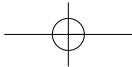

▶ **Going Beyond Google**

**The Invisible Web in
Learning and Teaching**

Jane Devine

Francine Egger-Sider

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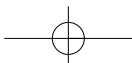
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► Preface

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"The meaning of life??? How the hell should I know?
Try Google."

Is the meaning of life available through Google? So it would seem from the information-seeking behavior of many students, especially at the college level. In a recent cartoon by Chris Wildt, a guru on a mountaintop sends a petitioner to Google to learn the meaning of life. Wildt pokes fun at the underlying assumption that everything is on the Web and that Google can find it all. In fact, researchers who use only one general-purpose search engine, such as Google or Yahoo!, to find information on the Web are like investors who accept a return of \$25.00 as full payment on a loan of \$100.00. Even the best search engine offers at most only 25 percent of the information available on the Web.

A vast wealth of information that is not accessible via Google and its analogs is indeed available through the Web. Yet, this vast array of knowledge remains a secret to most students and researchers because general-purpose search engines do not index them. Thus, they fall into what we call the "Invisible Web." The authors (and most librarians) advocate teaching students about the limitations of general-purpose search engines and introducing them to the riches available through other interfaces. Students should receive a fuller picture of the information world in which general-purpose search engines inhabit a small part. They can be encouraged to explore further and to understand the many information choices open to them.

Going Beyond Google: The Invisible Web in Learning and Teaching proposes to address the dilemma created by the explosion of online information available at anyone's fingertips. This book argues that it is up to faculty, teachers, and librarians to fundamentally change "the research process" as currently undertaken by

students and redirect learners toward information beyond that found through general-purpose search engines.

It is true that students find one-stop shopping for sources through Google, or other general-purpose search engines, much easier than having to learn and navigate the interfaces of several different publishers. At the same time, commercial firms are also making inroads into the Invisible Web by enlarging the pool of resources indexable by general-purpose search engines. The gap between the visible and the Invisible Web is definitely narrowing. Still, relying exclusively on general-purpose search engines gives the student the false impression that he or she has access to whatever is available on the Internet. It is imperative to educate students to the complexities of research.

Anyone interested in the concept of the Invisible Web can profit from this book. However, the book is specifically geared toward the teaching faculty at every level of the educational spectrum, including librarians who can mold a student's research habits. The first step is to have students attain an awareness of the division between the "surface" or "visible" Web and the "deep" or "Invisible" Web. The next step is to help students find and utilize the contents of the Invisible Web. This objective can be accomplished in various ways, either by requiring an analysis of the sources used or by requiring the use of Invisible Web content for a particular research assignment. The authors present a number of activities that can be undertaken with a class, irrespective of the discipline taught.

To set the foundation for the main argument, Chapter 1, "Characteristics of the Invisible Web," examines its relationship to the surface Web, the nature of the material of which it is comprised, and its searchability. The last section addresses the various constituencies that could benefit from mining the Invisible Web.

Because a discussion of the Invisible Web in learning and teaching cannot be undertaken without an understanding of how users, primarily students, use the Web for research and why they overwhelmingly start, and often end, their research on the free Web, Chapter 2, "Use of the Web for Research," reviews the major user behavior studies undertaken in the past ten years. It is important to identify which features of general-purpose search engines are so attractive to all users, and to students in particular, that they use these search engines to the exclusion of many other sources. Such knowledge can empower teachers and librarians to intervene in the research process to redirect the choice of resources to be used.

Chapter 3, "Introducing Students to the Invisible Web," is a staged introduction to concepts about the Invisible Web that readers can adapt and use in the classroom or the library, irrespective of discipline. Each concept is mapped to the information literacy competency standards of the Association of College and Research Libraries and the American Association of School Librarians. The idea of the Invisible Web can be woven into reference work, library instruction, regular class instruction, and course management software, such as Blackboard.

Chapter 4, “Further Exploration of the Invisible Web,” offers structured exercises for more in-depth understanding of the Invisible Web. They can be used by anyone or introduced in a classroom setting.

Chapter 5, “Internet Research Strategies,” provides a detailed analysis of a research assignment on microfinance given to a hypothetical second-year student in a college international studies class. The search is run through three search tools: Google; EBSCOhost’s Academic Search Premier, a subscription database offered in most college libraries; and INFOMINE, an online subject directory. The results of the three searches are analyzed and evaluated. This type of comparison between the results of two or three different sources can be used in any class where research is required. It forces students to look at the results of their searches and evaluate the validity of the sources found and their relevance to the assignment at hand.

Chapter 6, “A Sampler of Tools for Mining the Invisible Web,” examines the different tools, such as directories, databases, and search engines, that teachers and their students can use to explore the Invisible Web. A chart recommending when to use these tools is included.

Finally, Chapter 7, “Visible versus Invisible Web,” analyzes the shifting boundaries between the “visible” or “surface” Web and the “deep” or “Invisible” Web. As general-purpose search engines uncover more and more sources by indexing them through crawlers, the border between the coexisting realms of “visible” and “Invisible” are constantly shifting. In addition, new technological innovations are mushrooming, whether in the commercial sector, with new initiatives such as Google Scholar and Google Book Search, or in the library world, with the advent of new library online catalogs such as the one at North Carolina State University Libraries, running on Endeca software. All of these developments have the beneficial result of bringing more content into the visible Web, allowing researchers easier access to quality sources.

Last, appendices include selected additional readings, teaching tools that can be used to impart the concept of the Invisible Web, including graphics, and the text of the *Information Literacy Competency Standards for Higher Education* of the Association of College and Research Libraries.

The authors hope *Going Beyond Google: The Invisible Web in Learning and Teaching* will expand the borders of information beyond resources identified by Google search results and help open a wider world of primary and secondary sources that can better inform learners and expand the horizons of knowledge.

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