

EDUCATION WEEK'S

SPOTLIGHT

On Reading Instruction

Editor's Note: Few topics arouse such strong passion as how best to teach children to read. This "Spotlight" focuses on research on what works in teaching reading and successful tools and tactics already at work in classrooms.

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Experts Eschew Narrow Reading of Early-Literacy Study

By Kathleen Kennedy Manzo
Washington

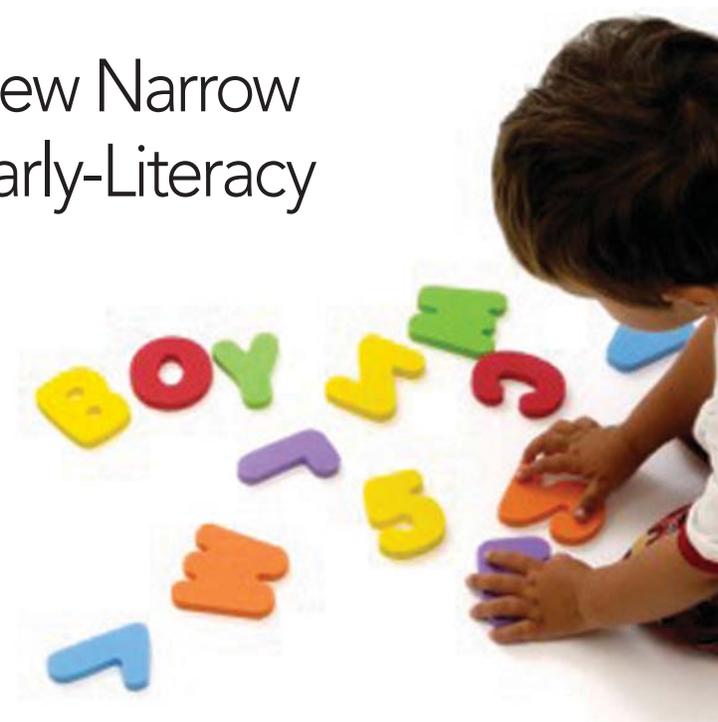
A long-promised review of early-reading research concludes that teaching the alphabet and letter sounds in preschool strengthens children's chances of success in learning to read later on.

But while the report of the National Early Literacy Panel is earning praise for providing a needed tool for improving early-literacy instruction, it is also stirring concerns that skills-driven instruction could become a dominant focus for 3- and 4-year-olds, much as it has for the early-elementary grades.

The review of empirical research, released here this month, is likely to inform policy and practice at a time when advocates of expanded preschool options are pressing for new state and federal policies and funding for such programs.

While most experts agree that basic alphabetic skills are essential for developing literacy, the panel's conclusion that other widely prescribed strategies have less potential for ensuring children's future reading proficiency challenges some long-held principles.

Early-childhood professionals have worked to create learning-



rich environments in which art projects, rudimentary science experiments, and extended conversations aim to build young children's oral language and background knowledge. The impact of those activities on later learning may not have the same level of quantitative evidence, some experts say, but they have strong, and often indirect or delayed influence on how well children understand what they read.

The panel's report "places a very strong emphasis on the narrow range of skills related to decoding, phonemic awareness, and other memory kinds of skills, and places in a second-tier language and conceptual knowledge," said David K. Dickinson, a professor of education at Vanderbilt University in Nashville. Vocabulary, oral

language, and background knowledge, he added, may not demonstrate their value until 3rd or 4th grade when children need to comprehend more complex texts and information across subject areas.

"I'm not at all questioning the importance of those skills outlined in the report," he said. "What concerns me greatly is that the message that might be taken by practitioners is to further narrow [instruction] and focus on the discrete skills."

The panel convened in 2002 to review the research on early literacy and included a survey of thousands of potential studies. In its report, "Developing Early Literacy," the panel identifies the skills it found to be precursors to later reading success, including alphabet knowledge, the under-

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standing of the sounds associated with letters, vocabulary, and the ability to write individual letters and remember information. The most effective instruction for preschool children, therefore, works to build those skills.

"This report is going to require a certain amount of translation for practitioners to be useful," said Timothy Shanahan, the chairman of the panel and a professor of urban education at the University of Illinois at Chicago. He served on the National Reading Panel, which conducted a similar review of K-3 research and whose 2000 report provided the framework for state and federal reading initiatives.

"The word that stands out for me from this report is multiplicity," Mr. Shanahan said. "There is a range of kinds of activities that lead to those skills, including code-based stuff, vocabulary, and oral-language development."

Insufficient Studies

Figuring out the balance of those elements, however, will likely prompt debate in the field. Although the report is based on a meta-analysis that combines the effects found in nearly 500 quantitative studies resulting from the panel's literature search, many areas could not be studied because of a lack of empirical data.

The commonly recommended practice of reading to children, for example, was found to have a moderate effect on children's oral-language development and knowledge of print features. The studies on shared reading were not adequate to judge whether those practices are sufficiently effective in building the foundations for reading proficiency, according to the panel.

The balance of research in favor of code-related interventions—there were far more empirical studies on teaching basic literacy skills, like naming letters, the results of which are easy to quantify—led to stronger findings in that area. Instruction that is "code-related," meaning it builds knowledge of the alphabetic principle, had the greatest impact on children's overall literacy skills, according to the panel's analysis of 83 studies on that topic. That instruction was most effective when conducted with individual children or in small groups.

At a time when many states have been considering expansion of public preschool programs, the findings are intended to inform policymakers and educators seeking to improve early-literacy instruction, panel members said. During his run for

the Oval Office, President Barack Obama proposed a \$10 billion preschool program to better prepare children for kindergarten. The report and the high interest in the topic are likely to fuel discussions on how to infuse formal literacy instruction into programs for young children and how best to prepare educators to do so. But play time and nap time should not be substituted with structured activities that may not be age-appropriate, experts say.

"The report is all about code, because code is what has been studied, but what we know is that code alone is not going to solve our educational problems," said Susan B. Neuman, a prominent early-childhood literacy researcher who served as assistant secretary of elementary and secondary education at the U.S. Department of Education during President George W. Bush's first term.

Ms. Neuman, who was asked to review a number of studies for the panel, said that some sound empirical research was not considered for the review because it did not fit the screening requirements. Many qualitative studies on effective instruction, she added, could help guide the field as well, but were not part of the panel's review.

"My hope is that this report will be taken along with the findings of other reports that show the importance of developmentally appropriate practice to create comprehensive policies that promote early literacy," Ms. Neuman said.

Translating the findings from research studies into practice will mean crafting lessons that teach skills through activities that appeal to 3- and 4-year-olds, said panel member Susan Landry, the director of the Children's Learning Institute in the pediatrics department at the University of Texas Health Science Center at Houston.

"What we always have to keep in mind," she said, "is that we are dealing with very young children, so the instruction needs to be playful and engaging."

