Real people don’t do Boolean: How to teach end users to find high-quality information on the Internet

by Rita Vine

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Help Real People Make Sense of the Web

AFTER YOU READ THIS ARTICLE, SNEAK INTO AN INTERNET TRAINING CLASS and watch people learn Boolean features of search engines. Watch learners discover how to combine words and phrases in complex constructions. They will test their newfound skills against a variety of business problems, like manulife AND (ipo OR “initial public offering” OR demutualization). They will relish their newfound skills in taming search engines. They will thank the instructor profusely at the end of the session for teaching them such useful techniques. And then they will leave the class, go home, and when they use the web again in a couple of days they will revert back to the “plug-in-the-keyword” approach. Many information professionals think that the advanced search techniques that they regularly use—like Boolean searching—can be understood and assimilated by end users. Although a small minority of tech-savvy, analytically inclined users may incorporate Boolean searching into their web search, most won’t. They didn’t change their search behavior because they aren’t us. They don’t think like information professionals and they shouldn’t have to. They have their own jobs and lives that are complex enough.

Real people want advice, not technique. They want us, the information professionals, to simplify their lives. They want us to help them identify a few really great resources quickly and help them avoid false drops and crass promotions. They are tired of having pop-up windows bark unwanted ads at them. They want a simple methodology for information retrieval that they can use repeatedly to deliver selective, high quality information quickly and efficiently.

Good advice, simple tips, and a method that they can do themselves—these three points form the basis of teaching good web searching.

Helping Real People Make Mental Sense of the Web

Information professionals see the world of information in complex and sophisticated ways. A typical model is a series of four silos—books, journal information, “grey literature”, which is the printed but not published information that the web delivers so well—and “grey matter”, the unpublished, unprinted information that is in people’s heads. In a graphical mode, the world of information might look something like this:

But to our users, who aren’t nearly as well acquainted with the nature of information, and how information is published and disseminated, the world of information has started to look more like this:

The World of Information - Their View

Just a search engine query away from EVERYTHING!

Without a mental map of the information and publication world, it’s only reasonable to expect people to point and click on just about anything. And they do. They are knowledge hungry. They are rushed. Because they see the world of information as just a click away, they leave no cushion of time to find alternative routes to information. Branding heavily influences users because they aren’t aware of its subtleties. For example, in our in-class tests, most adults will easily identify banner advertising on a web page, but they will rarely figure out that “partners” or “sponsors” are also advertisers. Even fewer will understand cross-promotional efforts (like those between

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HotBot and its parent Lycos, which is featured on every HotBot page). No end user has ever wondered aloud what “Powered by DirectHit and Lexiquest” means at the bottom of a typical HotBot results page. No one knows that Yahoo! charges $199 for front-of-the-line consideration of dotcom sites.

In addition to being undiscerning of content, most adults are clueless about the research and information gathering process. And this is true in high school and university as well as business and government. Poor spelling is commonplace and is exacerbated by poor typing skills, which further inhibits competent searching. On the technical side, most adult business users know Yahoo! and the search buttons that come equipped in their browsers. Many have tried to use search engines or meta engines. They use the “plug-in-the-keyword” approach, and never think about possible synonyms that they could consider. In your next class, try this exercise—ask your class to find the player lineup of their favorite baseball team. To a fault, they will use the word “lineup” in their search, and never consider the word “roster” or “list”.

Most users do not know the difference between search engines and web directories. They treat all search boxes identically regardless of the tool the box is attached to. A database of 250 million pages gets the same query input as a database of 8,000 annotated links. No one reads the help files, and no one ever will.

Most people have one or two web search tools that they use to the exclusion of all others. When they conduct an unsuccessful search, they keep trying different words in the same search tool in the hope of prying the answer out of it.

Given these starting points, there are some clear challenges facing us when teaching Internet information retrieval. Most people have learned about web searching the way they learned about sex—from their friends—so we need to correct our learners’ assumptions about what is on the web and debunk much of the mythology surrounding web searching. We would also like them to become better consumers of web information. We want them to connect the library with Internet expertise so they come back to us when they need help. And finally, since they are going to try to do it themselves, we need to empower them to self-sufficiency. Whatever we tell them has to be simple enough for them to recreate on their own without our help.

