

## Reading adventures online: Five ways to introduce the new literacies of the Internet through children's literature

Jill Castek

Jessica Bevans-Mangelson

Bette Goldstone

Young people of all ages are turning to the Internet to expand their reading experiences. Deion (pseudonym), a fifth grader, visits a virtual book club website during literacy center time to find out what kids around the world are reading. Here, students discuss their favorite books and recommend new titles to explore. Deion navigates to the discussion board where he sees that *Harry Potter and the Half-Blood Prince* (Rowling, 2005, Scholastic) has three new posts. Rebecca, Oliver, and Mark offer their impressions of the latest in this popular series.

Subject: Harry Potter & the Half-Blood Prince, New Zealand  
Hi,

I just got done reading the latest Harry Potter book this afternoon and came on here. I was surprised to find that no one else had posted anything about it yet! I think the other Harry Potter stories had more suspense and better plots, but this book is much funnier!

What's your opinion?

Rebecca

Subject: Re: Harry Potter & the Half-Blood Prince, Canada  
Hey,

Wow, I thought I was the only one who thought that! I totally agree with you. I didn't enjoy this book as much as I liked the other ones. But I do like how Harry and everyone else are growing up and learning more magic.

I think Harry has to go back to school. All the adventures happen at Hogwarts and if he doesn't go back, how will he learn everything he needs to know? I can't wait until the next book comes out.

Send a reply,

Oliver

Subject: Re: Harry Potter & the Half-Blood Prince, USA

I was a little disappointed that I figured out who the Half Blood Prince was. As soon as you knew where Harry read the name, it was easy to guess. Now we have to wait two years until the next adventure.

Impatiently counting the days,

Mark

Many exciting literacy adventures await our students online. Deion's teacher understands that providing opportunities for students to use the Internet at school helps them develop literacy skills that are important for their future participation in a digital world. She also recognizes that using computers increases students' motivation to read, write, and learn (Becker, 2000). Deion navigates the discussion board as his teacher observes. She is amazed by the critical thinking skills students use as they participate in online exchanges. Providing Internet activities as part of your classroom literature program helps students acquire important new skills and strategies required to take advantage of today's information and communication technologies (ICTs) (Leu, Castek, Henry, Coiro, & McMullan, 2004).

In this column, we explore links between the Internet and children's literature. We begin by defining the term *new literacies* and sharing the important benefits students gain when we make the Internet part of the classroom curriculum. In our discussion of new literacies, we highlight the importance of developing positive dispositions toward using the Internet. We then share five exciting ways to introduce the new literacies of the Internet through children's literature. We are also pleased to present within this column Bette Goldstone's Children's Books That Mirror Techno Text, a discussion of high-quality books that weave together multiple story lines and involve students in applying high-level comprehension strategies online and offline.

## What are new literacies?

The term *new literacies* has many meanings (Gee, 2000; Lankshear & Knobel, 2003; Leu, Kinzer, Coiro, & Cammack, 2004, Street, 2003). We use the term here to describe the new skills, strategies, and dispositions that are required to suc-

cessfully identify important questions, locate information, engage in critical evaluation, synthesize information, and communicate on the Internet (Leu, Kinzer, et al., 2004). New literacies are required for participation in a digital world (International Reading Association, 2001). Although they are not included in the assessments used to measure student growth as a result of the No Child Left Behind Act of 2001 (2002), they are nevertheless vitally important to our students' futures (International ICT Literacy Panel, 2003; Partnership for 21st Century Skills, 2004).

When we use the Internet in our classrooms for teaching and learning, we extend opportunities for all students to acquire these skills and strategies. New literacies build upon the foundational literacies we have always taught in schools. However, new literacies include the new reading, writing, viewing, navigating, and communication skills required by the many ICTs that continually appear in our lives (Leu, Castek, et al., 2004). New literacies are required to search for information on the Internet (Henry, 2006). Navigating within and between websites, anticipating what information might be connected to a hyperlink on any given site, synthesizing information found at different locations, and critically evaluating online resources also require new skills and strategies (Coiro, 2003a, 2003b, 2005). To take full advantage of the Internet's information potential, readers must acquire the new literacies that are needed to use them effectively (Leu, 2002). Fortunately, there are many excellent resources available that encourage, motivate, and support readers as they acquire these new literacies. Visit the resources on the New Literacies page (<http://ctell.uconn.edu/cases/newliteracies.htm>) for practical ideas that are fun and easy to implement.

## Developing positive dispositions toward the Internet

As educators, we aim to engage students in experiences that will inspire a lifelong love of learning. We play a central role in developing and sustaining positive student dispositions toward the Internet and other ICTs. Dispositions are "habits of mind or tendencies to approach and respond to situations in certain ways" (Katz, 1988, p. 30).

They are learned through observation, modeling, and exposure (Noyes, 2004).

Dispositions are influenced by support, enjoyment, and engagement. Students with limited experiences on the Internet have more difficulty developing positive dispositions. Like most of us, they may avoid investing time in the things they do not do well. As a result of negative dispositions toward reading online, students may lose out on opportunities to take full advantage of the rich informational resources available on the Internet. In contrast, the development of positive dispositions toward the Internet and other ICTs is the first step toward acquiring expert Internet skills that can be used to further learning. Students who have acquired positive dispositions are collaborative, constructive, and active in problem solving (Guthrie & Wigfield, 2000). They enjoy reading on the Internet and seek out opportunities to use it to fulfill their learning aims (International ICT Literacy Panel, 2003; Organisation for Economic Cooperation and Development, 2005).

While many students are finding the Internet to be an exciting world (Raine & Hilton, 2005), some teachers continue to be reluctant to embrace new technologies. We hope to encourage you to more fully integrate these new literacies into your classroom by exploring the teaching and learning opportunities in children's literature. It is indeed possible to support students in developing positive dispositions toward the Internet. Fun, engaging, and meaningful online experiences in the classroom help shape positive attitudes and a strong desire to learn to use technology well.

## Why is teaching with the Internet important?

Some scholars believe that the Internet is this generation's defining technology for literacy and learning (Hartman et al., 2005). Roughly 73% of young people ages 12 through 17 in the United States use the Internet regularly to gather information, exchange ideas, and share opinions (Lenhart, Madden, & Hitlin, 2005). Compared with responses collected in 2001, the use of the Internet among today's teens has intensified and broadened (Lenhart et al.). A similar survey reported that 66% of regular Internet users and 49% of nonusers in the

United States believe new communication technologies, including the Internet, have made the world a better place (Lebo, 2004). Also in that survey, 67% of Internet users said they consider the Internet to be an important or extremely important source of information for them (Lebo).

The Internet has become a widespread communication tool used extensively in the workplace. As a result, we are seeing profound changes in the nature of reading and writing taking place there. In just one year (August 2000 to September 2001), use of the Internet at work among employed U.S. adults age 25 and older increased by nearly 60%, from 26.1% of the workforce to 41.7% (U.S. Department of Commerce, 2002). A national survey (Lebo, 2004) reported that 42% of U.S. workers use e-mail every day to gather information and collaborate with others. This growing dependency on networked information makes it a necessity that all students acquire the new literacies that are central to the world of work.