Predictors of Reading Achievement

Six moderate to strong skills predict overall literacy development:

- Alphabetic Knowledge: knowledge of names and sounds associated with printed letters
- Phonological Awareness: detecting, manipulating, or analyzing parts of words
- Rapid Automatic Naming of Letters/Digits: naming a sequence of random letters or numbers
- Rapid Automatic Naming of Objects/Colors: naming a sequence of random sets of pictures or objects
- Writing or Writing Name: writing letters in isolation or one's own name
- Phonological Memory: remembering spoken information for a short period of time

Five additional skills are moderate predictors of some aspect of later literacy development:

- Concepts About Print: knowledge of print conventions (read left to write) and concepts (book cover, author)
- Print Knowledge: combination of alphabetic knowledge, concepts about print, and early decoding
- Reading Readiness: combination of alphabetic knowledge, concepts of print, vocabulary, memory, and phonemic awareness
- Oral Language: producing or comprehending spoken language, including vocabulary and grammar
- Visual Processing: matching or discriminating visually presented symbols

SOURCE: National Early Literacy Panel

Published March 4, 2009

Studies Support Benefits of Educational TV for Reading

Evidence backs up what many parents have believed

By Kathleen Kennedy Manzo

Even the harshest critics of the role that television plays in children's lives would have a hard time arguing that Elmo and Big Bird are bad for youngsters. From the earliest days of "Sesame Street" nearly four decades ago, educational television has earned high praise and millions of fans for entertaining and educating young children.

Now, a new generation of programs, and

a rigorous research effort to test its impact, is adding to the "Sesame Street" legacy and working to clarify for parents the potential benefits of television viewing, particularly for literacy development.

While learning experts surely agree that too much television and inappropriate content can have detrimental effects on children, the right kinds of programs can set them on the path toward reading.

"I'm a big supporter of media technology and I do agree that kids spend far too much time with television and other media," said Milton Chen, who in the mid-1990s helped launch the Ready to Learn Service, a partnership between the Public Broadcasting Service, or PBS, and the U.S. Department of Education to create educational program-

ming. "But I come out on the side that specific television programs and experiences can very much support literacy."

Well-designed programs can teach distinct skills such as letter and sound recognition, as well as cultivate a love of reading, said Mr. Chen, the director of the George Lucas Educational Foundation in San Rafael, Calif. As the director of research earlier in his career for the Children's Television Workshop, which has since been renamed Sesame Workshop, Mr. Chen helped to design and test some of the lessons embedded in programs like "Sesame Street" and "The Electric Company."

Gains in Understanding

Literacy has been a dominant theme of public-television programs since the first episodes of "Sesame Street" pioneered the genre in November 1969.

Many parents since then have observed firsthand the effectiveness of those lessons, such as one on "Sesame Street" that featured Y as the letter of the day and was accompanied by Grammy winner Norah Jones singing her song, "Don't Know Why." Or when Synonym Sam, the girl genius character on "Between the Lions," demonstrated the meaning of sets of words like "walk," "strut," and "stride."

There is now growing empirical evidence that such carefully crafted segments deliver an academic punch.

A federally financed study released last month, for example, found that "WordWorld," a program funded under the Ready to Learn initiative, helps preschool children learn oral vocabulary and featured words.

"Between the Lions," hosted by a puppet family of lions who live in the New York City Library, has been studied even more extensively. Studies on the 10-year-old program have linked it to significant gains in students' understanding of how letters combine to make words, as well as of the purpose of the printed word.

The American Academy of Pediatrics has recognized that some television programming has benefits. But the Elk Grove Village, Ill.-based organization urges parents to avoid television viewing altogether for children under age 2, a prime audience for many programs, because it may be detrimental to their brain development.

The academy also points to the potential for television in general to send the wrong messages about violence, drug use, and other negative behaviors, as well as its docu-



Photo courtesy of WGBH

Theo, the father of a lion family, reads a book on the PBS series "Between the Lions."

mented role in promoting sedentary behavior that can lead to childhood obesity.

The Ready to Learn initiative, begun in 1995, set new priorities for children's television several years ago, requiring that new programs receiving public funding home in on early literacy. At least a quarter of federal grant money for the programs must be used for research to drive their design and gauge whether the lessons in the programs affect children's literacy development.

That research is now emerging and providing critical information on the most effective approaches to infusing learning into television programming, according to Deborah L. Linebarger, the director of the Children and Media Lab at the Annenberg School for Communications at the University of Pennsylvania in Philadelphia.

"We know that we can successfully merge learning and appeal to children, but it takes work," said Ms. Linebarger, who is studying the impact of several popular shows on public television, including "Between the Lions" and "Super Why!"

The best programs, she said, create content that reflects research on how children learn and test it out on children prior to putting it on television. While public television tends to dominate the educational market, she said that the cable stations Nickelodeon and the Disney Channel have also found success in promoting children's learning on shows such as "Blues Clues" and "Little Einsteins."

"When they do these things and kids understand them and like them, the shows are really successful," Ms. Linebarger said, adding that the commercial success can often underwrite the costly development process.

'Literacy 360 Approach'

Even as children become more accustomed to different kinds of media, from computer games to interactive Web sites, children's television has held a large and steady audience, experts say. The newer programs, and even those now heading into middle age, are adapting their approach to engage the digital generation. Most of the shows have accompanying Web sites that provide video clips, activities, and related lessons and games.

"Television, particularly for preschoolers and the early grades, is still king," said Mi-

“These characters are engaging, and the keds are drawn into [lessons] by the characters and the stories, so you motivate them to learn. Educational television is so powerful and the research is so compelling.”

SUSAN T. ZELLMAN

Vice President, Education and Children's Content, Corporation for Public Broadcasting

chael H. Levine, the executive director of the Joan Ganz Cooney Center at Sesame Workshop, which promotes research and best practices about digital learning for young children. "But now everything needs to be developed for a range of different platforms."

The Sesame Street site, for example, provides podcasts with vocabulary lessons

and information related to a selected word, such as "dog." A video clip is offered as well, with former "Late Night" talk-show host Conan O'Brien explaining interesting facts about dogs.

"They are taking a literacy 360 approach and surrounding kids with learning opportunities," Ms. Linebarger said.

Those resources help to broaden the impact of the programs and provide learning opportunities beyond the television hour, she added.

With a range of activities, and even some aligned assessment tools, parents and caregivers can use educational programming more formally to teach children, experts say. A summer camp was launched last year in association with the "Super Why!" program on PBS and will be offered around the country this year.

PBS is reaching out to parents and caregivers through social-networking tools, such as Twitter, to provide reminders and daily strategies for nurturing language development and background knowledge, precursors to reading. Public-television officials are also devising initiatives to train early-childhood professionals to use educational television and other digital media to promote learning goals.

Detrimental Effects?

Parents and caregivers, however, need to be aware of the darker side of television, some experts say, particularly in light of data suggesting that children's daily media exposure can exceed the amount of time they spend in school.

"It would seem that viewing of age-appropriate educational programming in the preschool years is positively associated with reading," Marie Evans Schmidt, a research associate at the Center on Media and Child Health at Children's Hospital in Boston, wrote in an e-mail. "But there may be some

detrimental effects of TV viewing in general (total hours viewed) for slightly older children who are learning to read.

The thought is that watching TV may displace reading practice, which of course affects whether and how soon children become fluent readers."

That's why television focused on learning is a valuable asset worthy of public support, said Susan T. Zellman, the vice president for education and children's content at the Corporation for Public Broadcasting, the non-profit organization established by Congress that underwrites public television and radio services.

"These characters are engaging, and the kids are drawn into [lessons] by the characters and the stories, so you motivate them to learn," she said. "Educational television is so powerful and the research is so compelling."

