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Helping Dependent Readers Use the Web

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Helping Dependent Readers Use the Web

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As teachers, we have all spotted them, differentiated instruction for them, and worried about them—students who struggle with texts. We seek ways for them to become independent readers, scaffolding their learning so that they can build the skills and attitudes necessary to become proficient and fluent in making meaning from what they read.

These students are *dependent readers.* As Dr. Kylene Beers, senior reading researcher at Yale University, said in her book *When Kids Can't Read,* these readers "stumble over more words than not, read slowly and disfluently, [and] barely comprehend at a literal level, much less an inferential level." They depend on "outside-of-themselves sources not only to tell them what to do but in many cases, to do it for them." (***Editor's note:*** Find information about this and other resources on p. 45.) Independent readers can struggle with texts, too, but when they do, they self-sufficiently apply a range of strategies to help them to decipher a text's meaning (e.g., making causal connections, inferences, and generalizing to other texts). Independent readers use these coping strategies to *work through* a text. Dependent readers, by contrast, stop, appeal for help, or continue to turn pages until they reach the end, regardless of whether the text is making sense to them.

Some educators believe instructional use of Web-based texts is appropriate only for independent readers. We disagree. Teachers have

A teacher educator, an elementary school teacher, and an integration specialist share Web-based strategies to help struggling readers improve comprehension.

been using multiple strategies for decades to assist dependent readers' use of paper-based texts. Here, we share similarly classroom-tested strategies for scaffolding dependent readers' use of Web pages for curriculum-based learning. These techniques are based on long-effective offline instructional practices, but are designed to accommodate the hypertextual nature of Web-based resources. We believe dependent readers can learn to navigate both conventional text and hypertext—with deliberate and goal-specific help from their teachers.

Developing Independence in Context

How, as Beers asks us, do we help "students evolve from struggling readers into readers who successfully struggle"? She suggests that we give them texts to read *at* their instructional levels—not below or above. This experience helps dependent readers develop patience and stamina in reading, and, through positive reading experiences, the emotional confidence necessary to participate fully in a community of readers— creating what Beers calls "a momentum that ricochets to another confidence." We suspect that when dependent readers successfully navigate the Web, that accomplishment can "ricochet" not only to confidence in reading but also to increased competence in using technology to learn.

Yet, to help dependent readers become independent Web users, teachers must adapt instructional assistance to the ways in which successful Web readers engage with material online. As information architect Jakob Nielsen has asserted in *How Users Read on the Web*:

> People rarely read Web pages word by word. Instead, they scan the page, picking out individual words and sentences. In a recent study … I found that

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79 percent of our test users always scanned any new page they came across; only 16 percent read word-by-word.

Because most people read 25% more slowly on computer monitors than on paper, and because the hypertextual nature of information linkages on the Web make so much information so rapidly accessible to readers, usable Web pages are those that can be deciphered quickly. Nielsen says that the most usable Web pages employ "scannable text," incorporating:

- Highlighted keywords (links, different typefaces, or colors)
- Meaningful subheadings
- Bulleted lists
- One idea per paragraph
- Statement of conclusions first
- Half the word count (or less) of conventional writing

Dependent Web readers, therefore, need to learn to scan Web-based texts quickly and correctly. We can help them do so with scaffolds appropriate to their particular learning needs.

Scaffolding Web-Based Reading

What does scaffolding for dependent readers' Web use look like in classroom practice? We have used at least six different techniques, usually in combination:

1. Group viewing of Web pages (with a large monitor or computer projector) while an independent reader summarizes or reads online texts aloud.
2. Using image-based Web pages with text limited to titles and short captions.
3. Locating and linking to specific, appropriately leveled Web pages.

4. Renaming and reorganizing Web browser bookmarks so that the words and symbols used are easy for dependent readers to recognize.
5. Creating "entry pages" formatted as simple tables, with linked text or icons in each table cell that lead to teacher-selected Web sites.
6. Grouping dependent and independent readers together to work on learning activities, providing cognitively complex guiding questions for group dialogue that the more facile readers read aloud and discuss with their peers.

Paula White, an elementary school teacher in central Virginia and one of the authors of this article, implemented each of these scaffolding methods. In 1995, Paula felt fortunate to have Internet access in her first-grade classroom in Charlottesville. Like most teachers, she began educational use of the Internet as a consumer, bookmarking, demonstrating, and guiding discussion around image-soaked Web pages that addressed curriculum-based topics her students were exploring.