Nations around the world see Internet use as important to their curricular goals. Great Britain's National Grid for Learning [www.ngfl.gov.uk](http://www.ngfl.gov.uk), The Education Network of Australia (EdNA) [www.edna.edu.au/edna/page1.html](http://www.edna.edu.au/edna/page1.html), and Canada's SchoolNet [www.schoolnet.ca/home/e/ict.asp](http://www.schoolnet.ca/home/e/ict.asp) are national efforts aimed at helping teachers make information and communication technologies an integral part of their school curriculum. Take a look at these international sites to gather resources to support your own curriculum changes. In order to compete with students around the world for the jobs of the future, we will need to ensure that students possess the new literacies of Internet technologies and can use them skillfully and effectively.

With the growing number of Internet-connected computers available in schools across the United States, our classrooms are the best places for students to acquire the new literacy skills they will need for participation in the workplaces of the 21st century. As teachers, we have a responsibility to provide students with a wide range of literacy experiences that demonstrate the ways we read and write in our daily lives. Approximately 13% of U.S. students do not have access to the Internet at home (Lenhart et al., 2005). The classroom is the only place these children will learn the skills and strategies required

to take full advantage of the Internet. It is up to us to provide these experiences so that all students are given the tools to succeed in the careers that will define the 21st century.

## Five exciting ways to use the Internet to teach literature

The new literacies for reading, writing, and communicating online can be introduced to students by using the Internet across the curriculum, particularly with children's literature. In this column, we address five exciting ways to bring the Internet into your literature program:

1. *Explore stories on the Web.* Online stories are engaging and interactive literacy tools that motivate readers to explore the world of books while using online tools.
2. *Invite students to become authors on the Web.* Publishing student work on the Internet helps students become more invested in producing quality products they are proud to share.
3. *Participate in virtual book clubs.* Online forums provide a worldwide audience for book discussions that enrich comprehension while exposing students to new perspectives.
4. *Collaborate on Internet projects.* Internet projects get students working collaboratively with others to explore topics of common interest.
5. *Add informational websites to your study of literature.* Informational sites extend content themes found in literature, promote inquiry, and encourage in-depth topic exploration.

The resources and instructional strategies included here are designed to promote the enjoyment of literature while developing the important skills, strategies, and dispositions required for success on the Internet. In the following sections, we explore useful online resources, share our own ideas, and showcase how exceptional teachers use the Internet in their classroom literacy programs.

## Explore stories on the Web

Reading is an adventure that extends the imagination and makes learning fun. Literature exposes children to new worlds filled with heroes, villains, new friends, and new possibilities. McEwan and Egan (1995) explained how stories provide opportunities to embark on explorations of experience from various perspectives. Great books offer opportunities for higher level thinking, character analysis, and rich discussions of the author's message. Stories on the Web build students' understanding of story structures and introduce new opportunities to develop online navigational skills. Connecting stories on the Web with opportunities to explore the Internet is a first step in developing positive dispositions toward technology.

### Online read-alouds

Your students can enjoy exciting works of literature read aloud by actors such as Amanda Bynes, Lou Diamond Phillips, Tia and Tamera Mowery, and Melissa Gilbert in a project by the Screen Actors Guild Foundation. Visit BookPALS Storyline [www.storylineonline.net](http://www.storylineonline.net), an online series of streaming videos where children of all ages can find and appreciate these wonderful stories. This site celebrates classic picture books such as *Knots on a Counting Rope* (Martin & Archambault, 1997), *Thank You, Mr. Falker* (Polacco, 1998), *The Polar Express* (Van Allsburg, 1985), and many others.

Children of all ages enjoy hearing stories read aloud. Books entertain, arouse curiosity, inform, and inspire new interests. Reading aloud to children has additional benefits, which include building listening skills, creating background knowledge, introducing new vocabulary, and making connections between text and life. Not only is reading aloud important for literacy development and learning, but also sharing a book is a bonding experience during which the reader serves as a reading role model for the listener (Trelease, 2001). The Screen Actors Guild Foundation recognizes this influence and capitalizes on it in the creation of the Storyline website (See Figure 1). This site makes read-aloud experiences accessible to students during the school day and also at home. Storyline offers an open invitation to enjoy good books again and again as they are read and performed.

FIGURE 1  
Screen shot of BookPALS Storyline Online

**STORYLINE ONLINE** MADE POSSIBLE BY A GENEROUS GRANT FROM **verizon** [www.verizonreads.net](http://www.verizonreads.net)

**SEASON 2** BRANCHES BOOKFINDER STORYLINE

**NEW! "THE POLAR EXPRESS"**  
HOLIDAY STORY:  
READ BY LOU DIAMOND PHILLIPS

**WELCOME TO STORYLINE ONLINE!**

The [Screen Actors Guild Foundation](#) is proud to bring you **Storyline Online**, an on-line streaming video program featuring SAG members reading childrens books aloud. Hand-picked by [BookPALS](#) National Program Director **Ellen Nathan**, a former teacher and librarian, each of the books on this site offer an accompanying lesson plan and activity guide.

Click on any book on the left or below to get started!

The SAG Foundation thanks [Verizon](#) for their generous underwriting of Storyline Online and is proud to bring the gift of storytelling to millions of children.

This program has been made possible by a waiver from the [Screen Actors](#)

**ACTIVITIES**  
BROUGHT TO YOU BY  
THE SCREEN ACTORS GUILD FOUNDATION  
**Verizon READS**  
AMERICA'S LITERACY CHAMPION  
ABOUT BOOKPALS  
STORYLINE BY PHONE  
LAUNCH EVENT  
PRODUCTION CREDITS

SCREEN ACTORS GUILD FOUNDATION [WWW.SAGFOUNDATION.ORG](http://WWW.SAGFOUNDATION.ORG)