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Experts Eye Solutions to '4th Grade Slump'

By Christina A. Samuels

For the first few years of school, struggling readers can usually get by. The material is simple, the lessons are repeated often, and intensive remedial help is common.

But for some of those pupils, reading ability starts a dramatic downhill slide right around 4th grade. While good readers are sponges for new words and grammar rules, slower readers are left further and further behind. Some never catch up.

Researchers have called the phenomenon the "4th grade slump," because it tends to occur when reading instruction shifts from basic decoding and word recognition to development of fluency and comprehension.

But questions remain. If there is a slump, what is causing it? And can children at risk of "slumping" be identified much earlier than they typically are, and their problems eased or eliminated?

The National Institutes of Health has awarded \$30 million over the next five years to research centers devoted to studying the issue, along with other questions related to reading disabilities. The four centers will delve into the learning process in children and adolescents to find out what goes wrong for some young readers, and determine ways to address the problems when they develop.

The centers conducting the research are based at the University of Colorado at Boulder, Florida State University, the University of Houston, and Baltimore's Kennedy Krieger Institute, a research and education facility that focuses on children with developmental disabilities.

Though the focus of each center's study differs, the goal for all is to come up with interventions that can be used in the classroom.

The project is being funded through and overseen by the National Institute of Child Health and Human Development, a branch of the NIH that has long played an influential part in research on reading.

James H. Wendorf, the executive director of the National Center for Learning Disabilities, a New York City-based advocacy organization, said he welcomed the research. "NICHD produces the scientific bedrock for reading instruction and reading interven-

tions," he said. "School personnel are clamoring for information on how to teach efficiently and effectively."

Knowledge Base Lags

Part of the drive behind the federal grants is great interest in "response to intervention," a teaching framework promoted in the 2004 version of the Individuals with Disabilities Education Act, said Peggy McCardle, the chief of the child-development and -behavior branch of the NICHD.

In RTI, teachers provide increasingly strong educational interventions for stu-

dents struggling in a particular subject. The hope is that by catching and addressing academic problems early, the difficulties will not persist.

RTI also has been billed as a way of identifying students with learning disabilities, because children who do not respond to interventions may have other deficits.

But in such situations, "practice is way ahead of the research," Mr. Wendorf said. Educators are already starting RTI models in their schools, and some of those efforts have shown success but not been scientifically tested, he said.

Ms. McCardle agreed: "Everyone's out there rushing to figure out how to do [RTI], but without a very strong research base."

The research centers are trying to figure out "what's the best way to do this, on a very practical level," she said. "We're trying to understand even more what's going on in the brain."

The Kennedy Krieger Institute is the center specifically assigned to dig into the "slump" as part of its multiple research areas.

Far-Flung Efforts

With funding from the federal government, the four centers of the Learning Disabilities Research Consortium are working on classifying learning disabilities and improving understanding of interventions for children with reading problems.

>> University of Colorado at Boulder

Researchers are addressing the identification, characterization, and remediation of reading disabilities and attention deficit hyperactivity disorder. Studying twins and other siblings from elementary through high school, they are examining the role of genetic and environmental influences in reading disabilities and ADHD. Partners include the University of Denver and the University of Nebraska.

>> Florida State University

The center, in Tallahassee, is comparing approaches for defining, classifying, and preventing learning disabilities affecting decoding, reading comprehension, spelling, and written composition. Researchers are also analyzing the response-to-intervention (RTI) approach, and investigating the prevalence of learning disabilities among struggling readers. The focus is pre-K-5. Yale University is a research partner.

>> Kennedy Krieger Institute

Focused on grades 3-8, the Baltimore-based center will study the neurobiology and behavior of children with reading disabilities, and the impact of disabilities such as ADHD on reading in the middle grades. It will also study the value of RTI in identifying children with reading disabilities. Partners include the Educational Testing Service, Haskins Laboratories, and the University of Maryland.

>> University of Houston

Researchers at the Texas university are developing interventions to prevent learning disabilities in young pupils and to remediate such disabilities in older students, while investigating the neurobiology of learning disabilities and how the brain's response changes with intervention. Partners include the University of Texas at Austin and the University of Texas Health Science Center at Houston.

SOURCE: National Institute of Child Health and Human Development

The term “4th grade slump” is attributed to the late Jeanne S. Chall, a professor and educational psychologist at Harvard University’s graduate school of education who was one of the nation’s foremost experts on reading.

Ms. Chall and her fellow researchers found that the slump was worse among poor children, and they suggested that was because such children typically were not exposed to a vocabulary-rich environment. She recommended that educators expose young readers to a variety of rich, engaging texts that would teach vocabulary along with decoding skills.

Still, some children continue through school with reading problems. And, 30 years of research has not provided all the answers, educators say.

Researchers do know what happens around 4th grade that makes reading difficult for students who are weak in the subject.

“When you’re younger, you’re learning to read. When you’re older, you have to be comprehending very well what you’re reading,” said Laurie E. Cutting, the associate director of the Kennedy Krieger Institute’s Center for the Study of Reading Development. “It really becomes a tool for learning, not a tool that you are learning.”

Early reading instruction focuses on decoding skills, or associating letters with spoken words. And it is possible that for some children, Ms. Cutting said, the slump could simply reflect reading problems not addressed early enough. Yet neuroimaging scans have shown that fluent reading involves other processes in the brain.

“The evidence so far seems to suggest there is something going on beyond decoding problems,” Ms. Cutting said.

Need for Help Persists

The reading-development center will use a variety of methods to examine reading in older children, including using magnetic-resonance-imaging, or MRI, scans, to see if there are telltale brain patterns that predict how children will respond to certain remedial efforts.

In addition, the center is examining possible connections between attention deficit hyperactivity disorder and reading comprehension, and will try to determine the prevalence of different types of reading disabilities, based on the knowledge it gains from its research efforts.

“The research in this area of learning disabilities is minimal, and the need for answers is urgent,” Ms. Cutting said.

Timothy Shanahan, the director of the University of Illinois at Chicago’s Center for

Literacy, said that reading is such a complex task that dealing with one difficulty may only unveil others.

“These kids may have double deficits, or multiple deficits,” said Mr. Shanahan, a former president of the International Reading Association. “If you clear up the decoding problem, it becomes obvious there are other problems, too.”

Another hypothesis, Mr. Shanahan said, is that the slump in students’ reading ability occurs because teachers start to assume pupils “get it.”

“These may be kids who were in need of reading help. In 2nd grade, that kid is going to get extra help with his reading. In 4th and 5th grade, they’re not getting that help,” he said.

That pattern, he said, is one reason why educators need to continue to develop good interventions for older students. “It is critical that these older kids not get lost,” Mr. Shanahan said.

It seems likely that the interventions for older students with reading problems will differ from those for younger students struggling to read, Ms. Cutting said.

“There’s certainly enough evidence to show that at certain stages, reading difficulties can be ameliorated,” she said. “When you get into the older grades, that may not be as clear-cut.”

Coverage of education research is supported in part by a grant from the Spencer Foundation.

““ There’s certainly enough evidence to show that at certain stages, reading difficulties can be ameliorated. When you get into older grades, that may not be as clear-cut.”

