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**Eric Jerman on Accessible iPad Apps**

By MIKE DEL ROSSO

If you visit Apple.com and navigate to the section on iPad apps, you'll land on a page that says "Over 140,000 apps for iPad;" its smaller cousin, the iPhone, hosts over 500,000 of these applications for "work, play and everything in between."

It's in this "everything in between" that Eric Jerman has found uses, which app developers had probably never dreamed of when designing their dime-a-dozen mobile programs.

Jerman, who received his master's in education for orientation and mobility from UMass Boston in August 2011, has already begun brainstorming ways to utilize the iPad effectively on the job.

"I might use the iPad app *Pictello* for a student on an O&M lesson," Jerman said, easing into the scenario. "Alright today we're going to walk off campus and cross North Beacon Street.' So I could go through the sequence of events. Through the photographs of the crosswalk, I can ask 'What do you do first?' We can review the whole lesson before we actually begin."

*Pictello*, a mobile picture-and-text storytelling program, demonstrates perhaps one of the highest functionalities (*communication*) under Jerman's hierarchy of apps. His research, however, began on a much more basic level.

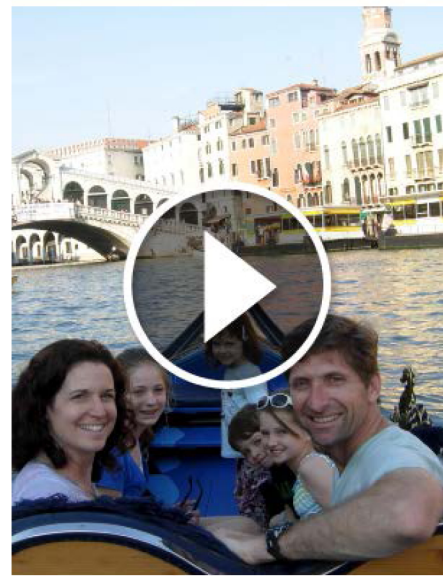
Jerman's son Jake, 3½, has cortical visual impairment (CVI). He was born with a metabolic disorder—Jerman and his wife were carriers of the gene. It impacts all of Jake's body at the cellular level, leaving it uncertain whether Jake will properly walk or talk. And he is legally blind, with 20/270 vision.

"My son can't see five feet beyond him," he said. "So I bring the world to him using the iPad."

It became a matter of holding the iPad within Jake's sphere of seeing it, Jerman said. The iPad, a high-contrast displaying, touch-sensitive and handheld device, can set in any position or distance from the user. Jerman tried many combinations until his son finally started reaching and grabbing for it one day, when Jerman played an interactive *Dr. Seuss* story.



**Italian Vacation**  
By Leslie Ragsdale



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Tell a story through the picture and slide show app *Pictello*.

"Now he wants to hold it so badly; he actually tries these commando crawls to get it," he said. "It's a motivator to get him to try." The iPad helps Jake, who has low vision and low muscle tone, overcome the tendency to sit still.

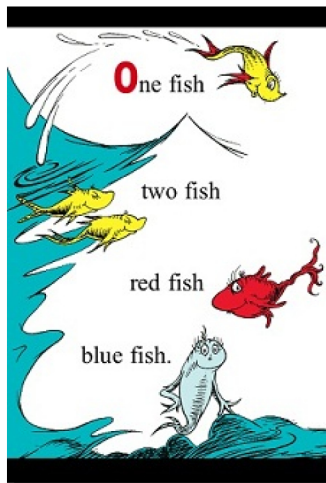
Once Jerman knew he could engage his son by the iPad, the hunt was on for apps that could further Jake's development. Though, the process took time, he said.

"It'd be great if one app did everything, but it doesn't really work that way," he said. "You have to pick and choose. Each app has its place."

To this date, Jerman has gathered over 200 iPad apps. Each offers its own degree of difficulty along a spectrum of skill promotion, which Jerman organizes into four categories:

1. Cause and Effect
2. Digital Books or Interactive Stories
3. Music
4. Communication

Numbering in this sequential order is appropriate for the way Jerman presents apps in his seminar "Appolutely Engaging & Educational." More advanced categories, like "Communication," build upon the skills kids learn in the rudimentary realms of, say, "Cause and Effect."

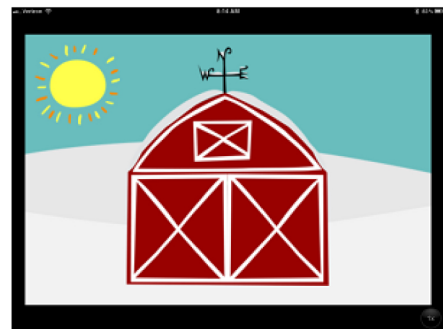


An iPad version of the popular Dr. Seuss book *One Fish, Two Fish, Red Fish, Blue Fish*.

Engaging & Educational." More advanced categories, like "Communication," build upon the skills kids learn in the rudimentary realms of, say, "Cause and Effect."