Unlike most teachers, though, Paula had relatively easy access to the ongoing support of knowledgeable colleagues in her school district and in the nearby university, who helped her to move more quickly than most from consumer to producer status. Paula had a compelling reason to make this transition quickly—she was teaching first graders who were predominantly dependent readers, but who were also more than enthused about actively exploring Web-based texts, images, and video clips. She realized she could effectively scaffold her dependent readers' Web explorations by creating

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bookmark lists and entry pages using simple text and carefully selected, topically related images.

Applying the Strategies in the Classroom

For example, when Paula planned a unit on Canada for her students, she began by locating resources for her own edification. Then it occurred to her that some of the same Web sites she found fascinating would also fascinate her students. So, with her classroom computer connected to a large-screen television, Paula began taking her first graders on virtual field trips to Canada, reading captions aloud and guiding inquiry-based, whole-group discussions catalyzed by the Web-based images they viewed together.

When her students were in "choice time," Paula had a variety of Canadian materials placed in different learning centers in her classroom for students to explore: picture books, postcards, toys, maps, and CD-ROM-based software. Soon, one student asked, "Can I take that virtual drive down the park road you took us on earlier on the TV?" Realizing that the students were asking to use the Internet independently, Paula linked to an image-rich Canadian Web site on the classroom computer, and that became another learning center. Her students happily scrolled, clicked, and enjoyed the interaction with a Web site that took them (virtually) to the country to the north of their own.

Yet Paula struggled with how to configure this learning station for first graders so that it supported independent learning for dependent readers, while maintaining the safety of her students' access to pictures and text. She realized that her students needed guidance in knowing which site to access first or in response to a particular question or interest area. This is when Paula learned to rename, reorganize, and format her bookmarks with simple words, mixed case, dividers, and asterisks. So, when a student said, "Ms. White, I want to see those lights in the sky. How do I get there?" Paula, the teacher of reading, could respond, "Those lights are called the 'Northern Lights.' What letter do you need to look for in the bookmarks?" She heard: "N!" and then usually saw a smile, as the student realized he now had a way to look for the information himself.

When Paula saw how eagerly her students used her customized bookmarks to view images of Canada, she began inquiring about how to create Web pages to make accessing preselected sites even easier. She learned how to construct tables with carefully worded descriptors in each table cell that were linked to Canadian Web sites offering the kinds of information described. With this available for her students to use, it was easy for Paula to ask guiding questions based

in teaching methods for early readers that helped her students to find the information they were seeking, competently navigate the Web, and build initial sound and word recognition skills while doing so.

During the next school year, Paula and her students were exploring the life and contributions of Benjamin Franklin. Paula found appropriately leveled Web sites for her students to use in three broad categories: Franklin as scientist and inventor, politician and revolutionary, and person. Paula organized the Web entry page according to these three categories, listing links to corresponding Web sites with each category. Her dependent readers, in using this simple but developmentally appropriate Web table, were not overwhelmed with text, so they were able to locate the information they were seeking efficiently and relatively independently.

Further, with this three-part list of multiple sites clearly displayed on one Web page for her students, Paula could use a clever scaffolding technique without her students realizing what she was doing. With each of her first graders sitting at a separate Internet-connected computer in the school's lab, Paula directed different students to different links. The verbal site assignments appeared to be made at random ("Johnny, you go to the first link. Susie, you go to the second."), but they were everything but unsystematic. Because the different Web sites linked on Paula's page displayed information at different comprehension levels—using her knowledge of her students' different

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Get Carried Away to Canada

Studying other countries is part of the primary Social Studies curriculum in Albemarle County, and in First Grade we study Canada. Thus, I went surfing and did netsearches to find the following links, organizing them by topic. Click on the following topics to learn more about each!

Explore these links to learn about Canada!

Click Here If You Cannot View A Table

Places to Visit	People	Animals	
Fun for Kids	The Arctic	Super Sites	Return to Ms. White's home page
Teacher Resources	Schools on Line	Bibliography (yet to be done)	

You are invited to e-mail me at

*>cwhite@albemarle.org

Click Here to Return to the Murray Elementary Home Page This page was updated in August, 1998.

The simple layout of Paula's entry Web page to Get Carried Away to Canada makes it easy for struggling readers to access relevant information.

reading levels and of the sites themselves—Paula could match students' abilities to read and maneuver within text to the sites that would best serve their learning.