LAURIE E. CUTTING

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Helping Young Readers

Educators say reading software programs must be aligned with the curriculum and address individual needs.

By Kathleen Kennedy Manzo

Reading specialist Anne Bonington has searched for just the right software for pupils at Westorchard Elementary School, particularly the 4th and 5th graders working to build their fluency and comprehension skills.

Teachers at the Chappaqua, N.Y., school, she says, need computer-based lessons and activities that are aligned with the traditional ones presented throughout the school year. The technology tools must also provide a variety of exercises that allow reading practice, engaging vocabulary lessons, and content that builds background knowledge.

Bonington's ideal software package features activities that are sufficiently complex to push students' skills forward, yet adaptable to each child's reading level and technologically undemanding so that the children can be productive while working independently of the teacher.

The veteran reading teacher did her homework in figuring out first what role reading software will play in the classroom before she began scouring the marketplace for computer-based products.

"There are some kids who need much more practice" reading a variety of content, Bonington says. "You have to be able to plunk students down in front of the program and let them work by themselves successfully. But if it's disconnected from the instruction they're getting from the teacher, and the teacher doesn't know the program well, it's not going to be effective."

Such features are must-haves for teachers looking to integrate computer-based products into reading instruction, experts say. As more districts look beyond the bells and whistles that have made software lessons a novel addition to the classroom to more meaningful and effective applications of technology to instruction, they are heeding the lessons learned by teachers such as Bonington.

"The software has to cause children to actively pay attention to what you want them to learn," says Marilyn J. Adams, a prominent

reading researcher who has helped design a voice-recognition reading program for Soliloquy Learning, a Waltham, Mass.-based reading-software company. "It must always give the teacher [information] about how kids are doing and progressing," she says, "and it has the unique potential to adjust materials according to the individual needs of the students."

Individualized Programs

The ability to individualize the program is particularly valuable to teachers who organize their reading instruction around small groups and rely on structured activities that keep students productive and engaged when they have to work on their own.

"Teachers don't have time to sit and explore all the features of a particular software program," says Diane Morrone, a senior literacy associate at Learning Point Associates, a Chicago-based education research and policy organization. "In thinking about K-3 readers, the difficulty of the program is a big issue, and the match is really important of the material and the software to the student."

For middle school youngsters, however, the trick is providing the kind of basic instruction that struggling students need while tailoring the content and activities to the more mature tastes of adolescents and preteenagers, according to Danielle Carnahan, who leads Learning Point's literacy team.

"The software has to look age-appropriate," she says. "While they may not be strong readers, they are middle school students who don't want to do baby stuff."

But finding products that match the curriculum and are easy to use, yet sufficiently sophisticated for tech-savvy students, can be challenging.

Even after surveying selections from hundreds of vendors at a reading convention recently, Bonington went home empty-handed. She will continue to search, she says, because of the promise of technology to give students more chances for guided practice even without one-on-one attention from the teacher.

'Where It Works Best'

Knowing just how much of a role technology should play in reading instruction is part of the challenge as well, some experts say.

"To be really smart about this, you've got to use the technology where it works best, not in areas where you need teacher instruction and tutoring," says Ted S. Hasselbring, a research professor of special education at Vanderbilt University in Nashville. "It should not be playing the role that a teacher should play."

Checking off a list of required or preferred features, however, is not enough, adds Hasselbring, who helped create Scholastic Inc.'s "READ 180," a print and computer-based reading-intervention program for upper-elementary and middle school students. He advises looking for programs that are founded on the principles of research-based reading instruction and have evidence that they are effective in similar schools and districts.

"We know there are certain things necessary to making good readers, and you need to look for technology that supports what we know about good reading instruction," Hasselbring advises. "And you should ask: 'Is there evidence that this program is making a difference with kids?'"

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Reading Rituals

The Ogden, Utah, schools have used the mandates of the federal Reading First grant program to fine-tune instruction districtwide, and students' scores are way up.

By Kathleen Kennedy Manzo
Ogden, Utah

In 2002, big dreams were infectious in this small manufacturing city where the Wasatch Mountain Range provided the backdrop of some of the ski events of the Olympic Games. That year, educators in Ogden's schools set their sights high as well, when they turned to a federal grant program to transform reading instruction and student achievement in low-performing schools.

But officials envisioned a broader goal for the 12,300-student district, with its growing Hispanic population and widespread poverty. If they were going to make a commitment to improve reading, they would have to spread the Reading First model—including intensive professional development, research-based instruction, and monitoring of student progress—beyond the four schools participating in the initiative to all K-5 classrooms.

Over the past several years, schools in this manufacturing and tourism hub have dramatically changed how they teach reading, and built a more knowledgeable teaching corps in the process. Steady improvements in student test scores—and a dramatic leap at two schools—have followed.

"The superintendent said that we will only apply for this grant if part of our time is spent on dissemination of the Reading First model to the other schools in the district," Greg Lewis, the district's Reading First director, recalled recently. "I've been involved in a lot of reforms, but they never made any difference in the classroom. But now instruction has changed, and, not surprisingly, performance has changed."

Reading First was approved by Congress in 2001 under the No Child Left Behind Act to bring scientifically based reading methods and materials to struggling schools. The \$1 billion-a-year initiative has been plagued by controversy over how it was implemented by federal officials and consultants, including charges of interference in state and local decisionmaking and of favoritism toward cer-

tain reading programs. (See *Education Week*, Feb. 21, 2007)

instruction, conduct more substantive professional development in the subject for teachers, and are more likely than nonparticipating schools to use assessment results to inform instruction.

Those changes are evident in Jenny DeCorso's 2nd grade classroom at Gramercy Elementary School, where rows of desks have been replaced with tables for small-group instruction, shelves are stocked with books sorted by genre and reading level, and centers allow students to tackle a variety of literacy activities designed to build their fluency and comprehension.

Lessons are punctuated with explicit and carefully sequenced skill-building drills, and opportunities to practice what students have learned. Vocabulary words such as "strategy" and "unexpected" are posted on the window next to a cover illustration from the latest book selection, Annie and the Wild Animals. Punctuation rules and other writing conventions adorn the walls.

Ms. DeCorso, an 11-year veteran of teaching, remembers when she and her colleagues each followed their own daily plans for teaching reading, and struggled in solitude to figure out how to reach students who weren't learning from them. "We closed our doors and did our own thing," she said.

"It used to be more commonplace to have kids who could read nothing when they came to 2nd grade," she added. "Now, there are only a few who can't read at this point."

Of the 435 students at the school, more than half are Hispanic, and 87 percent are poor.

After completing a number of graduate courses in reading—a requirement for teachers in Reading First schools here—Ms. DeCorso says she is now more knowledgeable about how to teach the skill, and better equipped to carry out the structured curriculum and to provide supplemental lessons where needed.

She and the other 2nd grade teachers meet regularly to refine lessons, share insights and strategies for helping struggling readers, and analyze data from regular student assessments. On a recent Tuesday morning, a reading expert from Utah State University observed the teachers at work, as he does at schools here each week, and gave detailed feedback on how well their lessons and classroom structure reflected research on effective practices. The critique, while harsh at times,

Upward Trend

Reading First schools are making progress as judged by achievement-test results.