So how can we teach undiscerning users to gather, select, and process good web information when all they know is the schoolyard method of searching using Yahoo! and a search engine or two? And how can we do that in an engaging, lively way?

Shaping the World of Information for Real People
Most end users understand that books and journals are different from what’s on the “free” web. They understand this in the context of commerce. Because book publishers and magazine makers want to be paid, it’s unlikely that much information will be free on the web. They get this. With this premise understood, it’s relatively simple to slightly reshape and simplify our view of the world of information:

This model creates a simple framework for information searching. It retains the web as the handy jump-off point for information retrieval. Users can start at the library’s web page to access links to book catalogues, journal indexes, and other licensed resources that you purchase and link to. They can use the free web for all the “grey” stuff—the printed but not published resources like brochures, catalogs, patient information, and the other things that the web is so good at supplying. They need to be introduced to sites that YOU recommend for searching the free web. With this model, users only have to remember a single place to look (the web)—and a single web page to look at (the library’s). This is easy to remember, and easy to reinforce.

While there are exceptional search tools on the free web that refute the two-silo model above, like PubMed or the thousands of volumes of full text books available online for free, these exceptions can be introduced later, after the “rule” is learned. People learn exceptions to rules only after they learn the rules.

How to Choose the Right Search Tools for Your End Users
Search directories must: a) be easy to use, b) be good for many different types of searches, c) link to high quality filtered information, and d) be well organized and preferably browsable. Many people are poor spellers, or poor typists, or poor selectors of keywords, or a combination of all three. Browsing through a well-constructed subject hierarchy significantly reduces risk of errors like these.
Good search tools should induce the “wow factor” in your Internet training—people should be able to easily see just how good they are. Typical tools that engage this response are high quality filtered sites like Librarians’ Index to the Internet (www.lii.org), and some commercial sites like About.com (www.about.com).

Search engines should follow the same criteria as other tools. I like Google (www.google.com) for its link analysis methodology and its limited functionality, and HotBot for its easy drop-down menu approach to query construction.

Avoid conducting long show-and-tell web site demonstrations. They’re boring. Save yourself typing and distributing long lists of links to your learners. They won’t remember more than a half dozen anyhow. Pick only the best, leave the rest.

The Lesson Planning Process
Training works best when it is well planned. The best training starts with a thorough understanding of the learner. Good training has goals in mind, and an action plan to ensure that those goals are met. At Workingfaster.com, we use a modified version of conventional strategic planning steps to create a training plan that meets learner needs and instruction goals.

Step 1. Create a mental image of the learner
It’s often difficult to do a formal needs assessments with end-users. Instead, try to create a mental picture of the likely learner. Why is this person coming to you for help? What are the one or two things they really want to leave with at the end of the session? What are their computer skills? What do they already know?

By creating a vision of this composite learner, you are able to target your training appropriately. You’ll have a mental image of the person and what their starting point is, and that will help keep your training ambitions in check.

Step 2. Consider the things you cannot change
The external training environment has to be considered before you can adequately plan your session. The space that you use for teaching is probably less than perfect, but you’ll have to make the best of it. Try to imagine the event in the space you have selected. If you’re training in an office, is there enough room for both you and the learner to be comfortable? Should you call-forward the phone for the duration of the session? Is your lighting and ventilation sufficient? Or perhaps you have a multi-

The amount of time you have for training often gets slotted into this step. Most end users are too busy to spend a full day in a training program, and in many organizations it’s easiest to attract people to a 50-minute or one hour session. Be realistic when considering how much time you should devote to training and how much your learners can tolerate.

Step 3. Have a goal (or two) in mind
Training goals are essential. How else will you measure success? Certainly not by evaluation forms, which at best measure current happiness among participants and don’t tell you much about whether learners will use what is taught. In our full-day classes, we have only three goals (helping users understand the limitations of search engines; understanding and using subject starters, and learning techniques for organizing information found on the web.) It’s almost always a mistake to have more than one or two goals per 90 minutes of training. With more, people will find it hard to follow you, and won’t come away any wiser.

