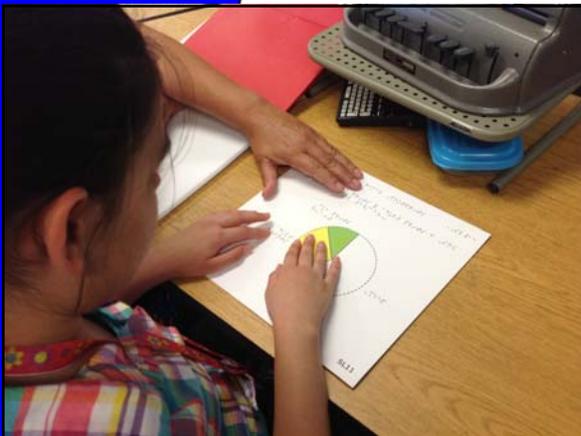


## AnimalWatch Vi Suite Project: Supporting Students with Visual Impairments in STEM

L. Penny Rosenblum, Ph.D.

University of Arizona

Did you know that a polar bear can smell a seal up to 1 mile away or that a panda cub at birth weighs about the same amount as your iPhone? Until I became the director of the *AnimalWatch Vi Suite* project ([www.awvis.org](http://www.awvis.org)) which is a 3-year research grant awarded to the University of Arizona's Dr. Jane Erin and Dr. Carole Beal, I had no idea.



Our project is funded by the U.S. Department of Education's Institute of Education Sciences and began in Spring 2012. After two surveys of the field, our research team took the leap and decided to develop an iPad app that employs principles of universal design. The content focuses on endangered species such as the black rhino, cheetah, and sea turtle.

When using the app and the accompanying graphics (large print and braille) students doing math at the 5th to 9th grade level solve word problems and build their pre-algebra readiness skills. Research tells us that if students are not successful in developing their pre-algebra competence they are very unlikely to go into the STEM fields.

Developing an app and the graphics that accompany it has been the focus of the first year of our project. We had content from prior work of Dr.

Beal's but decided we needed new and improved content that includes material presented in maps, charts, tables, bar graphs, etc. We wanted to know what features youth would like to have in an app that would help their learning. To gather this information, we conducted usability testing with over 30 youth in Arizona. The youth assisted us in determining a layout for our answer pad, selecting the background and font color for our help videos, designing a scratch pad to do computation on, and so much more. When it gave us feedback on line choices, textures, position of labels, etc. They told us that having a 3D model of an animal coupled with the graphic was valuable.

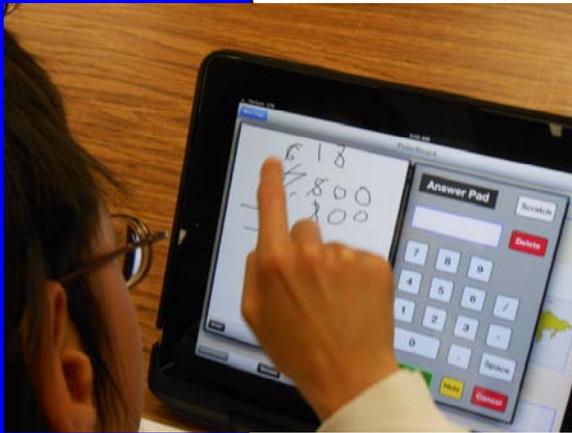


Our usability testers thought our descriptions of images of animals added to the content and they appreciated the clear descriptions of the content of the graphics.

As we conducted our usability testing we found that many Arizona teachers didn't know the power of the iPad for youth with visual impairment. So, to help them build their skills so they in turn could teach their students, we brought Ed Summers and Diane Brauner of North Carolina to Arizona for a two day hands-on workshop. After the workshop, Bonnie Steinberg, a TVI for Scottsdale Unified, shared " It's no wonder I have been so ambivalent about the iPad... in my ignorance it was like I was trying to bake a cake with only half the ingredients." Brauner and Summers demonstrated to all in attendance the power of the iPad for our students through their interactive, hands-on and patient presentation style.

Later this fall the 20 teachers, who are part of the project's feasibility study, will meet virtually with Brauner and Summers three times and then all

will come back together in Phoenix on January 10 where the teachers will learn more advanced skills and receive the *AnimalWatch Vi Suite* app and booklets of accompanying graphics for their students to use. The 30 students will then each complete six math units during Spring 2014. The re



search team will examine how they used the scaffolding we provide to solve the problems, how they locate information in the graphics, and the role of audio coupled with print or braille in helping students access information.

Plans are already underway for 2014-2015 when we will conduct a national study to demonstrate the promise of the intervention. Keep an eye out for future announcements in the *DVIQ* and on listservs and in other publications. To keep up with what the *AnimalWatch Vi Suite* project team is doing, come to our session at the November AZAER conference, visit our web site at [www.awvis.org](http://www.awvis.org), and/or like us on Facebook.