	Stanford Achievement Test (percentile) 2003	Iowa Test of Basic Skills (percentile) 2006
State	60	58
District	39	54
Bonneville Elementary	28	48
Dee Elementary	8	42
Gramercy Elementary	44	50
Lewis Elementary	17	41

SOURCE: Oddgen (Utah) Public Schools

tain reading programs. (See *Education Week*, Feb. 21, 2007)

The program has found favor, though, in many of its 5,700 grantee schools. While the grants go to districts only for specified schools, the federal initiative allows states and districts to use part of the funding to provide training in the Reading First model to teachers in all schools.

A federally commissioned report and a 2006 survey by the Washington-based Center on Education Policy found that Reading First schools are devoting more time to reading

prompted the teachers to justify their approaches, or hash out how to improve them.

In the 2nd grade classroom next door, Shannon Cook follows a similar structure as other teachers here for the three-hour reading and language arts block each morning. In one corner, Ms. Cook sits with just a handful of her 25 pupils, helping them pronounce in rapid succession words with the “long e” sound, a lesson out of Harcourt Trophies, the text used in Reading First schools here. She holds up a slick card with an illustrated eagle and turns it over to reveal the spelling as the children say the word in unison. Next is a leaf, then a bead.

It's evident that all five pupils can decode the words, and have grasped the sound. They move on to a poem and highlight words with the “long e” sound in a clever verse. They complete several other related activities before Ms. Cook, who is in her third year of teaching, calls together another group to work on a more challenging set of drills.

In the far corner of the room, several pupils are getting a quick course of phonics drills from a teacher's aide.

The rest of the children are working diligently at the literacy centers set up around the room. Lissette Landaverde is sorting cards with words that include the “long e.” Monica Sanguino is finishing a popular chapter book before she answers questions about the author she has been studying, and Alexia Lopez is thinking of descriptive words to include in her story about her favorite summertime memory. Other students are sitting on the floor with headphones for a listening exercise.

“I read really well,” said Ibrahim Njie, who looked up from the story he was writing to boast about his improving fluency. “I'm reading faster than ever ... 95 words a minute the last time I went to computer lab.”

Teachers in Ogden have that kind of information, and other data, at their fingertips and receive continuing advice on how to use it to target their lessons to students' individual needs.

During planning time at Dee Elementary School, for example, the 2nd grade team held its weekly meeting with reading coach Margaret Young to analyze test scores and figure out which specific skills students were having trouble mastering.

Those sessions have helped teachers pinpoint pupils' weak spots and find better instructional strategies for strengthening their skills. Teachers at this school, which until recently was rated as the most challenged in the state, never had Olympic-size dreams before. Their goals for raising reading proficiency, however, are no longer considered unattainable.

“During my first year here at a parent-

teacher conference, I had no clue what to tell the parents. I had no data about how they were doing,” said Stephanie McGaughey, who has taught at the school for eight years. “Now, I can show them where their child is compared to the class average and benchmarks, and explain why we are concerned about their progress.”

Before she attended the reading classes and workshops through Reading First, “I just taught the children the same way,” Ms. McGaughey added. “If they got it, they got it; if they didn't, I still moved on.” Now, she said, she has an arsenal of strategies for helping each student master all the essential skills, and support from a coach to help her use them.

Throughout the district, teachers are drawing on the lessons learned at the Reading First schools to improve instruction more broadly. A state-sponsored initiative, Performance Plus, allows the district to offer some of the same professional development and support services to the schools that aren't part of the federal grant, albeit with a fraction of the funding.

Convincing administrators and teachers of the benefits of the voluntary program has been a hard sell at some schools, according to Reed Spencer, the district's executive director of curriculum and assessment. Some 80 percent of the 125 teachers in the district's non-Reading First schools have signed on to the program, which requires that they attend workshops and classes after school hours and on weekends.

But now, all teachers are bound by contract to adhere to the principles of effective instruction outlined in the Reading First plan, whether they've participated in the additional training or not. That means they are expected to teach, explicitly and systematically, the five components required of grantees' programs under the federal law: phonemic awareness, phonics, fluency, vocabulary, and comprehension. In addition, the state directs them to develop students' oral-language and writing skills, as well as several other areas that influence reading comprehension.

“We reserve the right to speak to any teacher at any moment about the explicitness of their instruction. That's a direct outgrowth of Reading First,” said Mr. Spencer. “And principals understand that they can't supervise things that they don't know about.”

Principals and reading coaches throughout the district get the grounding they need in monthly meetings and periodic workshops that focus on effective instruction, assessment, and classroom observation. Administrators from Reading First schools meet as a group each week to update one another on how the program is working.

Reading Instruction in Ogden

- Ninety minutes of the K-3 school day is devoted to the Reading First program. An additional 90 minutes for language arts is used for small-group intervention, oral language, and writing.
- The Harcourt Trophies reading program is the core curriculum. Teachers use approved supplemental and intervention texts.
- All teachers in Reading First schools have received a reading endorsement after completing graduate-level classes in reading. Many are pursuing a master's degree in reading. Graduate classes are offered at the district's headquarters.
- The reading time block includes small-group instruction for K-3 pupils, with skills-based lessons geared to each group's reading level.
- A teacher's aide leads intensive scripted lessons in phonics and word recognition to help students build foundational skills. Teachers work with the lowest-performing students.
- Classrooms include centers where students do literacy activities designed to strengthen reading and writing skills. The centers promote reading different genres, writing, listening, studying antonyms and homonyms, learning letter sounds, and reading science and social studies texts.
- Teachers give regular assessments—including Dynamic Indicators of Basic Early Literacy Skills, or DIBELS—to students to determine reading strengths and weaknesses.
- A reading coach at each school meets with grade-level teacher teams each week to review data and discuss instructional strategies and materials for addressing students' needs. The coach visits classrooms to demonstrate lessons and to advise teachers on how to improve instruction.
- A Utah State University consultant visits the district three times a month to offer technical advice, critique classroom instruction, and help teachers apply research findings to practice.
- The district is disseminating the Reading First model to other schools in the district through a state-financed program called Performance Plus.

SOURCE: Ogden (Utah) Public Schools

The intense focus on reading instruction is paying off in improved results on tests, Mr. Lewis said. And last school year, all of the Reading First schools met goals under the No Child Left Behind law for adequate yearly progress in reading for the first time.

Teachers here are celebrating those gains. But the proof of the program's impact, they say, is in the day-to-day changes they've seen in their own practice and in children's achievements in the classroom.

"I never thought a kindergartner could go beyond letter recognition, but now we're seeing them read," said Melissa Brock, a veteran kindergarten teacher at Bonneville Elementary School, where nearly half the 450 students are Hispanic, and 80 percent qualify for free or reduced-price lunches. Full-day kindergarten has given Ms. Brock and her colleagues more time to build a foundation for reading. Reading First, she said, has introduced a sounder instructional approach.

"Before, I was kind of flying by the seat of my pants," she said. "Now, I actually feel more competent and capable as a teacher."

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Creating Readers

The Mentor

A self-proclaimed "book whisperer," 6th grade language arts and social studies teacher Donalyn Miller says she has yet to meet a child she couldn't turn into a reader. On average, her students at Trinity Meadow Intermediate School in Keller, Texas, read between 50 and 60 books a year; last year, one of her students read 300 books. According to school lore, Miller's 6th graders have been known to become so engrossed in books that they walk into walls and insist on being photographed with their favorite books in class pictures. Even her former students return to borrow from her library, which has more than 2,000 titles and extends beyond her classroom into a storage closet across the hall.