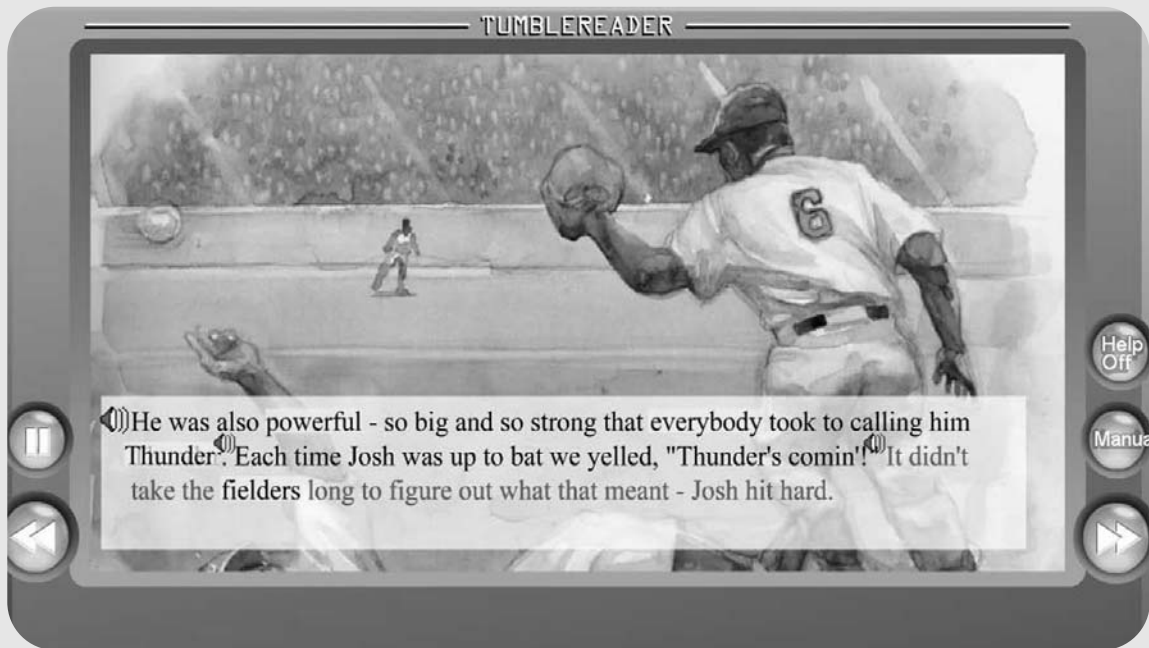
[www.storylineonline.net](http://www.storylineonline.net). Used with permission.

### Interactive read-along stories

The TumbleBook Library is an online collection of animated, talking picture books that kids really love. This collection of interactive, electronic texts can be accessed through participating public library sites such as the branch in Sunnyvale, California, <http://sunnyvale.ca.gov/Departments/Library/ebooks.htm> or from the TumbleBook Library's main page at [www.tumblebooks.com](http://www.tumblebooks.com) (see Figure 2). Don't miss out on these entertaining interactive stories.

Electronic texts such as these provide opportunities for learners to become familiar with stories in a new format. The Internet has made it possible to transform traditional oral and print stories by adding graphics, sound, animation, and video to create interactive texts. In Matthew's 1996 study (as cited in Chen, Ferdig, & Wood, 2003), electronic storybooks yielded higher reading comprehension for pairs of children who used them compared to those who read traditional print versions of the same story. Animated illustrations and

**FIGURE 2**  
Screen shot of *Coming Home: A Story of Josh Gibson* by Nanette Mellage,  
from the TumbleBook Library's collection



Visit TumbleBooks at [www.tumblebooks.com](http://www.tumblebooks.com) or the Sunnyvale Public Library site (<http://sunnyvale.ca.gov/Departments/Library/ebooks.htm>) and follow the link to TumbleBook Library. Used with permission.

high-quality voice-overs make stories on the Web not only engaging but also beneficial to emerging and struggling readers.

TumbleBooks offer digital features that foster strategies for decoding, fluency, and comprehension. For example, students can read along with the text's electronic voice to practice proper phrasing and fluency. As the voice reads, the text automatically changes color, helping the reader to track the words. The word-helper feature allows students to click on specific words to have them sounded out or spoken. All texts are available in three languages (English, Spanish, and Chinese) for students who are acquiring English or building biliteracy skills.

The animated graphics and quality narratives at Mythic Journeys (<http://mythicjourneys.org/bigmyth/index.htm>) will engage your intermediate-grade students in online story adventures. Those in the primary grades will appreciate the Storybook Web [www.ltscotland.org.uk/storybook](http://www.ltscotland.org.uk/storybook) and the

read-along songs and stories on the RIF Reading Planet website at [www.rif.org/readingplanet/content/read\\_aloud\\_stories.msp](http://www.rif.org/readingplanet/content/read_aloud_stories.msp). At these sites, students can listen to stories read aloud, play games, and learn about an author's writing process. These sites make great classroom center activities. By taking advantage of the wealth and variety of books available on the Internet, kids will never run out of stories to enjoy.

### Storybooks on the Web

At a time when book budgets are limited, the Internet offers a wide variety of free texts to students in and out of the classroom. Digital texts encourage reading by offering a variety of book choices at the click of a button. The International Children's Digital Library (ICDL) at the University of Maryland ([www.icdlbooks.org](http://www.icdlbooks.org)) offers 820 books online in nine languages. The ICDL examines the relationship between children's access to

a digital collection of multicultural materials and children's attitudes toward books, libraries, reading, technology, and other countries and cultures. Combining the Internet with children's literature enables students to develop a richer understanding of the many different cultural experiences in the world, preparing them to take advantage of the important benefits that exposure to diversity provides (Leu, Castek, et al., 2004).

## Invite students to become authors on the Web

### Digital storytelling

A new literature experience is emerging on the Internet—the genre of the digital story. Some schools in Kentucky have found an innovative way for students to become online authors while learning 21st-century communication skills. Through digital storytelling, learners of all ages have proudly published their personal stories on the Web. The creation of personal narratives teaches students the writing process while instilling a sense of pride in their accomplishments. To create a digital story, students begin by writing. Once the narrative is constructed, illustrations are created, voice recordings are added, and digital photos are incorporated. The final product is published as a QuickTime movie that can be posted on the Internet. Digital storytelling turns each student into an instant biographer and published author. The Scott County Student Digital Storytelling site at [www.scott.k12.ky.us/technology/digitalstorytelling/studentstories.html](http://www.scott.k12.ky.us/technology/digitalstorytelling/studentstories.html) will provide you with many new ideas for bringing new literacies into your classroom. In addition to sparking interest in writing, this site is a great place for students to read and enjoy new online book forms. The digital storytelling site at <http://electronicportfolios.com/digistory> will guide you in learning how to begin teaching this unique literary genre.

### Publishing student work

One of the most powerful ways of encouraging student involvement in Internet activities is to publish their responses to literature online. Many teachers have taken advantage of this powerful

strategy to increase engagement in writing. Works such as poetry and art can be easily showcased on the Internet and made available to a wide audience of peers, families, and readers around the world. Internet publishing prompts students to put thought and effort into their assignments. Revising and editing become more palatable.

Third graders at one Kentucky elementary school are proud of their extension of Margaret Wise Brown's *The Important Book* (1990, Harper Trophy). They used this popular text as a model for their online story *The Important Book of Simple Machines* at [www.montgomery.k12.ky.us/Camargo/Projects/simplemachines/simplemachines.htm](http://www.montgomery.k12.ky.us/Camargo/Projects/simplemachines/simplemachines.htm). The various linked pages not only explain how simple machines work but also feature digital pictures of students demonstrating them. View the links on the left to learn about levers, inclined planes, wedges, screws, pulleys, and more. These third graders also collected follow-up activities and science labs to offer more opportunities for readers to explore simple machines. Publishing student work online encourages the writing process and provides a way for students to receive comments from readers other than their teacher.

### Additional resources

Scholastic's Writing With Writers <http://teacher.scholastic.com/writewit> and Children's Story Online [www.childrenstory.com/stories/index.htm](http://www.childrenstory.com/stories/index.htm) are useful resources students will enjoy. Both sites get them thinking and working with other student authors around the world. Through participation, students learn to make connections between reading and writing that deepen their appreciation of the author's craft. As students share their stories and other writings on the Internet, they are bound to develop increasingly positive dispositions for contributing to the body of information the Web contains.

