

# Research Study: Quasi-Experimental Research Study Shows Increased Writing Gains when Technology is Paired with Instruction

Data Released September, 2006



## STUDENT OUTCOMES

*Preliminary data suggests significant increases in students' writing performance when using SOLO paired with the writing strategy instruction.*

### Proven Writing Strategies Paired with Innovative Technologies Increased Student Outcomes 24% for Low and Middle Performers

#### Background

In 2005, the National Center for Technology Innovation (NCTI) issued a grant to examine the effects on student outcomes using validated writing strategies paired with an innovative and universally-designed technology program called SOLO. This quasi-experimental design utilized pre- and post-test groups in nine classrooms serving students in grades 3, 4 and 5.

#### Implementation Model



Karen Erickson, Ph.D., Associate Professor at the University of North Carolina at Chapel Hill developed the design and implementation model. The six-week study compared writing outcomes using writing strategy instruction alone with writing strategy instruction paired with SOLO technology.

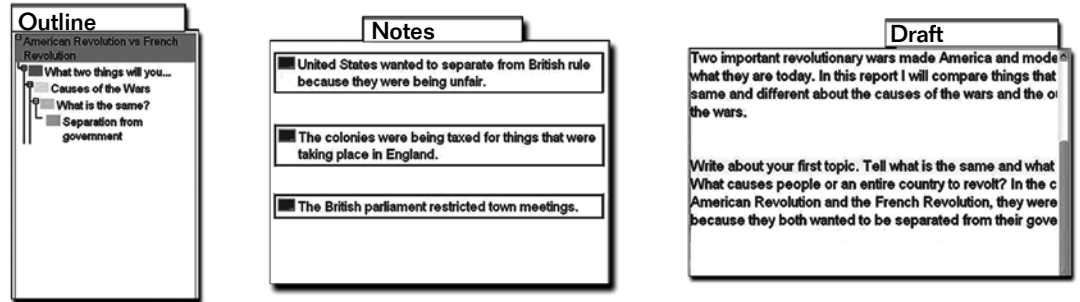
The writing strategies model was based on the self-regulated strategy instruction (SRSI) model developed by Steve Graham, Ed.D. and Karen Harris, Ed.D. from Vanderbilt University. The SRSI model leverages specific teaching strategies for instruction, implementation and rapid ramp-up of writing skill mastery.

SOLO was developed by Don Johnston Incorporated to build reading and writing skills, extend learning practice to boost overall student writing abilities, increase confidence and written expression.

The PLEASE strategy shown in Figure 1 (see following page) is one of the strategies used in the study that integrates the SRSI framework with SOLO. This writing strategy approach teaches students to write in a fluent and automatic way and is especially effective for students with diverse learning styles.

## PLEASE Expository Writing Strategy

Figure 1.



1. **P**ick a topic.
2. **L**ist ideas about the topic: Students add concepts and ideas to the outline, automatically creating a visual map.
3. **E**valuate the list: Rearrange the ideas in the list and add detail by writing short notes.
4. **A**ctivate the paragraph with a topic sentence.
5. **S**upply supporting sentences: Organize notes into the text to support the topic sentence.
6. **E**nd with a concluding sentence.

Three curriculum units were developed to teach students how to use effective writing strategies to address summary, narrative and expository writing techniques. Each curriculum unit was designed for implementation over the course of 18 instructional days using the instructional model illustrated in Figure 2. This model included checkpoints with relevant student feedback and information to guide teachers throughout the writing process.

Figure 2.



Intervention: Narrative and Expository Writing  
45 minutes 2-3 times a week

By the end of each curriculum unit, the goal was to enable students to use the writing strategies to effectively write summaries, stories and expository essays. Any of the three units (summary writing, narrative writing and expository writing) could be implemented to match the curriculum during the intervention period.

The group who received writing strategy instruction paired with SOLO technology used pre-made SOLO assignments and the instructional framework embedded in the technology for independent practice to reinforce and extend the writing strategy instruction. Students used SOLO three times a week for 45 minutes, totaling 18 lessons.

## Results

Data demonstrated in Figure 3 suggests significant increases in writing literacy when using SOLO paired with the writing strategy instruction. The students who performed at or below average on the pretest and received only the self-regulated writing strategy instruction realized a 2% writing performance gain on the contrived subtests of the Test of Written Language (TOWL-3).

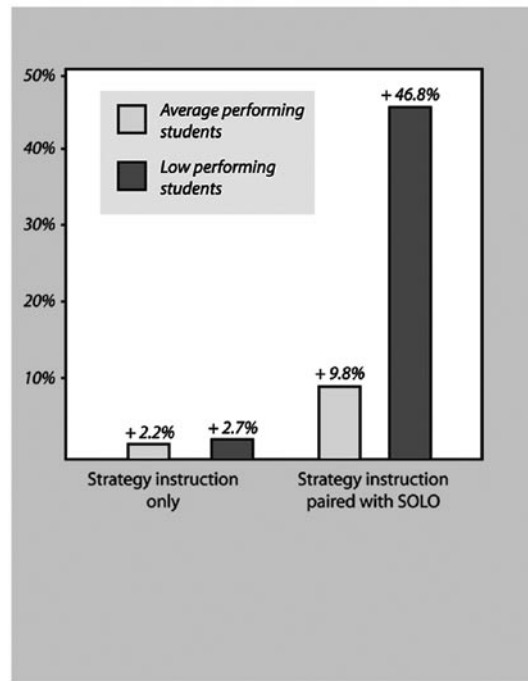
The students who received self-regulated strategy instruction along with SOLO technology, and who performed at or below average on the pre-test, increased performance by over 24%. Average students made a gain of just under 10%, while the students who were 1.5 or more standard deviations below the average at pretest made the largest gain of 46.8%.

“What makes these results even more impressive is that the low-performing students realized significantly larger gains than the average-performing students,” said Dr. Karen Erickson, Associate Professor at the University of North Carolina at Chapel Hill.

## Closing the Achievement Gap

This shows the effects of good strategy instruction paired with SOLO technology. Average-performing students made significant gains of 9.8%, while low-performing students made exponential gains of 46.8%...truly closing the achievement gap!

Figure 3.



“What makes these results even more impressive is that the low-performing students realized significantly larger gains than the average-performing students.”

Dr. Karen Erickson,  
Associate Professor,  
University of North  
Carolina

# Our Vision

## Empower Students with Accessible Technologies that Address Unique Literacy Needs

It's commonplace in schools to see stacks of textbooks, paper notebooks, pencils and pens. These are the "conventional" learning tools in schools, and they are effective for many students. But for students with physical, cognitive or learning differences, these tools pose significant barriers to learning. These students require **specialized accessible technology** and media to maximize their learning. This is where Don Johnston excels. Since 1980 we have been developing and supplying innovative technologies to schools who recognize that each student has unique learning needs and can thrive in the right environment.

**We strive to create the right environment.** This requires the right tools, the right implementation and the right instructional approaches. We are committed to providing you with the most value from product selection to ongoing support and implementation.

Don Johnston empowers educators with specialized accessible technologies and supported reading and writing tools for students with cognitive, physical, and learning differences. Since 1980, the company has partnered with literacy experts, assistive technology specialists, speech language pathologists, psychologists, teachers, researchers, and scientists to develop over a dozen assistive technology products. The company also publishes Start-to-Finish®, a collection of paperback, audio and computer books for students who read below grade level.

