



Besides Google:

Guiding Gifted Elementary Students Onto the Entrance Ramp of the Information Superhighway

by Joan Schneider

“Most [of today’s youth] will have received permission to traverse the information superhighway unescorted before they are allowed to cross the streets in front of their houses.”

—Cathy Collin Block
(2001, p. 293)

For gifted students, the power of the Internet is its vastness. Students can access extensive resources that far exceed the collections in their classrooms or school library. Especially with the rapid growth of the Internet during the last decade, the gateway to a rich array of sophisticated resources is literally a click away. Curriculum content can be differentiated by complexity and depth, and those gifted students with the ability to process large amounts of information quickly (Siegle, 2004) can race down the information highway at breakneck speeds. “The Internet is the single most significant technology available to gifted and talented students” (Siegle, 2005, p. 30).

As a K–4 library media specialist who has worked for many years with young children, my concern is that this ready access to the ever-expanding world of knowl-

edge is not without speed bumps and potholes. For example, the rapidly increasing volume of information being produced annually is mind-boggling. The quantity of stored information has doubled from 2000 to 2003; a reported 800 MB of recorded information is produced per person each year, the equivalent of 30 linear feet of books (Lyman & Varian, 2003).

Beyond this seemingly infinite amount of information, a major pothole is the Internet's lack of quality control (Ciolek, 1996; Coiro, 2003). In contrast, our library media center maintains strict quality control with its collection of books and magazines. Our library materials not only have been published with editorial oversight, but also independently reviewed in professional school library journals. Decisions on new acquisitions are based on their excellence and usability as well as their appropriateness for young children. However, on the Internet, quality first-rate information from reputable and reliable sources is intermixed with sites of questionable quality. Although the Internet provides limitless freedom of speech for anyone who chooses to create a Web site (McCoach, 2002), it does lead children to increased exposure to information designed to sell, discredit, deceive, or persuade (Coiro, 2003).

Information Literacy Is the Key

Information literacy is the key if students are to safely navigate the Internet roadway efficiently and effectively. In 1998, the American Association of School Librarians (AASL) and the Association for Educational Communications and Technology published *Information*

Literacy Standards for Student Learning, nine standards that provide a conceptual framework and broad guidelines for describing the information-literate student. The focus of this article is Standard 1: The student who is information literate accesses information efficiently and effectively.

Often self-taught, many students do not use the Internet either efficiently or effectively (Hoctor, 2005). Students want information in a hurry, but flounder when trying to locate specific and relevant information. They do not realize that the Internet does not have all of the answers, and can be an unreliable source (Coiro, 2005; Parsons, 2003). Often presented with too many choices, and too much information, children experience stress by the information overload (Akin, 1998). Web searches can overwhelm young researchers who have not yet learned to judge quality and "don't understand the difference between data smog, or advertising, or whatever" (Trotter, 2004, p. 8).

Speed Bumps and Potholes for Young Gifted Researchers

The young gifted child is particularly vulnerable to the highway's speed bumps and potholes. These young researchers do not have the benefit of life's experiences (Lovecky, 1997) or prior knowledge (Coiro & Schmar-Dobler, 2007) to discern what might be inaccurate, biased, or misinformation. Their academic asynchrony, due to uneven prior learning, leaves foundational holes (Akin, 2005) in what the young gifted child knows. Because the level of subject knowledge influences the way one searches for information, these gaps interfere

markedly with the successful retrieval of information (Haycock, Dober, & Edwards, 2003).

Wide gaps can exist when a child's intellectual reasoning is more advanced than his or her social, emotional, and moral development. Having the knowledge or the ability to reason is not the same as having the ability to make a good decision (Lovecky, 1997). This vulnerability presents educational challenges, and requires parents, teachers, and counselors to make modifications in order for the child to develop optimally (Columbus Group, 1991).

At the elementary level, how can we best support our youngest researchers, K-4, who need to learn how to look critically in both directions before they even step into the street? Filtering software systems, such as Net Nanny (<http://www.netnanny.com>) and CyberPatrol (<http://www.cyberpatrol.com>) often are roadblocks to the highway, and are not foolproof in protecting the young child (Schrock, 2004). We don't want to lock our young researchers in the garage. Instead, we want to teach them to drive safely as we guide them to the entrance ramp.