## Participate in virtual book clubs

Virtual book clubs are forums set up for students to exchange ideas on discussion boards. Here, students write to a wide audience about the books that are important to them. Keeping in touch with others near and far through e-mail exchanges encourages new literacy opportunities and introduces students to today's ICTs. Sending messages around

the world helps students develop reading, writing, and communication skills that are an important part of their daily lives. Such communication also enriches cultural understanding by teaching students to appreciate diverse points of view.

### **E-mail discussion boards**

The ePals Book Club ([www.epals.com/projects/book\\_club](http://www.epals.com/projects/book_club)) provides a discussion forum for students to post comments, questions, and perspectives on their favorite books. Some teachers shy away from class e-mails because they do not have “control” of what is being said and sent. ePals addresses that concern by offering free accounts that can be easily monitored by the teacher. Discussion posts can be exchanged class to class or student to student. (See the ePals teacher project site for directions on how to pair up with a partner class.)

Book Raps ([http://rite.ed.qut.edu.au/old\\_oz\\_teachernet/projects/book-rap/index1.html](http://rite.ed.qut.edu.au/old_oz_teachernet/projects/book-rap/index1.html)), based in Australia, is a do-not-miss site for those looking to participate in online book discussions conducted via e-mail. Individuals or groups of students from across Australia and around the world are invited to discuss the scheduled books offered on this site.

The Spaghetti Book Club at [www.spaghettibookclub.com](http://www.spaghettibookclub.com) is a discussion forum set up like a clubhouse. Here, students or classes can post book reviews, comment on what they are reading, and exchange ideas about their favorite books. Provocative questions raised in posts spark ideas that promote text analysis and encourage students to think critically.

### **Online book reviews**

The Germantown Academy Super Readers at [www.germantownacademy.net/Library/InfoManage/Guide.asp?FolderID=2835](http://www.germantownacademy.net/Library/InfoManage/Guide.asp?FolderID=2835) have posted over 1,000 book reviews online. Their student-friendly site aims to help children everywhere make great reading choices. Here, your students can find honest appraisals of books, written *by kids for kids*. This amazing online collection speaks to the power of what can be accomplished when a community of highly engaged readers and writers uses the Internet to encourage an appreciation of literature.

Scholastic’s Share What You’re Reading site (<http://teacher.scholastic.com/activities/swyar>)

makes crafting book reviews fun. Organized by genre and grade level, the site provides easy-to-use tools for students to find books of interest to them. Students can also go to the “write a review” part of the site to tell others about a book they liked. Those who need writing support can follow the link for tips on how to write quality book reviews. For additional reading suggestions, take a look at the link to today’s popular books and authors.

### **Literature extension projects**

Literature extension projects are a great place to gather new ideas. Visit [www.redmond.k12.or.us/patrick/renz/bookprojects.htm](http://www.redmond.k12.or.us/patrick/renz/bookprojects.htm) to see some examples. These literature extensions offer excellent alternatives to book reports. Heather Renz designed the extension projects and posted student examples that demonstrate the many ways children can creatively appreciate literature. An extension project friendly to readers in primary grades can be found at First Grade, First Grade What Do You See? ([www.district87.org/oakland/brownbear](http://www.district87.org/oakland/brownbear)). This site highlights the reading enthusiasm experienced with Bill Martin, Jr.’s book *Brown Bear, Brown Bear, What Do You See?* (1992, Holt, Rinehart and Winston). The excitement can hardly be contained on these webpages.

Teaching students how to read and write on the Internet helps strengthen traditional literacy skills while also introducing new elements that are unique to online communication (Castek, 2004a). Writing succinctly in the rapid back-and-forth manner common to online exchanges can be difficult for even the most proficient writer, yet these skills are essential for success in today’s collaborative workplaces. Reading and writing e-mail, for example, increases the speed at which ideas can be shared and widely disseminated. Teaching students how to communicate online exposes them to language constructs and etiquette common to the Web (Castek, 2004b).

### **Collaborate on Internet projects**

Internet projects are partnerships between classes in different locations formed to solve a common problem or explore a common topic. Participating in Internet projects helps children acquire the collaborative problem-solving, information,



and communication skills they will use when they enter the world of work (Leu, 2001; Leu, Leu, & Coiro, 2004).

### Preservice teacher/student collaborations

Many successful Internet projects have taken place around the celebration of great books. A Series of Unfortunate Collaborations at <http://comsewogue.org/~silverman/snicket> paired graduate and middle school students to exchange ideas about Lemony Snicket's *The Bad Beginning* (1999, HarperCollins). Visit the online resources for activities that extend the first book in the Series of Unfortunate Events collection.

### Class-to-class collaborations

First- and second-grade classes used *The Important Book* (Brown, 1990, HarperTrophy) as a model for their My Town Is Important project [www.mrsmcgowan.com/town/about2003.htm](http://www.mrsmcgowan.com/town/about2003.htm). Participating classes around the world described what was important about their town by researching facts on the Internet. Visit the student showcase link and click on the individual states and counties to see the variety of ways students extended Brown's classic text. Locating projects and classes to collaborate with is as easy as checking out the following three links.

1. Kidlink—Hooked on books <http://65.42.153.210/kidspace/start.cfm?HoldNode=898>
2. Internet projects—Student-to-student and class-to-class exchanges [www.schoolworld.asn.au/projects.html](http://www.schoolworld.asn.au/projects.html)
3. E-pals Internet projects [www.epals.com/resources/online/internet\\_projects.tpl](http://www.epals.com/resources/online/internet_projects.tpl)

## Incorporate informational websites with your study of literature

The Internet transports readers to new places to investigate firsthand accounts, primary source documents, and other resources. Informational websites do a great job of extending themes found in literature and help readers make connections to new content. Many sites for children not only offer text but also feature images, videos, animations,