And her methods have also produced more than anecdotal results: Last year, her students received a 100 percent passing rate on the reading portion of the Texas Assessment of Knowledge and Skills, with 90 percent receiving a "recommended" score.

What is your secret? I would love to turn my non-readers into readers! How do you find the right book for your students?

Like many teachers, I stand on the shoulders of the great ones for what they have taught me about inspiring readers and writers, and building community. At the top of the list are Irene Fountas and Gay Su Pinnell for their reader and writer workshops, and Nancie Atwell and Janet Allen for describing their teaching experiences. Their books have shaped how I implement meaningful literacy instruction in my classroom.

We teachers must be at the top of our game about what the most current research has to say about best practices. Don't overwhelm yourself, though! I would pick one book or one workshop on a literacy topic that you feel you need help with teaching, look at ways to implement the new ideas into your class, and build on it. Your needs and the needs of your students are unique.

As for finding the right books, I read tons of children's literature and am familiar with most of the big name authors. I can

usually read one or two children's books a week and still have a life! This provides me with a large pool of books that I can recommend to students. Often if I have not read a certain book, I have at least read something by the same author. Over time, I have gotten better at fine-tuning my recommendations based on what has worked in the past.

Please give us a list of the top 5 things that you do to inspire children to read.

1. Assume all children are readers and that they can be successful as readers from the first day. I communicate this to my students. I think many developing or dormant readers—I prefer these terms to "struggling" or "reluctant"—do not understand that reading is a skill that everyone can acquire. They see reading as a talent that they just don't have.

2. I share my personal love of reading, model my reading, and talk about the books. I read the books the children want to share with

me. I let my students know that I am a reader, like they are, and that I am just a more experienced reader, not an innately better one. When I encounter challenges as a reader, I share this with them, too.

3. Choice is a powerful motivator for students! Although I do have genre requirements for the reading in my class, students get to choose which books they would like to read in order to meet these requirements. By providing this choice, I demonstrate that I value each student's personal taste. This also shows students how we can each take a different reading road to meet our shared goal.

4. In addition to regular readers' workshop time, I give students time to read their independent books in class. There is evidence to support that children are more likely to read a book outside of school, if they have been reading it in school. I do not do "warm-ups" or "bell ringers." These activities do not contribute to kids' reading habits.

5. When students come into to my room, they know that they have to get out their books and read until I start the instruction for the day. If they finish an assignment, they read. If the projector breaks, they read. If a teacher or parent comes to speak to me, they read. There are no "free" time or "when you are done" activities, only their books.

Do you use special books that you know will catch students' interest? If so, what are they? I would love to elevate myself to "book whisperer" also!

I teach 6th graders, so many of the books I use are particular to this age and their concerns about becoming middle schoolers. The first book I read out loud to them every year is the anthology of school stories, *Tripping Over the Lunch Lady*, edited by Nancy Mercado. This book is full of short stories, by well-known authors, which address topics such as being the new kid or having dyslexia, but most have a humorous tone. Our first shared novel is *Sixth Grade Nickname Game* by Gordon Korman. He is one of our favorite authors, by the way! This book tells the story of a group of students who are not the best readers, but manage to ace the state's reading exam by power-reading tons of books. (No need to explain why I use this one!)

We also have a fondness for the memoirs of Gary Paulsen. His fiction is superb, of course, but his personal stories, including *Guts* (which I also read aloud), *My Life in Dog Years*, and *How Angel Peterson Got His Name* are class favorites year after year.

By reading these three texts, students are exposed to about 15 authors who are prolific

Donalyn Miller's Favorite Teacher Resource Books

In the Middle

by Nancie Atwell

Guiding Readers and Writers

by Irene C. Foutas and Gay Su Pinnell

Yellow Brick Roads

by Janet Allen

Strategies That Work

by Stephanie Harvey and Anne Goudvis

and write high-interest fiction. I can then make recommendations by reminding students how much they enjoyed these stories in class and lead them to more books by the same authors.

Do you begin this journey with your students by requiring they read a book? Some of my students would never pick a book up willingly! How do you get them started?

No matter what else we accomplish, all of my students pick a book to read the first day. I turn them loose in my class library and we all grab books and talk about the ones we have read. Everyone gets a library card. (I bought those lined cards that librarians use and keep them in a file box.) It never occurs to me, nor is it expressed to the students that not reading is an option. There is never a discussion about not liking to read or waiting for a better time. By making this priority one, I think that students understand reading is the most important thing for them to do.

As for requirements, I require all students to read 40 books in a variety of genres such as realistic fiction, historical fiction, fantasy, and nonfiction. I am vague about what happens if they do not meet this goal (which is really nothing), but I explain that every single reading lesson will circle back to some sort of application that involves the book they are reading. If I teach a lesson on conflict, eventually students will be asked to identify the conflict in their own book and provide evidence to support their observations.

I do not "teach books"; I use the students' independent reading to reinforce the skills and concepts that I am teaching. I make it clear that if students are not reading a book, they will not be able to complete the course work for my class. Let me clarify that all children do not

meet my 40 book goal, but the least number any child has ever read is 22. Think about your developing and dormant readers and what reading 22 books would do for them!

Do you have special strategies for helping students with learning disabilities "meet the right book," when they find reading to be such a chore?

The first thing for these developing readers is to get them to feel success as readers as soon as possible. Giving students choice in what they read and allowing them to abandon books—this does not mean, leave them in the hall—that are not working for them takes some of the pressure off these students and allows them to feel more in control of their reading. Many students have never been allowed by a parent or teacher to put a book down and walk away from it. This is certainly a right that adult readers exercise!

I would look for a short, easy-to-read book that taps into a personal interest. I often slip kids a new book that no one has read yet (except me, of course) so they can be the "first" or give them the first book in a high-interest series such as *On the Run* by Gordon Korman. Don't attach any "teacher strings" to the book, no report, no comprehension questions, just a conference perhaps to see how it is going. After all, the last time I shared a book with a friend that I had just read, I did not whip a diorama out of my pocket!

The only goal is for the child to finish the book. Make a big, public deal when students start to finish books on their own. I have had the rest of the class drop everything and listen to the successful reader give a brief recommendation. I cannot describe the weight that is lifted off a student when they have successfully finished one book on their own. A lot of walls come down at that point.

How do you get reluctant and low-level readers to become interested in reading out loud in class?

We never, never read out loud in "round robin" or "popcorn" style in my room. Let's think about our goal, which is comprehension. If half of your students are reading ahead and the other half are sitting in agony waiting to be called on, what purpose is being served? Comprehension breaks down for everyone. I consider reading out loud in this way analogous to standing at the board in front of the class to solve math problems. Children have told me that this is one of the main reasons that they hate to read in school.

I share books with my students by reading aloud while the students follow along in their own copies. This allows us to experience the text together, while accomplishing other

goals. Students will be pulled to read slightly faster because they're having to follow me; they hear unknown vocabulary words, which are pronounced for them, so they focus on comprehension, instead of decoding.

