journal of Special Education Technology*, V26, N3, 1-12.
4. *STEEP* – Accessed on January 4, 2013 from http://www.joewitt.org/steep.html.
5. *iPASS* - Accessed on January 4, 2013 from http://www.ilearn.com/web/pdf/iLearn%20iPass%20PR%20Release.pdf
6. Congressional Research Service - Universal Service Fund: Background and Options for Reform - April 11, 2011 - RL33979. *Open CRS: Congressional Research Service Reports for the People*. Accessed on January 4, 2013 at https://opencrs.com/document/RL33979/