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Teaching Students Better Online Research Skills

Improving web research tactics is a priority

By Leslie Harris O'Hanlon

Sara Shaw, an elementary school teacher in Avon, Mass., realized she needed to teach online research skills several years ago when her students kept turning in projects riddled with misinformation. The flawed material often came from websites the students used. They took the information as fact, when it often was just someone's personal opinion.

Ms. Shaw thinks teaching online research skills is even more critical than it was just a few years ago. More than ever, information is literally at the fingertips of students through smartphones, tablet computers, and other digital devices.

"They will go on Google and type a word, and that is the extent of their research skills," said Ms. Shaw, who taught 5th grade for 10 years and now teaches special education at Ralph D. Butler Elementary School. "There is so much more to doing research on the Internet."

She is one of many teachers and librarians who are explicitly teaching online research skills, such as how to evaluate a website's credibility, how to use precise keywords, and how to better mine search engines and databases.

In November 2012, the Pew Research Center's Internet & American Life Project released a study that surveyed 2,067 Advanced Placement and National Writing Project teachers. It found that while most teachers agreed that the Internet provides a wealth of information to students, they also said students often **don't have the digital-literacy skills** to wade through that information. Forty-seven percent of the teachers surveyed said they "strongly agree" and another 44 percent said they "somewhat believe" that courses and content focusing on digital literacy should be incorporated into the school curriculum.

Smart Searching

Teaching students to be savvy online researchers starts with knowing how to use key words. That is something 6th grader Katie Lacey has worked hard to master.

"You need precise words," said Katie, a student at Albuquerque Academy, a private school for grades 6-12 in New Mexico. "If I'm looking up the John F. Kennedy assassination, I have to use those words. If I type in just Kennedy assassination, I could get information on Robert Kennedy."

Another important skill to teach students is how to predict the results they expect to see when they

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type in search terms, said Tasha Bergson-Michelson, a librarian who works for the Google Search Education team at the technology company's headquarters in Mountain View, Calif. Doing that can help them know when they may need to change their terms, she said.

In addition, Ms. Bergson-Michelson advises students to skim search results for words that pop up, especially unfamiliar words. People have a tendency to skip over words they don't know, she said. But those words, when added to search terms, can lead to more meaningful results. For instance, if a student wanted to find information on immigrants who send money back to their home countries, the term "remittances" comes up on search results.

"When you change the search to include the word "remittance," immediately the type of sources are qualitatively different and more suited for an academic or scholarly pursuit," Ms. Bergson-Michelson said.

Using search operators, words, or symbols that join key words to form a more complex query can make searching more focused.

Students can put quotation marks around their search terms to get results that include the exact wording. A minus sign eliminates something from a search. For instance, if students wanted to find information about the planet Saturn, but not the car of that name, they could type "Saturn-car" to narrow their results. Using "and" between search terms can give results that focus on two subjects, such as Martin Luther King Jr. and Malcolm X.

Choosing Search Engines

Finding the right search engine or database is also an important step in conducting online research, said Frances Jacobson Harris, a librarian at University Laboratory High School in Urbana, Ill.

She encourages students to use Google Scholar, which includes academic and scholarly sources of information. Google Books allows searchers to read pages from books, and if the information is useful, a searcher can then find the book in a library collection.

Gloria Ha, a junior at University Laboratory High School, said she first started learning about effective search techniques in 8th grade. Knowing how to search has made her more thoughtful in her approaches to finding information online.

"I usually start with Google Scholar or Google just to figure out what the topic is. Once I have a better idea, I'll go deeper," she said. "For example, if it's a history paper, I'll use the online library catalog, or sometimes there are e-books online through the university."

Ms. Harris teaches students how to access the invisible Web, databases that schools and libraries pay a fee to access. Those databases include scholarly articles, academic journals, online encyclopedias, archived editions of periodicals such as *The New York Times*, and other resources.

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Online Research Techniques for Students





Some teachers steer students toward sites and search engines written specifically for children.

For example, the [Kentucky Virtual Library](#), a consortium of libraries that provides residents of the state access to online databases—has a portal for K-12 students that outlines the steps for conducting online research, including how to use key words and how to organize information into notes, that is written in student-friendly language and designed to appeal visually to young children.

The portal also allows young users to access databases geared to children, including Searchasaurus and Grolier Online.