Step 4. Brainstorm training ideas
With the learner, the environment, and the goals in mind, begin to think of all the possible activities that you could undertake to meet one or more goals. At this stage, anything goes. Nothing is bad, nothing is wrong at this point. It often helps to do your brainstorming with a colleague (be sure to agree not to fault each other’s ideas) to get the creative juices flowing. At the end of this process, you’ll have a list of every possible idea you could think of for your lesson.
**Step 5. Select the best ideas from your list to form your outline.**

Go through your brainstorming list, and select the best ideas. You’ll know it’s a good idea when you can see how it DIRECTLY meets one of your goals. It should be obvious. Throw out any ideas that don’t directly meet at least one of your stated goals. This is the spot where many Internet trainers trip up. They think it would be nice to add a few extra bits just because they seem like good ideas, and before you know it, they have diffused their objectives and created more content than they can accommodate. Be ruthless.

In a one-hour, hands-on training session, the most you could cover is two, possibly three ideas. It takes a few minutes to explain the idea, a few minutes to demonstrate it, a few more for the learner to replicate it, and another few for them to try it as an exercise using a different example and discuss the results. You have to leave time for questions too. You’ll be surprised how quickly the time adds up.

**Step 6. Create the tasks for each item in your outline.**

This is a critical piece of your planning. For each item in your outline, you must create an activity or demonstration that clearly proves your point and can’t easily be disputed. For example, if you’re attempting to teach the limitations of search engines and the value of subject directories, you’ll have to come up with a relevant search example that your demonstration search engine doesn’t perform well. Use the identical example in the search directory of choice in order to prove your point.

The demonstration phase is all about proving a point and showing your learners that what you say is true. If your learners can accept something as true, they are far more likely to apply that learning on their own. Take time to work out really compelling examples that are relevant to your learning group.

**Step 7. Decide how you will evaluate success.**

How will you know if your training session is effective? Think of what you want learners to do differently by the end of the session, and that will usually be a clue. For example, if you want your users to stop using search engines to find topical resources and begin using high quality directories like Librarians Index to the Internet or About.com, you could evaluate your success by watching how your learners perform an exercise to answer one or two topical questions.

By the end of this process, you should have a well-organized session with a few carefully chosen activities and some great examples that help you prove your point and make users want to change their web behavior.

**Tips for Delivering Group Internet Training**

**Know your classroom.**

Do a site check. Arrive early. There’s no excuse for fumbling around at the beginning of class. Learn how to turn on the projector and the computer. Review any login routines. Make sure the browser works. Make sure the web works from every workstation. Be very nice to the tech support people: you may be at their mercy later if something goes wrong.
Plan appropriate backups.
Backups, like PowerPoint presentations and downloaded web sites cached to a hard drive, are great, but they are time consuming and not always necessary. Reserve your most labor-intensive backups for mission-critical presentations that can’t be rescheduled.

Try to place yourself on the audience’s LEFT.
People read from left to right, so it’s easier on the learner if you are on the left of the screen. If you’re on the right of the screen, the audience has to decide whether to look at you or look at the screen. If you’re on the left, it’s much easier for them to glance at you and back at the screen. It’s also easier for you to point casually to the screen with your left hand.

Get them to do something quickly.
In an online classroom, the mouse offers an irresistible lure to learners, and they want to start clicking as soon as possible to make something happen. Don’t spend too long on introductions and explanations at the start of class; five minutes is plenty, then get them to do something.

Use icebreakers and round-robin introductions if people need and want to get to know each other, but bear in mind that this adds about one minute per person in attendance. If it’s appropriate, try having an easy exercise waiting for them on a flipchart which can lead naturally into the first point of your course outline—so they have something to do as soon as they walk into the room.

Get them to focus on the right spot.
When you’re demonstrating something on a web page, you already know where the thing is. They don’t. You need to get them focused on the right spot before they can understand what you’re talking about. Try mentally splitting the browser screen into four sections, and referring to the “upper left hand section of the screen” or the “lower right hand section of the screen” and only THEN identify the thing you want them to look at. For example, say “Look at the upper left hand section of the screen, and now click on the HotBot logo.”