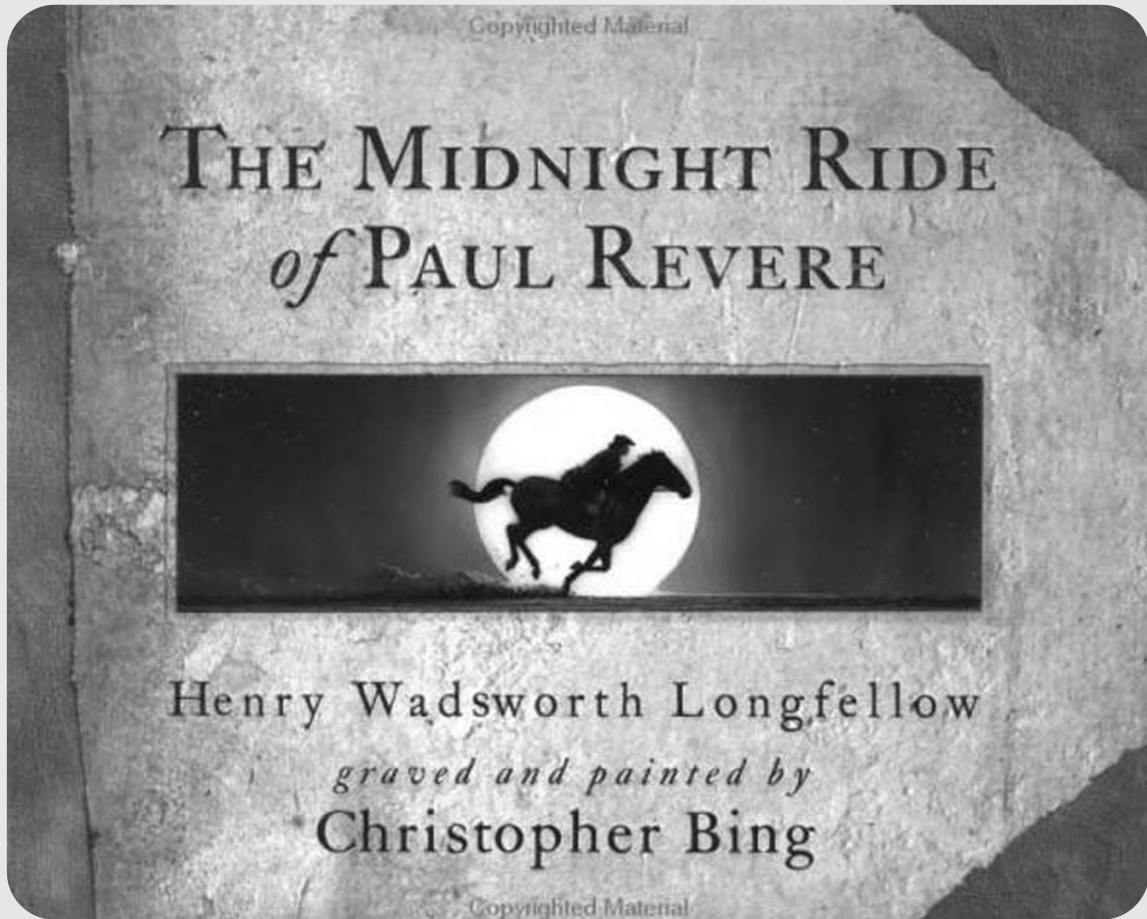
and sound files. Depending on the content being investigated, the possibilities are infinite.

### Pairing texts with informational websites

Texts and Internet companion pieces connect information resources that enhance the entire reading experience. Take, for example, the *How I Spent My Summer Vacation* site at [www.montgomery.k12.ky.us/Camargo/students/reading/series/vacation.htm](http://www.montgomery.k12.ky.us/Camargo/students/reading/series/vacation.htm). This resource helps students learn Wild West vocabulary introduced in Mark Teague's imaginative story *How I Spent My Summer Vacation* (1997, Dragonfly Books). Designed with a third-grade reader in mind, this site features informational links to cowboy and rodeo history as well as facts about buckaroos and the geography of the plains of the western United States. As Wallace, the main character in the text, describes being captured by cowboys who teach him all their tricks, we picture ourselves being transported, through sound and photo displays accessed from this website, to a ranch where cowboys wrangle their herds. The Internet offers new resources that help us to capitalize on the rich content connections that can be made with this book while also inviting further reading. Links to the National Cowboy & Western Heritage Museum site at [www.nationalcowboymuseum.org](http://www.nationalcowboymuseum.org) and the America's Story Buckaroo site at [www.americaslibrary.gov/cgi-bin/page.cgi/sh/cowboy](http://www.americaslibrary.gov/cgi-bin/page.cgi/sh/cowboy) inspire students to question, inquire, and explore.

Explore the website *Midnight Rider: A Paul Revere Virtual Museum* at [www.cvesd.k12.ca.us/finney/paulvm/\\_welcomepv.html](http://www.cvesd.k12.ca.us/finney/paulvm/_welcomepv.html) before reading *The Midnight Ride of Paul Revere* (Longfellow, 2001, Handprint Books). This book (see Figure 3) celebrates Henry Wadsworth Longfellow's epic poem with engravings and original paintings by Christopher Bing. The text is factual, explaining what is correct and incorrect about the classic poem. Its visual display of artifacts and illustrations makes it a standout among children's literature favorites. The text incorporates letters recounting the midnight ride, and the other artifacts help readers imagine life in Paul Revere's time. After exploring, readers walk away with a better understanding of the events as they happened. While the Internet site provides the historical context of this

**FIGURE 3**  
Book cover, *The Midnight Ride of Paul Revere* by Henry Wadsworth Longfellow,  
engraved and illustrated by Christopher Bing



Used with permission.

important period in U.S. history, the text provides opportunities for teaching a critical stance.

Bringing literature to life in the classroom inspires further independent reading and information gathering. To this end, the Internet is the perfect place to turn. By pairing Internet and text reading, students are invited to make connections between topics. For more examples of these kinds of connections, see Table 1.

A sixth-grade teacher in Duluth, Minnesota, used the comprehensive instructional resources on Web Inquiry Projects by San Diego State University (<http://edweb.sdsu.edu/wip>) to help stu-

dents design their own Western Immigration inquiries (<http://edweb.sdsu.edu/wip/examples/westward/index.htm>). She paired this project with *Children of the Dust Bowl: The True Story of the School at Weedpatch Camp* by Jerry Stanley (1992, Knopf Books for Young Readers). This book tells of the formidable hardships of the “Okies” as they worked their way to California during the 1930s. Through moving descriptions and firsthand accounts, readers feel the desperation the Okies faced in the Midwest. Hardships continued as they journeyed westward toward the promise of work in California, where eventually their hopes were

**TABLE 1**  
**A listing of children's literature books that can form units in conjunction with the titles listed in the article**

Good books for a unit on the Depression  
 Booth, D. (1997). *The dust bowl*. Toronto, ON: Kids Can Press. ISBN 1550742957.  
 Koller, J.F. (1991). *Nothing to fear*. New York: Gulliver. ISBN 0152575820.  
 Peck, R. (2000). *A year down yonder*. New York: Dial. ISBN 0803725183.  
 Ray, D. (2003). *Ghost girl: A Blue Ridge mountain story*. New York: Clarion. ISBN 0618333770.  
 Stewart, S. (1997). *The gardener*. New York: Farrar Straus Giroux. ISBN 0374325170.  
 Taylor, M. (1991). *Roll of thunder, hear my cry*. New York: Puffin. ISBN 014034893X.  
 Turner, A. (1995). *Dust for dinner*. New York: HarperCollins. ISBN 0060233761.

Good books for a unit on summer vacation  
 Brashares, A. (2001). *The sisterhood of the traveling pants*. New York: Delacorte Books for Young Readers. ISBN 0385730586.  
 Martinez, A. (2004). *Poe Park*. New York: Holiday House. ISBN 0823418340.  
 Paulsen, G. (1994). *Harris and me: A summer remembered*. Orlando, FL: Harcourt. ISBN 0152928774.  
 Rawls, W. (1976). *Summer of the monkeys*. New York: Yearling. ISBN 0440415802.  
 Rylant, C. (1985). *The relatives came*. New York: Aladdin. ISBN 0689717385.

