**Universal Design for Learning Pilot Project (UDL-P)**
**Montgomery County Public Schools, Maryland**
**Evaluating the Benefit of Using Read:OutLoud**

## Purpose

The purpose of the UDL-P was to help teachers at a targeted school effectively integrate available accessible technology resources into their instructional program. Four fourth-grade and three fifth-grade classrooms were targeted for this project. In each of those classes, teachers were asked to identify three to four students to track. One of those students was considered "typically performing" and the other two or three students were considered "struggling," meaning they have learning issues that affect their reading and/or writing performance in school. "Struggling" students did not necessarily have an identified disability and may or may not have been identified as "English Language Learners."

One important part of the UDL-P was the examination of technology-based strategies. In other words, what works best for diverse learners? The goal was to measure behaviors that are indicative of reading and writing abilities both with and without the use of assistive technology (AT). Read:OutLoud (Don Johnston) and ClozePro (Crick Software) were used to gather information on reading comprehension with and without AT.

## Procedures for examining the extent to which text readers support reading comprehension

1. Using the traditional approach of reading from paper, the students were asked to read a 100 word passage at his or her instructional reading level. The reading level was determined by the classroom teacher using a variety of available data sources.
2. As a measure of reading comprehension, the student was asked to complete a cloze procedure using ClozePro software on the paragraph just read with every 6$^{th}$ word removed. No speech output was used for the cloze reading comprehension task.
3. Then the student was given an equivalent 100 word passage to read using Read:OutLoud software. This was the student's first exposure to Read:OutLoud. Basic features were demonstrated (read button, change voice settings, and the dictionary).
4. As a measure of reading comprehension for a passage read using assistive technology, the student was asked to complete the cloze procedure using ClozePro software on the equivalent passage just read. Once again, no speech output was used for the cloze reading comprehension task.

## Outcomes informing instructional decisions

The outcomes indicated that text readers are an effective tool for students reading below grade level. Figure 1 shows comprehension scores without SOLO Read:OutLoud compared to scores using Read:OutLoud with text-to-speech support for students who were identified as "struggling readers" by their teachers. For these students, there was a 14% average increase in reading comprehension. Text-to-speech appeared to help students overcome decoding barriers which interfered with reading comprehension. However, there was no appreciable difference for students reading at or above grade level (Figure 2). This finding suggests that text-to-speech features may benefit those who need it most.

Giving students access to digitized text and text-to speech support may help level the playing field for students who can comprehend grade-level academic content, but cannot read grade-level text. Nonetheless, while text readers appear to support comprehension, they are not intended to remediate reading delays. The benefits of writing and study features built into SOLO and other text reader software also need to be examined to determine their usefulness as learning supports for all students.

**Figure 1: Below grade level students' performance with and without the support of Read:OutLoud**

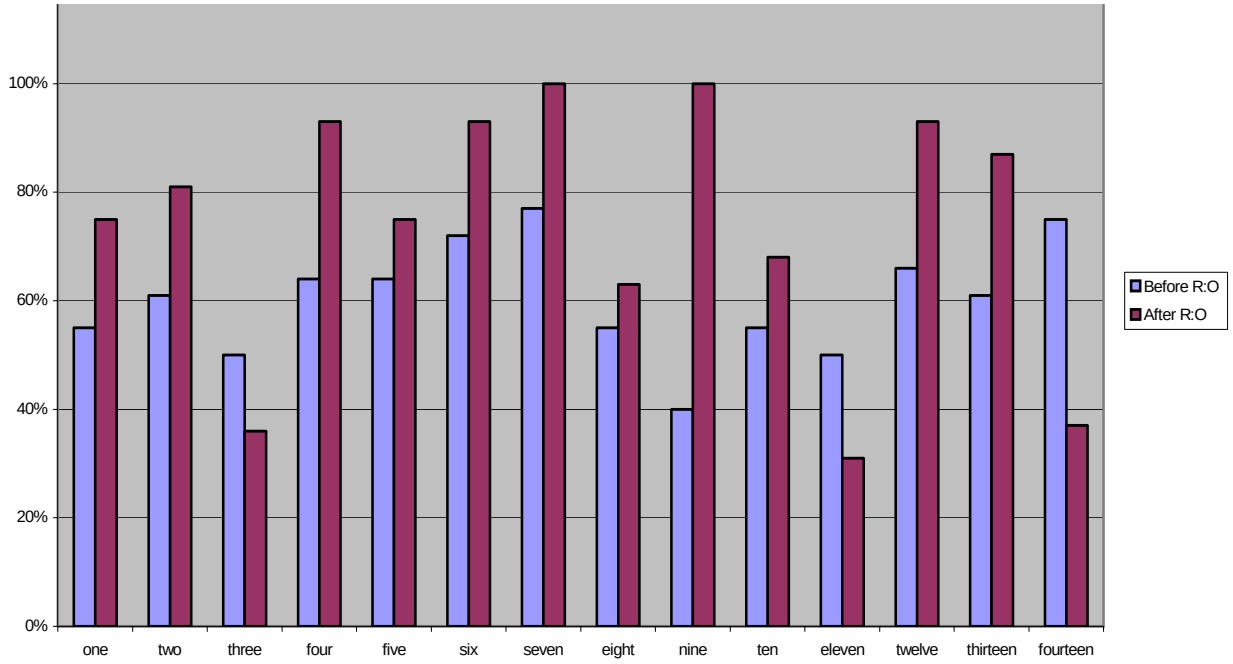


**Figure 2: Comparison of Student Performance for Students below grade level and on grade level**