He often begins his presentation with the app *Peekaboo Barn* that demonstrates cause-and-effect in its simplest form—touch the big red barn on the screen and you'll see the lamb; touch or say something and something else happens.

"Certain colors stand out for CVI. Red, yellow, high contrast things," he said. "From a CVI standpoint, you can't get much better than *Peekaboo Barn*. You have this big red barn with white trim (high contrast) and it's bouncing—it has movement to it—while you hear a thump-thump sound. It's begging the user to touch it."



The high-contrast red on white in *Peekaboo Barn* is great for kids with CVI.

Jerman uses apps like this one and a slightly more advanced cause-and-effect application called *Peek-a-bouncer* to get his son to interact with the iPad.

"Even in the progression of using these first two apps, you start to see it's building up a vocabulary for the child to learn how to interact with the iPad," he said. "Those are useful skills that will come in handy for more complicated apps involving communication. The first app, *Peekaboo Barn*, you just touch it and something happens. With *Peek-a-bouncer*, I have to touch and hold my finger on the screen. Not a big difference, but it is a difference. Cognitively, it takes a little bit of a step for the kid to realize that the funny hippo remains on the screen as long as he keeps his finger on there."



*Peek-a-bouncer*: (above) Hold your finger on the screen to see the bear (below) remove your finger to make the bear go away

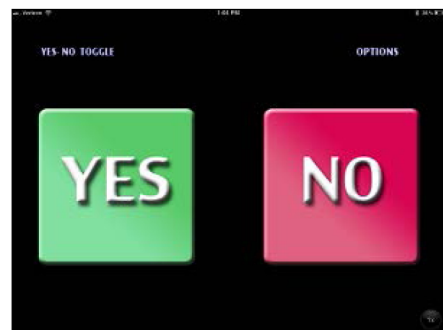
On the more sophisticated end of the cause-and-effect spectrum, lay *Baby Play Pad*. Here, the child sees an active nature scene, with many moving and interactive parts—a bright yellow sun, birds flying across the screen and red apples falling from trees. The parent can learn things about the way their child sees. The app tests a vision concept called *tracking* that answers the question "Is my son watching the birds fly across the screen or is he following the sound?" Jerman said. And in the case of kids with CVI, parents can tell them to locate the high-contrast yellow Sun or bright red apples.

The second category, digital books, takes the concept of cause-and-effect one step further by now applying instruction. One story, written by *Pocket Story*, tells the young reader to tickle the tiger or else he will eat the mouse, on his journey through the jungle. The child must not only touch the iPad; he must swipe back and forth in a "tickle" motion to thwart the angry tiger. In this way, the child and the iPad are building a dialogue.

Music, as the third category, acts as a bridge between the lower apps and higher communication apps. Music was one of the first ways Jerman and his wife reached Jake, he said.

Many of the apps in this category mimic actual musical instruments, like keys of a xylophone that sound the corresponding tone when touched. So, in addition to cause and effect, the child's interaction with the iPad is building toward meaning.

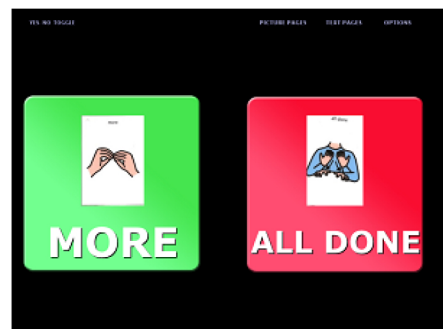
In Jerman's fourth category, perhaps the simplest communication app is *Yes/No*, he said. Yet, through the customization that the iPad avails, this program can enter into higher and higher complexity. When asked a question, the child can select 'yes' or 'no' on the screen. The device then says "Yes," or "No," based on their selection.



A simple communication app that asks the child to answer 'Yes' or 'No.'

"This becomes a simple way to communicate with your kids," he said. "That was a big breakthrough for us."

The parent or teacher can record their own voice and upload their own pictures as options. "I'm hot" and "I'm cold," for example, with the corresponding pictures. Jerman incorporated Mayor-Johnson symbols, by scanning them into the iPad and onto the customized picture functionality. What began as "yes/no" now covers a highly more complex array of conditions.



Incorporating Mayor-Johnson symbols into the *Yes/No* app vastly expands the complexity and capabilities of this communication tool.

"This starts to become more advanced," he said. "The child can make that mental leap into 'Not only do I touch this and it does something, but it has meaning to it. I can convey a message to my parents.'"

Some of the more advanced communication apps can cost close to \$200, but when considering the alternative, the iPad actually still comes out as the more sensible option.

"Apps tend to be, by and large, \$3 and less, but the communication ones can be anywhere from \$10 to \$189, for *Proloquo2Go*," Jerman said. "Those more expensive apps, however, are taking the place of the *DynaVox*, a dedicated communication device using Mayor-Johnson symbols, running as high as \$7,000."

Jerman will be featured as a regular contributor to *WonderBaby's* section on accessible iPad apps. His first contribution *reviews Peekaboo Barn*.

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