Supporting **College Access Readers** with

**Text-to-Speech and Spanish Translations**

**Text-to-Speech**

**Text-to-Speech Solution**

As part of the CK-12 / LPS access strategy, we committed to make the College Access Readers available using text-to-speech technology for special education students, English Learners and struggling readers. Our criteria for a text-to-speech solution included the following:

- Ability to highlight words as they were read aloud
- Quality of synthetic speech
- Ease of implementation on multiple computers with multiple platforms (Windows and Mac environment)
- User/Student friendly
- Availability in Spanish and English or Spanish translation
- Free or Volume licensing discounts
- Recognized vendor with established customer base in K-12 Education
- Compatible with Microsoft Office Suite documents, Adobe PDF’s, and Internet Browsing
- Scalability
- Technical Support

Initially we anticipated embedding the translation directly into the College Access Reader flexbooks, however this presented numerous issues in practice. Therefore, using the criteria above, we also explored numerous lightweight software applications and found three that seemed appropriate:

- **Natural Reader**: [http://www.naturalreaders.com/index.htm](http://www.naturalreaders.com/index.htm)

These products were tested by teachers, administrators, and students over a one-month period and Natural Reader was selected as the solution that best met our criteria and our specific technology infrastructure.

**Text-to-Speech in Use**

We have piloted text-to-speech at our four LPS campuses using multiple approaches. The three most effective involved setting up computer stations in the back of the classroom, using the applications on computers in the Special Education Resource Room, and using the applications for the full class in the computer lab. Some of the schools used all of these strategies simultaneously. In the first case, having Natural Reader available on the in-class stations allowed easy, seamless use often for short targeted
periods of time (10-15 minutes). This generally occurred when other students were using the hard-copy version individually or in small groups. Its success rested on a classroom culture comfortable with differentiation and the regular use of computers for multiple purposes, not just for struggling students.

Use of text-to-speech in the Special Education Resource Room allowed for greater individual support in getting students started. In addition, by installing Natural Reader on the Resource computers, students were able to use it to support any assignment or reading that could be converted into a Word document or a PDF.

Finally, the whole-class, computer lab application was effective for classes where the majority of the students were English Learners and/or struggling readers who could profit from text-to-speech. In this instance, the teacher would use the regular online version, without text-to-speech for the confident readers – in essence differentiating up. The downsides of computer lab use were the time and logistical issues of taking the class to the lab for a partial-period activity. However, these could be avoided with one-to-one laptop or computer cart availability.

No matter which approach was taken, initial student training was critical. Students needed to practice using the software: adjusting the speed as well as stopping and re-starting. In particular, since the flexbooks include diagrams, equations, and charts, students had to be able to stop and start to navigate around these. While this navigation was initially frustrating, it actually empowered students, especially special education students, by teaching them how to work through issues and develop facility with an adaptive technology that can serve them through high school, college and beyond.

Spanish Translation

A second avenue for content access for English Learners has been Spanish translations. Initially, we had also envisioned these to be embedded, clickable features. However, we found that the solutions available did not work well in our real-world testing, particularly with the STEM vocabulary in our math and science flexbooks. In response, we began producing actual Spanish versions of the Readers. To do so, we turned to eLance.com and were very successful in finding fast, high-quality, reasonable translators from Latin America who had both excellent English and a background in math and science. These translations are printed out in hard-copy workbook style or used online. They can also be used with Spanish text-to-speech. The Spanish versions of the Readers on the CK-12 website include some of the College Access Reader chapters. The remainder will be translated once the summer content revisions are complete in early August, 2011.

Teachers generally provide the Spanish translations (either electronically or in hard-copy work packets) along with the English versions. Students use these for initial access, sometimes followed by reading the English version. All testing is done in English – with the Spanish support viewed as an on-ramp to the content for recent immigrants. Plans for next year include using the Spanish versions as expository readings for the Spanish for Native Speaker courses, helping students acquire academic literacy in Spanish.