The First Step—Search Engines for Younger Gifted Students

Bilal and Kirby (2002) recommend that limiting content is preferable to giving children general access. For the youngest searchers, a number of alternative search engines exist that are considered "kid safe." These are especially useful for those who have not developed the skeptical, critical eye. Unlike the major search engines that get their listings by crawling the Web, these kid-safe directories use people

to seek out, review, and filter out sites that might be considered unreliable or objectionable. Many of the kid search engines listed below include extensive browsing directories, which are especially beneficial to the lower elementary students who prefer to click on preselected topics rather than entering their own search terms (Minkel, 2004).

Kid Search Engines

Yahoo! Kids (formerly Yahoooligans; <http://kids.yahoo.com>). Yahoo! Kids, launched in 1996, is the oldest directory for children ages 7–12. Its entry page with animation, colorful pictures, and sound is intended to encourage browsing. Sites are handpicked by Yahoo staff to ensure their content and links are appropriate for children. Bilal (2001) noted that seventh-grade science children had problems searching the older Yahoooligans site due to poor indexing that was not comprehensive, categories reflecting grown-up understandings of a topic, and no suggested spelling of misspelled terms. The newly released Yahoo! Kids has not addressed these concerns. Indexing is still limited to categories, words in the titles, and directory comments, differing from search engines that search the text within a site. Exact spelling is required, and no suggestions for alternative spellings are provided during searches.

Ask for Kids (formerly Ask Jeeves for Kids; <http://www.askforkids.com>). Ask for Kids is unique in that it searches multiple databases at the same time using natural language queries. Without needing to determine keywords, students ask a question, in the same way they would ask a parent, friend, or teacher. This site is great if students have a quick specific ques-

tion to be answered such as, “Why is the grass green?” Ask for Kids returns a list of questions and students select the one that is closest to what they are trying to have answered. Each Web site is carefully selected by an editor who reviews it for its quality and depth of content in addition to safety. Only G-rated sites and those specifically written for children are included. A great benefit is its automatic spellcheck of search terms.

KidsClick! (<http://www.kidsclick.org>). KidsClick! is less extensive and limited to approximately 6,400 high-quality sites. Searches can be done by clicking through directories, or by using keywords. Results show the subject, a personal annotation, and suggested reading level. The School of Library and Information Sciences at San Jose State University maintains the site and is currently updating it to focus on grades 4–9. The redesigned KidsClick! is expected to be in beta version in 2008.

KOL Homework Help, Jr. (Kids Online, AOL Web Site for Kids; <http://kids.aol.com/homework-help/junior>). KOL Homework Help, Jr., is a directory of educator-reviewed age-appropriate online resources for children in kindergarten, first, and second grade. A click and point browser is available.

Awesome Library (<http://www.awesomelibrary.org>). Awesome Library organizes 35,000 carefully reviewed high-quality Web sites with child-safe links. Specifically intended for K–12 teachers, students, parents, and librarians, its resources can be found by both browsing and searching. Also, this site allows users to search in Spanish, French, German, Italian, Portuguese, Chinese, Korean, or Japanese.

Other Tools for Searching

Kid's Search Tools (<http://www.rcls.org/ksearch.htm>). Kid's Search Tools, created by the Ramapo Catskill Library System, conveniently brings together on one page a number of highly rated search tools for children.

TekMom's Search Tools for Students (<http://www.tekmom.com/search>). TekMom not only brings together some of the best kid search engines, AOL@School, KidsClick!, Yahoo! Kids, and Ask for Kids, but her page includes specialized search engines for science, history, and images and other useful online reference tools.

The Second Step— Google SafeSearch

Although the kid search engines listed above are helpful if the student is looking for information typically researched by young students, their scope is limited. A gifted student with a sophisticated topic will need to go to a regular search engine to find what he or she is researching (Hector, 2005).

Google, the largest and most frequently used search engine (Madway, 2007) has gained fame as a verb (Baule, 2007; Hector, 2005), as kids “google” down the superhighway. With its deceptively simple interface, one of the Google's speed bumps is that a simple search can return millions of hits to the searcher. Lower elementary students are at great risk for information overload and anxiety (Cooper, 2000) when they are inundated with too much information.