Good books for a unit on the Wild West  
 Davis, K.C. (2003). *Don't know much about the pioneers*. New York: HarperCollins. ISBN 0060286172.  
 Freedman, R. (1983). *Children of the Wild West*. Clarion Books. ISBN 0395547857.  
 Hopkins, B. (2000). *My America: A poetry atlas of the United States*. New York: Simon & Schuster. ISBN 0689812477.  
 Pinkney, A.D. (1996). *Bill Pickett: Rodeo-ridin' cowboy*. Orlando, FL: Voyager Books. ISBN 0152021035.

dashed. The sixth-grade teacher uses the Dust Bowl Days resource guide at [http://edsitement.neh.gov/view\\_lesson\\_plan.asp?id=300](http://edsitement.neh.gov/view_lesson_plan.asp?id=300), a portal developed by the MarcoPolo Foundation, to bring to life primary source documents such as photographs, song lyrics, and firsthand accounts. Using these incredible resources, students can extend their personal inquiries in a new direction.

Scholastic's Flashlight Readers page at [http://teacher.scholastic.com/activities/flashlight\\_readers/flashT\\_landingPage.asp](http://teacher.scholastic.com/activities/flashlight_readers/flashT_landingPage.asp) contains a Great Depression Historical Journal companion for *Esperanza Rising* by Pam Muñoz-Ryan (2002, Blue Sky Press). This book describes a Mexican girl's fall from riches and her immigration to California in the 1930s. The Flashlight Readers website provides interactive features that connect readers to valuable resources that extend students' background knowledge.

### Online encyclopedias

The Internet offers quick access to large amounts of new information. *E-encyclopedia* (2003, Dorling Kindersley) is a powerful resource for teaching students how to search for information on the Internet. This book, together with the companion website [www.dke-encyc.com](http://www.dke-encyc.com), capitalizes on the features of a traditional encyclopedia while also offering access to animations, videos, sound buttons, virtual tours, interactive quizzes, databases, timelines, and real-time reports. Created in partnership with Google ([www.google.com](http://www.google.com)), the e-encyclopedia teaches students how to avoid the pitfalls of inaccurate information. By being guided to the most appropriate sites, students gain easy access to the best information resources the Web has to offer. Grouped thematically in nine subject areas, topics of interest are easy for students to locate.

Articles in the book explain key facts and also display a keyword to input on the companion website. What results are a handful of student-friendly sites that provide additional information on a topic. For example, inputting the keyword *space* from page 10 in the book yields the following results:

- How big is space,
- A history of space exploration,
- Satellite photographs of stars, planets, and galaxies,
- An astronomy timeline and related links you might find useful.

The site also has a sidebar that provides search tips for using Google.

The book and companion site offer exciting new resources for finding information while supporting the development of searching skills.

## CHILDREN'S BOOKS THAT MIRROR TECHNO TEXTS

Bette Goldstone

"Think left and think right/and think low and think high," wrote Dr. Seuss in *Oh, The THINKS You Can Think* (first published in 1975). This is very wise advice for comprehending digital text and images, for traditional book comprehension skills are only a part of the skills repertoire today's students need. Literacy in hyperspace also requires understanding nonlinear text structure, taking on responsibilities of coauthoring—deciding what will be read, and in what order, and visually understanding the multiple screens (or spatial planes) and their interconnections. These literacy characteristics are not, however, solely relegated to screen-based texts. A form of children's book that has been emerging since the 1970s also uses these patterns. Sometimes called "postmodern," these books—which are becoming more prevalent each day—are nonlinear, require involved coauthoring on the part of the reader, and may have multiple spatial planes in the illustrations. Our students have to approach "technology text" and "postmodern text" thinking and viewing from high and low, right and left. They need to use skills that make them adept at being active coauthors and at maneuvering nonlinear texts and multiple spatial planes.

Explicit teaching, however, must occur. Every student is not necessarily comfortable or initially capable of using the latitude nonlinear texts offer. Deciding what to read on the page or screen, and in what sequence, and how to comprehend the seemingly disparate elements can be very confusing. Postmodern books can become a teaching tool to make transparent the needed thinking skills. Reading aloud a storybook quickly creates a shared experience and sense of community—computer use can be isolating. Books don't evaporate in cyberspace like some hyperlinks or websites—they are concrete, so they can easily be referred to again and again. Reading aloud books and investigating pictures as a group takes time—book time is slower than computer time and is thus easier to think about and reflect upon. These books also provide another venue for students to reshape, extrapolate, and apply important comprehension skills. Practicing skills in multiple contexts enhances and intensifies the learning experience.

Books with multiple story lines (told through words or illustrations) are excellent for understanding nonlinearity. The following are examples of such books:

- Burningham, J. (1978). *Time to get out of the bath, Shirley*. Ill. by the author. New York: Crowell.
- Browne, A. (1992). *Zoo*. Ill. by the author. New York: Knopf.
- Cherry, L. (1996). *The armadillo from Amarillo*. Ill. by the author. San Diego, CA: Harcourt Brace.
- Martin, J.B. (1999). *Snowflake Bentley*. Ill. M. Azarian. New York: Scholastic.
- Oppenheim, J. (1994). *Floriarium*. Ill. S. Schindler. New York: Bantam.
- Macauley, D. (1999). *Shortcut*. Ill. by the author. New York: Houghton Mifflin.
- Pullman, P. (1989). *Spring-heeled Jack*. Ill. D. Mostyn. New York: Knopf.
- Sís, P. (1996). *Starry messenger*. Ill. by the author. New York: HarperCollins.

Books that contain multiple voices, like multiple story lines, also provide greater insights and sensitivity to nonlinear texts. These also require coauthoring from the reader because connections are not explicitly apparent. The following are examples of these:

- Atkin, S.B. (2001). *Voices from the fields: Children of migrant farmworkers tell their stories*. Ill. with photos. New York: Scholastic.
- Avi. (1993). *Nothing but the truth: A documentary novel*. New York: Morrow/Avon.
- Browne, A. (1998). *Voices in the park*. Ill. by the author. New York: Dorling Kindersley.
- Creech, S. (2000). *The wanderer*. New York: Scholastic.
- Danzinger, P., & Martin, A.H. (2000). *Snail mail no more*. New York: Scholastic.
- Goldschmidt, J. (2005). *The secret blog of Raisin Rodriguez*. New York: Penguin.
- Hesse, K. (2001). *Witness*. New York: Scholastic.
- Konigsburg, E.L. (1999). *The view from Saturday*. New York: Scholastic.
- Sís, P. (2000). *Madenka*. Ill. by the author. New York: Frances Foster.