"They are more likely to get the right information at their reading level than simply going on Google," said Enid Wohlstein, the director of the library, which is based in Frankfort.

Ed Baklini, a 6th grade history teacher at Albuquerque Academy in New Mexico, advises his students when using Google to type in a key word and the word "kid" after it. Doing so pulls up results for younger students. Mr. Baklini also directs them to free databases such as an educational site managed by the Lone Star College System in Texas that contains information about American history decade by decade.

"When you go to one of these sites, there are hundreds of other trusted links to go to," he said. "This information comes from librarians and teachers who have taught history."

Evaluating Websites

Just as critical as smart searching is evaluating the information on the Web. Students can take specific steps to dissect a website, such as checking whether its URL ends in a .com, .org, .gov, or .edu.

"If it's from a university, museum, government, or some state run agency, then it's pretty valid," Ms. Shaw of Butler Elementary School said. "If it's someone's personal website, how do you know what that person is saying is true?"

In any case, students should approach websites with a critical eye.

"They should ask themselves while searching on sites: Who wrote this? What is the perspective of the person who wrote this?" said Rebecca Randall, the vice president of education programs for [Common Sense Media](#), a San Francisco-based nonprofit group that studies the effects of media and technology on young people.

"Or else while searching for information on African-American history, they could wind up on the site for the Ku Klux Klan."

It's also important to know if a site is commercial. If so, it may be slanted toward having users buy products.

"Not that advertising on a site makes it less credible," Ms. Randall said. "But it's just another point to consider when looking at information. What is the intent of the information?"

When students take the time to approach their Web research thoughtfully, they sometimes encounter websites that are biased. Ms. Harris, the University Laboratory High librarian, recalls working with a student who was writing a paper on George Orwell's *1984*. The boy found an essay about the book on the site of the Institute for Historical Review. Upon closer examination, the website was a Holocaust-denial website, Ms. Harris said.

"It looks scholarly because it's called 'institute,' and there are citations at the bottom," she said.

To help students scrutinize websites, Ms. Harris uses a lesson called "Whodunit," which takes students to various sites and has them answer questions about who wrote the information, what their credentials are, and who is sponsoring the site.

Ms. Shaw provides a checklist to help students decide whether sites are credible. It includes questions such as: Are there dead links? Do images support the stated facts? Are there links and references to other websites, and resources and experts that corroborate the information?

Mr. Baklini of Albuquerque Academy advises his students to be aware of sites where the language comes on too strong and the attempt is to persuade readers how to think.

He also starts the school year by teaching a media-literacy unit in which he shows students how to examine the persuasive techniques advertisers use when trying to sell products. The point is to teach his students how to look at media carefully. That ability to scrutinize carries over to their Web research, he said.

"I have them think about these persuasive techniques, and I say if you see any of those techniques in there, if someone is trying to convince you to think a certain way, you can still read that website, but take it with a grain of salt," he said.

It can be difficult for teachers to carve out time to teach yet another set of skills. But it's important to do so, Ms. Randall of Common Sense Media said.

"If you don't take time to do it, the kids aren't going to be giving you their best work," she said. "You have kids pulling information from sources that are not reliable and building a hypothesis or research paper around information that isn't accurate."

Modeling the Process

Teachers should model the process for searching online and make it something students do regularly in their classes, educators say.

Ms. Shaw integrated searching into her classroom by creating a classroom job of "searcher." That student's responsibility was to search the Internet for answers to questions that would come up during the day's class. Ms. Shaw used that approach as an opportunity to talk about strategies for good online research.

Teaching students solid online search skills is important not only because it will help them produce better work, but also because it prepares them to judge the validity of all sorts of information and to be critical thinkers.

Librarians have a natural place in the forefront of helping students be more adept at online research.

"School librarians should be a partner in this," Ms. Harris said. "Oftentimes, teachers don't realize that, or sadly schools don't have school librarians."

Teachers should give credit to the process of searching, not just for the final product,

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she added. Students can turn in search logs or annotated bibliographies to emphasize that process.

"This tells the students that teachers value what sources the students are using and that the sources they use matter," Ms. Harris said. "That way, kids won't just jump to the easiest, most meaningless thing."

She and others say it's vital to reinforce those skills repeatedly in working with students.

"They won't learn everything they need to know from one assignment," Ms. Harris said.

"It's like learning how to write. Every context is different."

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