Forming Document-Based Questions

During still another school year, when Paula was teaching a fourth-grade class, she integrated what she learned about document-based questions from a history educator at the local university to scaffold her students' content learning. The context was a unit that her students were doing about 19th-century westward expansion in the United States. Paula placed her students in learning groups ("wagon trains"), the members of which became the class "experts" on topics such as fur trading, mountain men, and the gold rush. Several of the Web sites the students used to explore these focused topics were almost completely image-based, while others relied heavily on text. Students were paired carefully according to their reading needs to explore the sites.

Yet the document-based questions that Paula and the history educator prepared to accompany both image-dense and text-heavy Web sources were complex—the former more complex than the latter, Paula later admitted. Adult volunteers worked with groups that contained dependent readers, reading and discussing the guiding questions together and providing scaffolding so that the learners' responses could become more complex over time. In addressing these document-based questions together in their learning groups, Paula's readers at all levels engaged in active document-based discussion and synthesis of learning rooted in multiple sources and formats during their exploration of this particular period in U.S. history.

Selecting Appropriate Documents

For each and all of the scaffolding techniques described above to work, appropriate Web sites for dependent readers' use had to be located and linked. In the mid-to-late 1990s, Paula did this by spending much time using (now antiquated) search engines to find Web sites with appropriate content, then reviewing each in some detail to determine its approximate instructional level. Fortunately, Web-based tools and resources are now available to help us locate and level instructionally appropriate resources for particular curriculum-based units much more expediently.

Probably the most comprehensive of these resources is KidsClick! It was created and is maintained by children's librarians. This subject index and search engine for Web pages contains curriculum-related information used by children in Grades K–7 and is maintained by the Colorado

Let's Find Out About...

Benjamin Franklin

The Man

The Scientist

The Revolutionary

The Autobiography of Benjamin Franklin

The Autobiography of Benjamin Franklin 1706-1757

Benjamin Franklin: A Documented History

Benjamin Franklin: Glimpses of the Man

The Life and Times of Benjamin Franklin

The Electric Ben Franklin

Benjamin Franklin House

An Enlightened American: Benjamin Franklin

Benjamin Franklin Portrait

Benjamin Franklin

Return to Ms. White's Home Page

Teacher Resources for Benjamin Franklin

Readers can choose from three categories to learn more about Ben Franklin: the man, the scientist, and the revolutionary.

Welcome

Who Wants to Be a Pioneer?

Designed by Rob Dent and Paula White
Spring 2000

Fur Traders and Mountain Men

Who Wants To Be a Pioneer: Wagon Train #3

Introduction | Sources | Guiding Questions | Home

Introduction

In 1803, the United States doubled its territory when it bought the land between the Mississippi and the Rocky Mountains from France. The Louisiana Purchase, as this deal was known, opened up an enormous area of land for American settlement. However, until the 1840s, very few Americans were willing to move to this undeveloped and dangerous territory. Most people thought (incorrectly) that this land was unfit for farming, and many were content to just leave it to the Native Americans who were living there.

Others saw a great economic opportunity in this new region. They wanted to use the natural resources which these Western lands provided--in particular, beaver fur. In the early 1800s, beaver fur hats were very fashionable for men in Europe and America. Since there were lots of beaver in the Rocky Mountains, anyone willing to go there and trap them could make a huge profit when they sold the pelts back East.

The fur trade did not take off until the 1820s. Businessmen like John Jacob Astor and William Henry Ashley hired hundreds of men who were willing to venture hundreds of miles away from society to earn their living in the mountains.

These Mountain Men lived year-round in the Rockies, trapping during the Fall and Spring and meeting each summer to trade beaver pelts for food and supplies. Although they were a long way from civilization, most mountain men did not live completely alone. They usually traveled in brigades of 40 to 60 people, and from a base camp separated into groups of two or three. However, the life of the Mountain Man was still a lonely one, as he would live year after year with little contact with the outside world.

Paula divided her students into "wagon trains." Each learning group developed an area of expertise about the U.S. westward expansion in the 19th century.