Modern illustrators have been playing with multiple spatial plans, which make intriguing images and allow for interesting explorations of space and time. The following are examples of these:

- Banyai, I. (1995). *Zoom*. Ill. by the author. New York: Viking.
- Lehman, B. (2004). *The red book*. Ill. by the author. Boston: Houghton Mifflin.
- Lyon, G.E. (1996). *A day at Damp Camp*. Ill. P. Catalanotto. New York: Orchard.
- Raschka, C. (1997). *Mysterious Thelonious*. Ill. by the author. New York: Orchard.
- Rathmann, P. (1995). *Officer Buckle and Gloria*. Ill. by the author. New York: Putman.

(continued)

## CHILDREN'S BOOKS THAT MIRROR TECHNO TEXTS (continued)

- Sneed, B. (2002). *Picture a letter*. Ill. by the author. New York: Fogelman.
- Wiesner, D. (2001). *The three pigs*. Ill. by the author. New York: Scholastic.
- Yorinks, A. (1986). *Hey, Al*. Ill. R. Egjelski. New York: Farrar Straus Giroux.

Nontraditional postmodern children's books allow students to practice necessary comprehension skills. More important, they offer exciting new investigations into literary formats that resemble technology text but are unique unto themselves. They demonstrate that story structure is flexible and dynamic and that, similar to digital text, it will continue to be reconfigured and reimaged in the future.

Teachers can use these resources to help students more easily navigate the best sites on the Web and in the process learn how search engines work. This great resource has many pluses, but it also has one drawback: Students can only use keywords printed in the book to search on the website for the specially selected links. Nevertheless, the broad topic areas on the site link students to many topics to explore. This type of supportive e-encyclopedia is a useful resource for students and teachers alike.

### Continuing the adventure

Deion, the fifth grader introduced at the beginning of this column, composes his message and considers the worldwide audience that it will reach. He applies the e-mail writing strategies his teacher has taught in class to craft a concise message that conveys his ideas clearly. He carefully reads and reorganizes his thoughts before posting them on the discussion board. As his teacher observes Deion composing his response, she thinks about how interdependent the processes of reading and writing are on the Internet. As readers and writers exchange information, they are simultaneously reading and writing as their online conversations unfold. She takes a few notes in preparation for a think-aloud lesson she'll introduce tomorrow and marks several posts on the ePals Book Club website [www.epals.com/tools/forum/forum.e?bo=53](http://www.epals.com/tools/forum/forum.e?bo=53) to point to as examples of effective online communication.

Subject: Re:Harry Potter & the Half-Blood Prince, USA  
Greetings Harry Potter Fans,

I'm eagerly waiting for the next book in the series, for which I have many expectations. In the next adventure,

I believe Professor Minerva McGonagall will become headmistress of Hogwarts School, if it opens again.

Hope to hear back from anyone else with views on this message,

Deion

Like Deion, you will discover new tools and learn important new skills and strategies as you journey through the Internet. Building the Internet into your classroom literacy program makes learning enjoyable. Create opportunities for students to explore stories on the Web, participate in virtual book clubs, collaborate on Internet projects, design responses to literature, and learn from informational websites. When students are involved in Internet use for learning in class, they have special opportunities to acquire other new literacies as well. While traditional literacy skills continue to be a necessary foundation for students, the new literacies required for Internet use must also be taught if we intend to teach students to read, write, and communicate online effectively (Garner & Gillingham, 1996; Leu, Leu, & Coiro, 2004; Tao & Reinking, 2000). As students take advantage of these online opportunities, positive dispositions will develop toward technology, fostering motivation, engagement, and a lifelong love of reading. As we begin to use the Internet for teaching and learning, we open the door for students to acquire new literacies for reading, writing, communicating, and collaborating online. These skills increase opportunities for all students to participate in a growing high-tech workforce. We are instrumental in helping our students to develop the new skills and strategies that are important to learning now and essential for participation in an information-centered world. At the same time, we make

great strides in helping *all* students become fully literate.

**Castek is a doctoral student at the University of Connecticut, Storrs, and Bevans-Mangelson teaches at Brigham Young University, Provo, Utah.**

## References

- Becker, H.J. (2000). Pedagogical motivations for student computer use that lead to student engagement. *Educational Technology*, 40(5), 5-17. Retrieved October 2, 2005, from [http://www.crito.uci.edu/tlc/findings/spec\\_rpt\\_pedagogical/ped\\_mot\\_pdf.pdf](http://www.crito.uci.edu/tlc/findings/spec_rpt_pedagogical/ped_mot_pdf.pdf)
- Castek, J. (2004, October). *Writing across time and space: New literacies and online communication*. Iowa Technology and Education Connection Conference, Des Moines, IA.
- Castek, J. (2004, November). *Internet applications for writing: Composing, communicating, and publishing in online contexts*. Connecticut Reading Association Conference, Cromwell, CT.
- Chen, M., Ferdig, R., & Wood, A. (2003). Understanding technology-enhanced storybooks and their roles in teaching and learning: An investigation of electronic storybooks in education. *The Journal of Literacy and Technology*, 3. Retrieved September 28, 2005, from <http://www.literacyandtechnology.org/v3n1/chenferdigwood.htm>
- Coiro, J. (2003a). Rethinking comprehension strategies to better prepare students for critically evaluating content on the Internet. *The NERA Journal*, 39(2), 29-34.
- Coiro, J. (2003b). Reading comprehension on the Internet: Expanding our understanding of reading comprehension to encompass new literacies [Exploring Literacy on the Internet department]. *The Reading Teacher*, 56, 458-464. Retrieved November 1, 2005, from [http://www.readingonline.org/electronic/elec\\_index.asp?HREF=/electronic/rt/2-03\\_Column/index.html](http://www.readingonline.org/electronic/elec_index.asp?HREF=/electronic/rt/2-03_Column/index.html)
- Coiro, J. (2005). Making sense of online text. *Educational Leadership*, 63(2), 30-35.
- Garner, R., & Gillingham, M.G. (1996). *Internet communication in six classrooms: Conversations across time, space and culture*. Mahwah, NJ: Erlbaum.
- Gee, J.P. (2000). Teenagers in new times: A new literacy studies perspective. *Journal of Adolescent & Adult Literacy*, 43, 412-420.
- Guthrie, J.T., & Wigfield, A. (2000). Engagement and motivation in reading. In M.L. Kamil, P.B. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 403-422). Mahwah, NJ: Erlbaum.
- Hartman, D., Fogarty, E., Coiro, J., Leu, D.J., Jr., Castek, J., & Henry, L.A. (2005, December). *New literacies for learning*. Symposium presented at the 55th annual meeting of the National Reading Conference, Miami, FL.
- Henry, L.A. (2006). SEARCHing for an answer: The critical role of new literacies while reading on the Internet. *The Reading Teacher*, 59,
- International ICT Literacy Panel. (2003). *Digital transformation: A framework for ICT literacy*. Princeton, NJ: Educational Testing Service. Retrieved December 15, 2004, from <http://www.ets.org/Media/Research/pdf/ICTREPORT.pdf>
- International Reading Association. (2001). *Integrating literacy and technology in the curriculum* (Position statement). Retrieved December 12, 2005, from [http://www.reading.org/downloads/positions/ps1048\\_technology.pdf](http://www.reading.org/downloads/positions/ps1048_technology.pdf)
- Katz, L.G. (1988, Summer). What should young children be doing? *American Educator*, 28-45.
- Lankshear, C., & Knobel, M. (2003). *New literacies: Changing knowledge in the classroom*. Buckingham, England: Open University Press.
- Lebo, H. (2004). *Surveying the digital future, year four: Ten years ten trends*. Los Angeles: UCLA Center for Communication Policy. Retrieved November 1, 2005, from <http://www.digitalcenter.org/downloads/DigitalFutureReport-Year4-2004.pdf>
- Lenhart, A., Madden, M., & Hitlin, P. (2005). *Teens and technology*. Washington, DC: Pew Internet and American Life Project. Retrieved November 2, 2005, from [http://www.pewinternet.org/pdfs/PIP\\_Teens\\_Tech\\_July2005\\_web.pdf](http://www.pewinternet.org/pdfs/PIP_Teens_Tech_July2005_web.pdf)
- Leu, D.J., Jr. (2001). Internet project: Preparing students for new literacies in a global village. *The Reading Teacher*, 54, 568-585. Retrieved November 2, 2005, from [http://www.readingonline.org/electronic/elec\\_index.asp?HREF=/electronic/RT/3-01\\_Column/index.html](http://www.readingonline.org/electronic/elec_index.asp?HREF=/electronic/RT/3-01_Column/index.html)
- Leu, D.J., Jr. (2002). The new literacies: Research on reading instruction with the Internet. In A.E. Farstrup & S.J. Samuels (Eds.), *What research has to say about reading instruction* (3rd. ed., pp. 310-336). Newark, DE: International Reading Association.
- Leu, D.J., Jr., Castek, J., Henry, L., Coiro, J., & McMullan, M. (2004). The lessons that children teach us: Integrating children's literature and the new literacies of the Internet. *The Reading Teacher*, 57, 496-503.
- Leu, D.J., Jr., Kinzer, C.K., Coiro, J., & Cammack, D. (2004). Toward a theory of new literacies emerging from the Internet and other information and communication technologies. In R.B. Ruddell & N. Unrau (Eds.), *Theoretical models and processes of reading*, (5th ed., 1570-1613). Newark, DE: International Reading Association. Retrieved November 2, 2005, from [http://www.readingonline.org/newliteracies/lit\\_index.asp?HREF=/newliteracies/leu](http://www.readingonline.org/newliteracies/lit_index.asp?HREF=/newliteracies/leu)
- Leu, D.J. Jr., Leu, D.D., Coiro, J. (2004). *Teaching with the Internet: New literacies for new times* (4th ed.) Norwood, MA: Christopher Gordon.
- McEwan, H., & Egan, K. (Eds.). (1995). *Narrative in teaching, learning, and research*. New York: Teachers College Press.

