

## CASE STUDY:

### Summary Street Paves the Way for Improved Science Achievement at Chicago's Roberto Clemente High School



#### Situation

As educators know, students struggling with reading suffer across all disciplines, and in all grades. One particularly challenging area is science, where content is increasingly complex and older students may not have the reading skills to keep pace with the curriculum. A multi-university collaboration of researchers is conducting a three-year study on the correlation between reading achievement and science achievement in high schools, and how reading comprehension tools, such as Summary Street®, a Web-based product from Pearson Knowledge Technologies, can improve student performance.

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#### Summary Street in Chicago Public Schools

Funded by the National Science Foundation (NSF), this study is investigating the use of Summary Street at Chicago's Roberto Clemente High School on the city's near west side. Clemente High School, home to approximately 2,700 students of predominantly Puerto Rican and Central American origin, implements the "Small Learning Communities" program, a Chicago Public Schools initiative where students are grouped according to their academic interests. This research is being done with three of the learning communities at the high school.

Primary researchers Louis Gomez, Ph.D., Northwestern University, and Kimberley Gomez, Ph.D., University of Illinois-Chicago, said the study explores how improved reading comprehension affects student ability to develop a deep understanding of the content in environmental science and biology. Ten ninth-grade science classes are using Summary Street. A key element of the work has been the integration of Summary Street into the instructional flow and enactment of an NSF-funded curriculum, "Investigations into Environmental Science." In the next academic year another pilot program will be initiated in tenth-grade biology, integrating Summary Street into another NSF-funded curriculum called "Biology: A Human Approach."

With Summary Street, students use their own words to write summaries of text they have read and receive instant feedback. Summary Street measures student writing by comparing it with the original text, evaluating it based on content knowledge as well as writing mechanics, redundancy and relevancy. In the project described here teachers select texts that come from or are very related to their planned science instruction. Students and teachers receive automated reports showing individual progress. In addition, teachers receive reports that show results for the entire class.

In the initial stages of the study, researchers agree that Summary Street is helping to bolster student's attention to text. They believe that deeper attention to text is an important precursor to higher achievement. Indeed, teachers have commented that it helps students pay more attention to text than they might otherwise. Kristen Perkins, a science teacher at Clemente High School who is using Summary Street

with her students, said it has changed her perspective on how students learn. "It made me more aware of what students get, and don't get, from reading text," she said. "In the past, I really took for granted that students could read a passage and understand the main ideas and meaning. We have spent much more class time this year devoted to helping students to become more effective readers."

Student reaction to Summary Street has been very positive. Following the first-semester exams, many students felt they had performed well, and said learning to digest and summarize content had helped. One student talked about how great it was to be able to type a summary into Summary Street and get feedback right away, giving students the opportunity to make edits cleanly before turning in the assignment.

"It's been interesting to watch students help each other improve their summaries using the program," said Perkins. "We have to share computers a bit, so students were helping to answer each others questions. I have many Hispanic students who struggle with putting ideas in their own words and this helps them quite a bit. They can see exactly where they are repeating the text."

The researchers believe that incorporating Summary Street into these classes is changing how teachers approach lessons. "It helped show the teachers specific ways to use text as part of their science teaching," said Louis Gomez.

"Science teachers have not traditionally thought of the text," noted Kim Gomez. "They think of the content. Summary Street has helped them to recognize not just the content the kids are reading, but how the kids are learning through the text." The program's immediate feedback on summary content signals to teachers whether the class fully comprehended the content, or needed further review.

A critical element to making Summary Street work in the classrooms was the thorough professional development the researchers provided. Experience taught them that teachers are resistant to integrating a new tool without thorough preparation. Nearly one-third of a three-day professional development "supporting science through literacy" workshop was devoted to Summary Street. "As the teachers began to implement Summary Street, we went into the classroom with them to provide teaching support," said Kim Gomez. Ongoing professional development throughout the school year provides a forum to discuss Summary Street and how it supports teachers' instructional strategies.

#### **About the Research Project:**

The study using Summary Street, titled "Understanding the Connection Between Science Achievement and Reading Achievement," is funded by the National Science Foundation as part of its Research on Learning and Education (ROLE) program. Researchers Louis Gomez, Ph.D. (Northwestern University); Kimberley Gomez, Ph.D. (University of Illinois-Chicago); Nichole Pinkard, Ph.D. (University of Chicago); Anthony Bryk, Ph.D. (Stanford University); and Phillip Herman, Ph.D. (Northwestern University), in collaboration with Pearson Knowledge Technologies, are working with teachers to use Summary Street to monitor student comprehension and achievement in ninth-grade science at a Chicago Public high school. NSF's ROLE program funds studies that illuminate how learning takes place.

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#### **Benefits of Summary Street**

- Helps students learn to read and understand text.
- Teachers know quickly if students understand the lessons. Immediate evaluation of summaries signals to teachers if content needs to be re-taught.
- Both students and teachers enjoy using Summary Street, enhancing the classroom experience overall.

## Results

While formal data for the study are not yet available, anecdotal results are encouraging. The researchers are hopeful that this pilot year in 10 classrooms will be expanded to 30 classrooms in high schools across Chicago the next year. Concurrent with the expansion of the ninth-grade curriculum, the pilot program of the tenth-grade biology curriculum will launch in 10 classrooms, with plans to expand the following year.

Most importantly, Summary Street is helping to increase reading comprehension among high school students. "The reason kids have difficulty in science achievement is they don't read enough and are not sufficiently skilled as strategic readers," said L. Gomez. "Summary Street is a very specific way to help learners be attentive to text. In lots of content-area classrooms, teachers don't have strategies to make text part of their instruction. Summary Street helps with that."

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