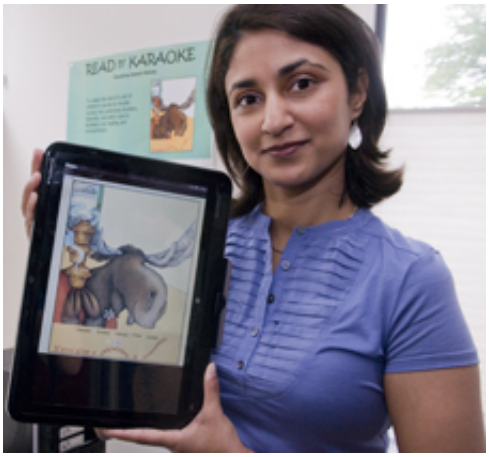
For child readers, 'once more with feeling'

June 24 2010



Associate professor Rupal Patel is developing computer software to help youths read with more expression. Photo by Lauren McFalls.

(PhysOrg.com) -- Rupal Patel, an associate professor of speech-language pathology and audiology at Northeastern, is developing innovative reading software that helps youngsters learn to read aloud with more expression in their voices via a novel interactive computer program.

Her research in speech disorders led to a discovery that those with speech problems can still control the prosody — the melody or tone — of their voices. As a result, a listener can determine a speaker's intention even if the words are not understandable. For example, if a speaker's voice rises at the end of a sentence, it likely means he or she is asking a question.

Patel, the director of Northeastern's Communication Analysis and Design Laboratory, applied this concept to her software program. Dubbed "Read n' Karaoke, " it incorporates existing children's books and provides visual cues to beginning readers in order to improve oral reading expressiveness. To show changes in pitch, words change in height. To reflect pauses in speech, the spacing between words increases. To cue readers to speak louder, the words grow darker.

"When kids start reading, they sound very monotonous, and they don't have much inflection in their voice," Patel said. "They are learning to control that aspect of voice, and there are no visual signals in the written text to give them an idea of how to say it."

The children's interaction with the program is a critical component, Patel said. Loaded onto a handheld device, it enables children to record themselves reading the text, play those recordings back to themselves, and listen to recordings of an adult reading the sentences with the proper inflection.

A National Science Foundation grant is helping Patel take the project to the next level. The newest version of the software won't alter the actual word text but instead will provide inflection cues in the form of overlaid graphics, which Patel said would make the text more legible.

While the goal is to make children more expressive in their reading by making the words "come alive" on the page, Patel hopes her research will ultimately lead to greater comprehension of the text. She pointed to research that indicates children, even up until the fourth grade, may not understand what they're reading when reading aloud.

"Young children often have a difficult time just engaging in reading out loud and understanding what they read out loud. We want to help them close that gap," Patel said.

Provided by Northeastern University