- No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat 1425 (2002). Retrieved October 1, 2005, from <http://www.ed.gov/nclb/overview/intro/index.html>
- Noyes, D. (2004). Developing the disposition to be a reader: The educator's role. In D. Rothenburg (Ed.), *Issues in early childhood education: Curriculum, teacher education and the dissemination of information. Proceedings of the Lillian Katz Symposium, November 5-7, 2000* (pp. 313-317). Retrieved October 2, 2005, from <http://ceep.crc.uiuc.edu/pubs/katzsym/noyes.html>
- Organisation for Economic Co-operation and Development. (2005). *Learning a living: First results of the adult literacy and life skills survey*. Ottawa, ON: Statistics Canada; Paris: Author.
- Partnership for 21st Century Skills. (2004). *Learning for the 21st century*. Washington, DC: Author. Retrieved December 12, 2005, from [www.21stcenturyskills.org/reports/learning.asp](http://www.21stcenturyskills.org/reports/learning.asp)
- Rainee, L., & Hilton, P. (2005). *The Internet at school*. Washington, DC: Pew Internet & American Life Project. Retrieved September 15, 2005, from [http://www.pewinternet.org/pdfs/PIP\\_Internet\\_and\\_schools\\_05.pdf](http://www.pewinternet.org/pdfs/PIP_Internet_and_schools_05.pdf)
- Street, B. (2003). What's "new" in New Literacy Studies? Critical approaches to literacy in theory and practice. *Current Issues in Comparative Education*, 5(2). Retrieved October 2, 2005, from <http://www.tc.columbia.edu/cice/articles/bs152.htm>
- Tao, L., & Reinking, D. (2000). Issues in technology: E-mail and literacy education. *Reading and Writing Quarterly*, 16, 169-174.
- Trelease, J. (2001). *The read-aloud handbook* (5th ed.). New York: Penguin.
- U.S. Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration. (2002). *A nation online: How Americans are expanding their use of the Internet*. Washington, DC: Authors. Retrieved November 3, 2005, from <http://www.ntia.doc.gov/ntiahome/dn/anationonline2.pdf>
- Children's books cited**
- Brown, M.W. (1990). *The important book*. Ill. L. Weisgard. New York: HarperTrophy. ISBN 0064432270.
- E-encyclopedia* (2003). New York: Dorling Kindersley. ISBN 0789498693.
- Longfellow, H.W. (2001). *The midnight ride of Paul Revere*. Ill. C. Bing. New York: Handprint. ISBN 1929766130.
- Martin, B., Jr. (1992). *Brown bear, brown bear, what do you see?* Ill. E. Carle. New York: Holt, Rinehart and Winston. ISBN 0805017445.
- Martin, B., Jr. & Archambault, J. (1997). *Knots on a counting rope*. Ill. T. Rand. New York: Henry Holt. ISBN 0805054790.
- Muñoz-Ryan, P. (2002). *Esperanza rising*. New York: Blue Sky Press. ISBN 043912042X.
- Polacco, P. (1998). *Thank you, Mr. Falker*. New York: Philomel. ISBN 0399231668.
- Rowling, J.K. (2005). *Harry Potter and the Half-Blood Prince*. New York: Scholastic. ISBN 0439784549.
- Snicket, L. (1999). *The bad beginning*. New York: HarperCollins. ISBN 0064407667.
- Stanley, J. (1993). *Children of the dust bowl: The true story of the school at Weedpatch Camp*. New York: Knopf Books for Young Readers. ISBN 0517880946.
- Teague, M. (1997). *How I spent my summer vacation*. New York: Dragonfly Books. ISBN 0517885565.
- Van Allsburg, C. (1985). *The Polar Express*. New York: Houghton Mifflin. ISBN 0395389496.

The department editors, **Nancy Livingston** and **Catherine Kurkjian**, welcome reader comments and suggestions on this department. Children's Books presents reviews, recommended uses, and curriculum connections on trade books for children. Materials reviewed in Children's Books are in no way advocated or endorsed by *The Reading Teacher* or the International Reading Association. Opinions expressed are those of the department editors or reviewers. Books should be sent to **Catherine Kurkjian, Central Connecticut State University, Reading and Language Arts, New Britain, CT 06050, USA**, and **Nancy Livingston, McKay Building, Brigham Young University, Provo, UT 84602-6245, USA**.

Copyright of Reading Teacher is the property of International Reading Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.