Make sure that your mouse follows your commands too.
It’s easy to click before you speak, ensuring that you’ll lose people. Tell them what to do, allow a second for them to process information, and then do it. I even say “click” when I click, as reinforcement.

Instruct in second-person singular.
Don’t say “If I click on the HotBot logo, I can go back to the home page” while you’re clicking on it. That statement is ambiguous—they don’t know they are expected to click while you are, and by the time they figure it out, you’re two steps ahead of them. Use the second person “Click on the HotBot logo.” Then click. They will click right along with you.

Pair poor mouse users with faster clickers.
This is a useful way of helping the learners with poor mouse skills keep their focus on the lesson while taking the pressure off them to perform using the mouse. Always ask permission to do this privately if you sense you’re working with someone who has low mouse skills. Consciously avoid isolating students or drawing group attention to their skills, which might make them feel stupid. Ask for volunteers from the better users if you’re attempting to pair people—there are always people who like to work alone and others who prefer to work with a buddy.

Consider having two trainers in the room.
Particularly if you’re new to Internet group training, there is so much to remember and coordinate. With two trainers, one can opt to be a floater, helping people get out of trouble at their workstations, while the other can stay at the front of the room leading the class. Alternatively, one can be a typist, reacting to the instructions of the other who is leading the class.

Things that Help People Work Faster and Smarter on the Web
Effective learning is more than just good lesson planning and slick delivery—it’s also about creating tools that users can refer to post-training to reinforce learned skills and best practices.

Paper handouts are still winners—I make sure that our handouts have contact information on the front page so it’s easy to get help from us post-training. Try using the pre-configured style templates in your word processing software. They look great. Handouts can serve as emergency backups, too. You can probably teach from handouts for a while until a technical problem is ironed out. Keep a flipchart or white board handy to write group ideas or to correct a misspelled URL on the fly.

Laminate your most important single-page handout.
People treat laminated paper differently from regular paper. They take better care of it, keep it closer to their desks, and don’t misplace it as easily. Try laminating a quick reference card or a bookmark with your favorite links and tips.

Make web handouts. Learners love diskettes and CD-ROMs and treat them better than paper. Consider preparing a web page with your favorite links for web research and putting this on a diskette for each learner. This is a
very valuable user aid, as it pulls all your web recommendations into a single easy-to-use page of links.

Try creating your page using a table style rather than a single list of links. Users don’t like to scroll down long pages and a table style uses screen real estate more efficiently. Put the best resources in the first row. If you’d rather not design, update and maintain a resource yourself, consider using a really good generic starting point like Librarians Index to the Internet or BUBL Link 5:15 (www.bubl.ac.uk/link). There are also some customizable fee-based products on the market, like Workingfaster.com’s Search Portfolio™ that can be deployed as enterprise-wide web searching solutions.

Learners use these custom web pages as their home page during class to avoid the tedium of typing web addresses into the browser, and post-class to reinforce what they have learned. Provide a set of instructions on how to make the web site their default home page so the pages can come up every time they launch their browser. We get so many questions on how to do this that we maintain a web page with the instructions, and put its URL on the diskette labels.

Stay in touch with your learners after class. Offer your learners an opt-in e-mail newsletter. Use it every other month to distribute some just-in-time training tips and one or two new resources that you think are really special. Keep it brief and to the point—everyone feels bombarded by e-mail these days and yours should be really special.

It Isn’t Really Training After All
Ultimately, the educational opportunities we provide to our end-users can’t really be classified as training at all. Training is all about behavioral modification. It’s something we do with dogs, and young children. In the workplace, we can only train people when we can influence their behavior and their method of working. That doesn’t really work with end users, so it’s best to think of your training as an educational experience, and a way to market the library and its services to your users.

Offer good advice, some helpful tips, and a method they can do themselves. In focusing on just those three things, there is a good chance the librarian can become an indispensable web advisor. Mission accomplished.

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