

Literacy experts design content-specific reading strategies

Reading *Romeo and Juliet* clearly differs from reading a textbook explanation of Ohm's Law. Yet most adolescent reading instruction focuses on general reading skills, with little thought to variations in texts and the purpose of reading in different disciplines.

Now, with funding from the **Carnegie Corporation of New York**, several of the nation's top literacy experts are looking into how specialists in core fields like math, science and history read texts differently — and how that could produce new strategies for adolescent literacy instruction.

Such research can ground new methods of teaching literacy and, ultimately, underpin policies to target the adolescent literacy crisis and get more kids reading comprehensive texts.

Discipline-specific reading

Research by the ACT testing agency has found that high school students are not exposed to enough complex tests, and that states do a poor job of requiring literacy instruction in their high school standards. Addressing that means infusing literacy instruction across core content areas, the study concluded.

But one obstacle, according to **Timothy Shanahan**, professor of urban education at the **University of Illinois at Chicago**, is that university teaching programs' literacy instruction continues to focus on general reading strategies and study skills — even though literacy research indicates that strategies need to be more specific as children mature.

"It doesn't mean there aren't any similarities; you obviously need a basis," Shanahan said. "But you can't read, say, an algebra text in the same way that you read *Anna Karenina*."

Shanahan and his research partner and wife, Cynthia, are using teams of literacy experts, secondary school teachers, teacher educators, mathematicians, historians, and chemists to identify how reading strategies differ based on text type and content area.

One team was given an article from a popular science magazine on pollution control systems that included mathematical estimates. The mathematicians took much longer to complete their reading than other team members because they were looking for errors in the data, not just reading for the general gist of the article.

"They read for error much more than [experts] in other fields," Shanahan said. "There's a level of precision and accuracy that's demanded when it comes to estimations and measurements that others don't deal with."

Similarly, reading a math textbook requires students to reread short, dense passages to

Train the next generation of literacy instructors

The **Carnegie Corporation of New York's** Adolescent Literacy Preservice Initiative is a part of its broader Advancing Literacy program, which funds research on reading pedagogy beyond the traditional K-3 span.

The ALPI's funding is targeted to university researchers to develop new reading strategies for teacher preparation programs. Projects include:

- **University of Connecticut:** Research into online reading and writing practices that use Web technologies for learning and instruction.
- **University of Georgia:** Development of online adolescent literacy courses that help teachers embed literacy into middle school science curricula.
- **University of Michigan:** Designing courses for teachers on how to embed literacy in math and history content areas.

understand equations and estimates, instead of reading for general content ideas.

History texts, however, are argumentative interpretations of facts and primary source documents, so the reader must know how to evaluate an argument and to identify assertions that other historians might disagree with, Shanahan said.

"You have to read with a hypothesis in mind," he said.

The next step

Next year, Shanahan will focus on translating the research results into content-specific reading strategies for teachers. The strategies will be tested using some of the university's preservice teachers. During their student teaching, researchers will collect data to determine which strategies were most successful.

The Carnegie Corporation of New York is funding Shanahan's research as part of its Adolescent Literacy Preservice Initiative.

The initiative requires funded schools of education to work with arts and sciences divisions to create a lasting literacy instruction infrastructure for teachers in all content areas, said **Andrés Henríquez**, program officer for Carnegie's education division.

"It's not enough that we train teachers in literacy. Teachers of mathematics, science and social studies need to recognize when a student's having difficulty with a text, and the kinds of strategies they can use to help those students."

—**Stephen Sawchuk**