This is not to say that students never read out loud! If I want students to read something from a textbook for example, I assign sections of the text beforehand and give them time to practice. For this assignment, students may buddy-read out loud with a partner of similar reading level, or they may read out loud to me as part of a reading conference or small group instruction.

For my students with dyslexia or other reading disabilities, I have found success using clear-colored overlays when reading. The color helps the child hyper-focus on the text and filter out other stimuli. You can find bookmark-size overlays that isolate one line at a time. (Check with your local teacher store or a library supply catalog.) You can also get colored transparencies and cut them into strips. Students are extremely self-conscious about reading behaviors that are "babyish" to them, like reading with a bookmark line-by-line or subvocalizing. Let students know that it is OK to do this, if they need to for comprehension. Consider that these students may still use these reading habits because they are at the developmental level of a much younger reader. They will abandon most of these habits as they gain proficiency.

COMMENTARY Published April 26, 2006

Reading-Comprehension Skills? What Are They Really?

By E.D. Hirsch Jr.

The reading-test scores of 4th graders have risen. But, somehow, that improvement has not resulted in higher reading scores for grade 8 and beyond. What's the explanation? Why don't later advances in reading go hand in hand with earlier ones?

It used to be thought that once a student learned how to sound out words fluently and accurately, later reading gains would follow naturally through wide reading. There is merit in this idea. Wide reading will certainly enhance students' general knowledge and vocabulary, and thus enable them to read still more widely. That's all very true; wide reading should certainly be encouraged. But suppose you are a student who can sound out words fluently and accurately, but cannot successfully understand much of what you read on your own. It's hard to see how wide reading will help such a student. It's doubtful that he or she will readily engage in such an arduous and confusing activity, and equally doubtful that doing so will foster big improvements in reading proficiency.

For such uncomprehending students (and test scores suggest that there are many of them), wide reading is hard and unrewarding. For them, the theory of a natural progression—from decoding, to opportunities for wide reading, thence to high general reading ability—doesn't currently work. The reasons for the failure of this natural progression provide, I believe, an explanation for the current pattern of improved reading scores in early grades, followed by low and stagnant reading scores in later grades.

Professor Joseph Torgesen and his colleagues at Florida State University have shown that reading tests in succeeding

grades tend to test different aspects and dimensions of reading. In early grades, the most important factors are fluency and accuracy of decoding, but in later grades the tests place an ever-increasing emphasis on the student's previously acquired knowledge. It would seem that to achieve higher reading scores in later grades, the missing ingredient is not primarily technical skill—not even skill in performing comprehension strategies—but knowledge. This hypothesis is supported by analyses of the gains induced when students practice comprehension strategies. The small gains quickly level off. Six lessons in comprehension strategies yield as much or as little benefit as 25 lessons. The very limited efficacy of strategy-practicing is explained by the fact that the most important factor in reading comprehension is the reader's prior knowledge about the topic, as recent cognitive science has determined.

It follows that enhancing students' general knowledge is the most promising approach to enhancing their ability to comprehend what they read. Let's test out this hypothesis with a concrete example. (The passage is chosen with the expectation that most readers will not be able to understand it. As will be seen, that's the point.) The example was chosen completely at random from one of the most influential books ever written:

A manifold, contained in an intuition which I call mine, is represented, by means of the synthesis of the understanding, as belonging to the necessary unity of self-consciousness; and this is effected by means of the category.

Some readers of *Education Week* may well understand that sentence, and know in-

stantly where it came from: Kant's *Critique of Pure Reason*. But for those readers who are not familiar with the argument of Kant's book, their going on to read the next sentence will probably not further enhance their comprehension:

This requirement of a category therefore shows that the empirical consciousness of a given manifold in a single intuition is subject to a pure self-consciousness a priori, just as is empirical intuition to a pure sensible intuition, which likewise takes place a priori.

And so on.

Now pretend you are in the position of an elementary school student taking a reading test, and are asked a typical multiple-choice question about this passage:

The main idea of this passage is:

1. Without a manifold, one cannot call an intuition "mine."
2. Intuition must precede understanding.
3. Intuition must occur through a category.
4. Self-consciousness is necessary to understanding.

To help you answer, what if I offered you a bit of extra time so you could summarize, classify, and find the main idea? Didn't help? How about "questioning the author": What is Kant trying to get at here? Still clueless?

But here's a clue: Learn, as background, the philosophical problem Kant was trying to solve, and the structure of how he attempted to solve it. Then you will find out that the right answer is No. 3. Of course, that will take quite a bit of what psychologists call "domain-specific knowledge." But surely that pursuit would be more worthwhile than time fruitlessly spent in practicing reading strategies such as "finding the main idea" and "clarifying" and "summarizing." The vast amount of time that teachers and students are spending on those strategy exercises is time that they aren't spending in learning about domains of knowledge critical for understanding books, newspapers, and newscasts.

Let's look at an easy example from a New York state reading test for grade 4. It begins as follows:

There is a path that starts in Maine and ends in Georgia, 2,167 miles later. This path is called the Appalachian Trail. If you want, you can walk the whole way, although only some people who try to do this actually make it, because it is so far, and they get tired.

The idea for the trail came from a man named Benton MacKaye. In 1921, he wrote an article about how people needed a nearby place where they could enjoy nature and take a break from work. He thought the Appalachian Mountains would be perfect for this.

The passage goes on for a while, and then come the questions. The first one concerns, of course, the main idea:

This article is mostly about:

1. How the Appalachian Trail came to exist.
2. When people can visit the Appalachian Trail.
3. Who hikes the most on the Appalachian Trail.
4. Why people work together on the Appalachian Trail.

Try to put yourself in the position of a disadvantaged 4th grader who knows nothing of hiking, does not know the difference between an Appalachian-type mountain and a Himalayan-type mountain, does not know just where exactly Maine and Georgia are, and does not grasp what it means to "enjoy nature." The Appalachian Trail might become as hard for her as Immanuel Kant is to most adult readers. Such a child, though much trained in comprehension strategies, might nonetheless answer the question incorrectly. Her advantaged counterpart, equally well trained in comprehension strategies, is not innately smarter, but happens to be familiar with hiking in the Appalachians, has been to Maine and Georgia, and has had a lot of experience of "enjoying nature"; this child easily answers the question correctly. But was it because she had practiced comprehension strategies, or was it because she had the background knowledge readily to comprehend what the passage is saying? Remember Kant!

Consider how schools are reacting to the pressure of the No Child Left Behind Act in order to score higher on reading tests. You can gain an insight into their activities from an excellent front-page story that Linda Perlstein wrote some months ago in *The Washington Post* about things children are doing in the many hours being spent on "reading" (May 31, 2004):

Here is 9-year-old Zulma Berrios' take on the school day: "In the morning we read. Then we go to Mrs. Witthaus and read. Then after lunch we read. Then we read some more."

These reading and writing periods, Perl-

stein points out, come at the expense of classes in history, science, and art. The reading materials themselves are quite vapid. In this particular class, the children were reading a book about a grasshopper storm. But the point of the class was not to learn anything in depth about grasshoppers; the point was to learn how to ferret meaning out of a text by using formal "strategies."

For 50 minutes, Tracey Witthaus pulls out a small group of 3rd graders—including Zulma—for Soar to Success, an intensive reading-comprehension program used at many county schools. Instead of studying school desegregation and the anniversary of Brown v. Board of Education, Zulma's group finishes a book about a grasshopper storm and practices reading strategies: Predict, summarize, question, clarify.