One way to reduce hits is to set Google's SafeSearch filter, which eliminates many objectionable adult sites, to provide the widest possible set of child-appropriate search results.

To set the filter, on Google's home page (<http://www.google.com>) click Preferences to select one of three levels of SafeSearch filtering (strict, moderate, or no filtering). One needs to be aware that the filter is overly sensitive, and can set up roadblocks against potential relevant hits.

A second option is to use SquirrelNet's *Google's SafeSearch for Kids* Web page (http://www.squirrelnet.com/search/Google_SafeSearch.asp) as the searching onramp. This hybrid page created by Squirrelnet.com has the SafeSearch strict level filter preset, and includes the Google directory of popular kid and teen browsing sites.

Speed Bumps to Efficient and Effective Searches

Once the search button has been clicked, most likely page after page of hits are retrieved. Often the student automatically selects the first few resources listed (Baule, 2007), whether or not they are relevant, or systematically clicks one page after another (Henry, 2006; Minkel, 2004). Students can get frustrated and end up surfing from one site to another, or abandoning their search (Scott & O'Sullivan, 2005).

A major speed bump is that young children are natural browsers, not searchers (Cooper, 2002), showing preferences for "point and click" impulses and having difficulty developing searches (Parsons, 2003). These observations are in alignment with Schacter, Chung, and Dorr's (1998) research with fifth and sixth graders whose preferred search strategy of choice on the Web is browsing, which constitutes 80% of their information-seeking behavior.

Haycock et al. (2003) noted that young users not only have difficulty

in formulating a search statement, but many of their failed queries are a result of spelling errors, punctuation, or syntax errors, as well as lack of subject knowledge. Rarely do students take advantage of a search's engines advanced features like phrase searching (Minkel, 2004), where search strategies can include words as phrases to limit potential hits. Students are more likely to limit their use of search engines to basic keyword searching (Scott & O'Sullivan, 2005).

Basic Search Skills

To retrieve more relevant hits, direct instruction in some basic search skills will lead to more effective and efficient searches. These skills are not only simple to learn, but will yield more productive searches.

Use Correct Spelling. Not all search engines include an automatic spell-checker, so unless the word is spelled correctly, it will not find any matches. Also separate words by a space, and unless the word is a proper name, type words in all lowercase letters.

Use Root Words. Many search engines use stemming, so a search for a root word will retrieve all endings. For example: *Teen* will retrieve not only "teen" but also "teens," "teenagers," and so forth. Along the same idea, the singular of a word will retrieve more hits than the plural. For example: *cat* retrieves more entries than *cats*.

Place Quotation Marks Around a Phrase. Another simple tip that children may not be aware of is to use quotation marks around multiple terms. When multiple words are enclosed in quotations, the terms will be read as a phrase, not separate words. For

example, "Boston Red Sox" is a more efficient and narrower search than Boston Red Sox (without quotation marks). This trick works best with simple phrases.

Use Boolean Logic. George Boole was a 19th-century English mathematician who helped establish the field of symbolic logic. A number of search engines use the Boolean logic operators of AND, OR, or NOT to locate only those items that match the search. Students might not have heard of Boolean logic, but even the youngest children in today's schools are familiar with Venn diagrams, used as graphic organizers to help students compare and contrast two items. Young children can be taught how "cats AND dogs" will narrow a search, and "cats OR dogs" will broaden it (Siegle, 2005) especially when they can visualize the search through a Venn diagram.

The Next Steps

Locating information is perhaps one of the most important functions of reading on the Internet (Henry, 2006) and the key to beginning a successful journey on the information superhighway. By teaching our young gifted students how to access information efficiently and effectively, we are guiding them onto the entrance ramp. These students are learning the importance of seeking information beyond their own personal knowledge. By learning how to structure a search to locate the best information to meet their particular need, they are realizing that having good information is important.

At this point, however, our young gifted students are still only on the entrance ramp. The student who is to become information literate will

need to learn how to evaluate information critically and competently, be a critical consumer, and then use that information accurately and creatively (AASL, 1998). The Internet superhighway is a valuable resource, with its complexity and depth, for developing young people's gifts and talents (Siegle, 2005), and is readily available to those who have learned how to effectively cruise and critically navigate its limitless resources.

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