Who Wants to be a Pioneer?: http://k12.albemarle.org/MurrayElem/White/Frontier/

State Library. KidsClick! is one of the very few Web indexes that allows searching by grade level: specified in this particular resource as up to Grade 2, 3–6, and 7+. It also allows searching for Web pages with varying graphical density: specified as some or no pictures, some pictures, or many pictures. Both of these searchable descriptors are available through the advanced search feature of the Kids-Click! Web site.

Determining Appropriate Reading Levels

How can we determine the reading level of a Web page that's not linked from the KidsClick! page index? Several readability formulas are available. Kathy Schrock has provided a helpful summary of these readability tools, along with clearly written instructions for their use on her Guide for Educators Web site. The page highlights the Fry Readability Scale, but also reminds us that more recent versions of Microsoft Word have a different readability tool—which determines the Flesch-Kincaid Reading Ease score for a text—built in. To use it, copy and paste the text from a Web page into a new Word document, then follow Kathy's simple steps.

Please note, though, that the true readability level of any document is determined by much more than automatically calculated statistics. As teachers, we should always use our knowledge of our students' reading strengths and needs to make the final determination about the appropriateness of a particular Web page—or, in fact, *any* reading passage—for curriculum-based use.

Continuing Good Practice

Long before the term "dependent reader" was introduced into our professional lexicon, learner-centered teachers deduced, through experience and caring, how to systematically scaffold struggling readers' encounters with text. The techniques presented and explained in this article are rooted in those earlier accommodations, yet are keyed to the particular possibilities that Web-based "consuming" and "producing" bring to the 21st century classroom.

In a way, there's nothing new here—great teachers have always focused their attention on their students, accommodating their learning needs and capitalizing on their interests to help them to accomplish curriculum-related goals. Yet with powerful Web-based resources and tools to assist in this ages-old art called teaching, great teachers can harness considerable power and opportunity to serve their students in new and advantageous ways.

Resources

Beers, K. (2002). *When kids can't read: What teachers can do—A guide for teachers 6–12.* Portsmouth, NH: Heineman Press.

Beers, K. (2001). When readers struggle. *Voices from the Middle, 8*(4), 4–5.

Get Carried Away to Canada: http://k12.albemarle.org/MurrayElem/White/Canada/canada.html

KidsClick! Advanced Search: http://sunsite.berkeley.edu/KidsClick%21/search.html

Let's Find Out About Benjamin Franklin: http://k12.albemarle.org/MurrayElem/White/Franklin/home.html

Nielsen, J. (1997). *How users read on the Web*: http://www.useit.com/alertbox/9710a.html

Teacher Helpers—Fry's Readability Graph: Directions for Use: http://school.discovery.com/schrockguide/fry/fry.html

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Judi Harris holds the Pavey Chair in Educational Technology in the School of Education at the College of William & Mary. Her scholarship and service focus on curriculum-based telecomputing, telementoring, and authentic professional development. Judi directs "The Electronic Emissary" (http://emissary.wm.edu), a K–12 curriculum-oriented telementoring service and research effort. She has authored more than 165 articles and 5 books on curriculum-based telecomputing and professional development for teachers in educational technology, most recently Virtual Architecture: Designing and Directing Curriculum-Based Telecomputing, *published by ISTE.*

Paula White, currently Curriculum and Technology Integration Partner and gifted resource teacher at B. F. Yancey Elementary School (Albemarle County Public Schools, Virginia), has worked with computers since her undergraduate years at Virginia Polytechnic Institute and State University in the early 70s. As a kindergarten teacher in the mid-1980s, Paula's students were engaging in e-mail conversations with central office "experts," and she has continued to leverage the students' interest in technology to enhance literacy instruction. Paula is on the board of directors of Virginia's ISTE affiliate (VSTE) and conducts workshops and presentations on issues of technology integration, leadership, and literacy. Paula received her MEd from the University of Virginia, where she serves as a preservice teacher mentor, clinical instructor, and adjunct instructor.

Becky Fisher is the assistant director for Best Practices for Albemarle County Public Schools in Charlottesville, Virginia. As such, she works with principals, teachers, and other instructional leaders to infuse best practices in instruction within the school improvement process. As a classroom teacher, Becky facilitated project-based learning and even consulted with the former Soviet Academy of Sciences on inquiry-based learning. Becky is on the board of directors of Virginia's ISTE affiliate (VSTE) and conducts workshops and presentations on issues of technology integration, leadership and best practices in teaching. She received both a BA and MAT in Physics from the University of Virginia, where she serves as an adjunct instructor.