"Clarify," said Zulma, who began the year reading at the late 1st grade level. "When I come to a word I don't know, I look for chunks I do. Reminded. Re-mine-ded."

"Clarify," said Zulma's classmate Erick Diaz, 9, who began the year reading at a 2nd grade level. "When I come to a word I don't know, I look for chunks I do. Hailstones. Hail-ston-es."

The teachers tell Perlstein that all this activity doesn't seem to be working.

The blame for all this drill-and-kill activity is being laid on the federal No Child Left Behind law and the standardized tests that are being used to fulfill its provisions. But I have a different take. I would lay the blame for these deadly activities on inadequate theories of reading. Schools have been assuming that skills-oriented, test-prep activity in comprehension strategies will improve test scores in reading. Yet they haven't done so significantly. On the other hand, there is evidence, not just from cognitive science, but also from the successes of Core Knowledge schools, that cumulatively building up students' general knowledge leads to much higher reading scores in later grades, where the reading scores really count. It's in later grades, 6-12, that the reading scores really count because, after all, gains in the early grades are not very useful if, subsequently, those same students, when they get to middle school and then high school, and are about to become workers and citizens, are not able to read and learn proficiently.

What shall teachers do, then, instead of continuing to teach trivial stories in basal readers in the service of practicing deadening comprehension strategies? Well, that

is a subject I pursue in my new book, *The Knowledge Deficit*. Outlining the solution here would take me far beyond the space allotted. Suffice it to say that achieving a more adequate approach to reading will require us to qualify the ideas and assumptions that now underlie comprehension exercises in the basals as well as much expertise in the field of reading. And it will cause us instead to focus laser-like on imparting knowledge to children, starting no later than kindergarten—the substantial knowledge of words and the world that will be essential to their later proficiency in reading.

This systematic, knowledge-based approach will be radically different from the approach advocated by many reading experts, and currently embodied in reading programs that cost publishers tens of millions to make and schools hundreds of millions to buy.

With all that expertise and money ranged against a radical change of ideas, one can only worry and tremble. As Dr. Johnson once observed, after he had commonsensically challenged a long-received idea:

“I am almost frightened at my own temerity; and when I estimate the fame and the strength of those that maintain the contrary opinion, am ready to sink down in reverential silence.”

But on the other hand, Dr. Johnson turned out to be right.

*E.D. Hirsch Jr., the author of *The Knowledge Deficit*, is a retired professor of education and humanities at the University of Virginia, in Charlottesville, Va., and the founder of the Core Knowledge Foundation.*

COMMENTARY Published March 4, 2009

Reading, Science, and Reductionism

By Thomas Newkirk

There's an old Roman insult that goes like this: “He can't read or swim.” The presumption is that just about anyone who applied himself (or herself) could learn these skills. Indeed, many countries with high literacy rates, such as Japan, are successful in teaching children to read without all the angst and sense of crisis so common in the United States.

Here, our crisis mentality has led to the curious elevation of “reading science” as the savior that will lead us from a reliance on tradition, habit, experience, and impression to a truly solid foundation. The 2000 report of the National Reading Panel is seen by many reformers as a bold first step that will place reading instruction on a scientific basis. Virtually any educational product related to the subject now claims to be “research based,” no matter how tenuous the connection.

The reading panel's report has elicited a steady drumbeat of criticism over the years, both for what it chose to examine and what it chose to ignore. But even many of its harshest critics seem to accept the general principle that reading science has the potential to adjudicate among different practices and identify “what works.” It's just that the National Reading Panel did a bad, unwisely selective job.

This top-down model of research is, of course, the century-old dream of industrial management ushered in by Frederick Winslow Taylor, who promoted the belief that a class of researchers (and not the workers themselves) could determine the most efficient way to manage the activity of labor. In this way, we could achieve a science of labor, of reading, of living.

I would like to take a more radical position and argue that there is a fundamental problem with this use of research—and the name for this problem is reductionism. We can begin with the term “variable.” The bias of this “gold standard” experimental research is to view teaching practices as a set of variables; some promote the learning of reading,

some may not. Some practices may just be in the curriculum because they have always been there. The researcher promises to give causative weight to variables, so that educational practice might focus on “what works.”

In its review, the reading panel identified a handful of variables, or individual practices, that seemed to be effective: instruction that focused on vocabulary, fluency, phonemic awareness, phonics, and comprehension. It's an odd list—fluency and vocabulary instruction, but not independent reading. Nothing about writing. More significantly, it is an incomplete set of parts that does not add up to a coherent cultural practice.

In many ways, the flaws in reading science are the same flaws that Michael Pollan points out about nutrition science in his book *In Defense of Food*. The watershed moment for Pollan was the shift from “food” to “nutrients” that began in the 1920s (with the discovery of “vitamins”) and gained full force in the 1970s when food began to be viewed as a delivery system for carbohydrates, proteins, fiber, and other newly emphasized elements. Foods were essentially the sum of the nutrient parts. And, he writes, “Since nutrients, as compared with foods, are invisible and therefore slightly mysterious, it falls to the scientists ... to explain the hidden reality of foods to us.”

Eating was thus mystified. It was no longer a cultural practice, built of tradition, conviviality, and pleasure. Furthermore, since nutrients (and not food) were the central concern, these nutrients could be extracted or manufactured to “fortify” a vast array of processed products that were no longer “food,” but “edible food-like substances.”

If all of these changes made us healthier, Pollan's argument would seem mere sentimentality. But they haven't, and part of the reason comes from the naive belief that these extracted or manufactured nutrients act the same way in isolation as they do in the actual practice of eating food—that a pill containing a nutrient found in carrots has the same

benefit as eating that nutrient in a carrot. A nutrient is a nutrient. But the carrot itself is part of a system in which a range nutrients interact, and the nutrients of the carrot interact with other foods being eaten—an extraordinarily complex and poorly understood system of metabolism.

The analogy to current reading instruction is telling. Reading has been mystified so that teachers (many of whom have been successful for years) are asked to be dependent on researchers who can tease out the key variables (or nutrients) in instruction. Accumulated teacher experience is devalued as impressionistic when compared to the results of hard science. Reading programs are delivery systems for these variables, and children typically spend more time with “reading-like” activities than they do with reading.

It is common for one reading selection in some basal readers to have as many as 50 pages of supporting activity in the teacher’s manual. And for millions of children across the country, “fluency” translates into the speed-reading of nonsense words, which seems the data of choice in many schools. But there is gold in them hills: Like processed foods, processed reading allows for a hugely profitable range of workbooks, tests, and consumable materials. Schools don’t develop reading programs—they buy them. Actual books, if available at all, make up a small part of this expenditure.

Those who argue for a cultural, or in Michael Pollan’s terms, an ecological, approach to reading—one in which literacy is a meaningful, invested activity—are seen as hopeless romantics. But who’s being impractical here? Real food, real reading. Something to consider.

*Thomas Newkirk is a professor of English at the University of New Hampshire, where he directs the New Hampshire Literacy Institutes. His book, *Holding On to Good Ideas in a Time of Bad Ones: Six Literacy Principles Worth Fighting For*, was published by Heinemann in February.*

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