



**Strategies for Studying, Learning, and Researching**  
**By David Alderoty © 2014**

**Chapter 2) Advanced Research Techniques**  
**1707 Words**

**To contact the author left click for a  
website communication form, or use:  
David@TechForText.com**

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**Boolean Operators in Search Phrases**

**What are Boolean Operators**

Boolean Operators are Search operators, which are words and symbols that provide instructions for a search engine, on how to direct a search. For example, search operators can tell the search engine to exclude certain webpages, or to include webpages with specific phrases.

Search operators can be manually inserted directly into a search phrase, which I will discuss in this section. However, they

can also be generated with the advanced search functions that are available in many search engines, which I will discuss in the next chapter.

From a technical perspective, Boolean operators, resemble certain mathematical concepts from **set theory**. However, the symbols used in set theory are different from the words and symbols used with search engines, but many of the concepts are the same. For example, when you create a search phrase you are essentially defining a **set of webpages**, which have the information you need. Boolean operators are used to define the set of webpages **more precisely**.

A domain that has a number of webpages and/or several subdomains can also be defined as a set, such as [www.TechForText.com](http://www.TechForText.com). Sometimes web-based searches involve defining a subset. A subset of the above can be defined as [site:TechForText.com Trigonometry](http://www.TechForText.com/Trigonometry) This subset has 36 entries, with the word trigonometry, based on a Google search, performed on 3/5/2014. **Left click on the blue underlined words to see the search results, from Google.**

If you want more information about **set theory** and **Web searches** see the following: [Using a Search Engine -- Set Theory for Beginners](http://www.TechForText.com/Using-a-Search-Engine--Set-Theory-for-Beginners), URL: <http://goo.gl/ndRDtW>

## **The Practical Application of Search Operators**

### **What are the Most Useful Search Operators?**

I have found that the most useful search operators are quotation marks, " ", **OR**, **AND**, the asterisk \*, and **site:**. I will explain how to use these operators under the following subheadings, with examples.

**IMPORTANT NOTE:** Most of the examples in this section involve search phrases, with specific operators. I tested these phrases with Google, and the number of search results I obtained is indicated for each example. **You can repeat these searches by left clicking on the blue underlined text next to each example.** The number of search results you get, will probably not be the same as the number I obtained, when I tested these phrases. This is because Google constantly updates its databases.

### **The Use of Quotation Marks In Search Phrases**

I have found the following technique very useful, and it involves creating search phrases with quotation marks. Specifically, quotation marks on a search phrase will increase the selectivity of the search results. That is, with this technique you can increase the focus of your search, and eliminate unwanted search results. However, it can be somewhat of a challenge to figure out precisely where to place the quotation marks on a specific search phrase.

The following explanations involve hyperlinks to Google search pages. To activate a hyperlink left click on the blue underlined text. If a link fails access [www.Google.com](http://www.Google.com) directly, and entered the indicated search phrase into the Google's search

box.

To explain how to increase the effectiveness of a search, with quotation marks, I will use Google, with the following search phrase: **Scientific studies of deep-sea animals in the Atlantic Ocean**. The results I obtained with various arrangements of quotation marks are presented below:

Without quotation marks I obtained approximately 1,900,000 results. Without quotation marks on a phrase, the search results can include any web-based document that has all the words in the search phrase regardless of their sequence.

When the Entire phrase was placed in quotation marks, such as: "Scientific studies of deep-sea animals in the Atlantic Ocean" Google indicated: 1,350,000 results. This was followed by: **⚠ No results found for "Scientific studies of deep-sea animals in the Atlantic Ocean"**. Quotation marks on a long search phrase can make the search excessively selective, which can result in no search results.

When I used two sets of quotation marks I obtained approximately 506,000 results. **"Scientific studies" of deep-sea animals in the "Atlantic Ocean"**

When I use three sets of quotation marks I obtained approximately 964 results. **"Scientific studies" of "deep-sea animals" in the "Atlantic Ocean"** This last example is the ideal, with this search phrase.

The idea here is to place quotation marks on two or more

words that are important for your search. With the above example, the important word combinations are Scientific studies, deep-sea animals, and Atlantic Ocean.

**Do NOT place words that are unimportant for your search** in quotation marks. With the search phrase used above as an example, the unimportant words are **of**, **in**, and **the**. Thus, with this example, all of the following are **INCORRECT**:

**“Scientific studies of” “deep-sea animals in the”  
“Atlantic Ocean”**

**“Scientific studies of deep-sea animals” “in the Atlantic Ocean”**

**“Scientific studies of” “deep-sea animals in” “the Atlantic Ocean”**

To develop insight and skills using quotation marks carry out your own experiments with various search phrases, and quotation marks. Keep in mind that web searching is a trial and error process, especially when quotation marks are used.

### **The Use of OR In Search Phrases**

The use of a capitalized **OR** in a search phrase is useful in the situations described below. When using this operator, it might also be necessary to use quotation marks. You must properly place the quotation marks, and the **OR**, on the words comprising

your search phrase. This will be explained in the following paragraphs, with examples.

**OR** is useful when the same concept might be described with different words, such as: **"albino lions" OR "white lions"** [This search phrase worked well with Google, and it produced approximately 808,000 results.](#) I repeated this search with Google Images ([www.Google.com/imghp](http://www.Google.com/imghp)). [This resulted in a search page with photographs of dozens of white lions.](#)

It is possible to get similar results as the above, by conducting two searches, one with **"albino lions"** and the other with **"white lions"**, **without using OR**. With the search phrase **"albino lions"** [I obtained approximately 17,600 results.](#) With the search phrase **"white lions"** [I obtained approximately 792,000 results.](#) This totals to 809,600, which is not much different than the 808,000 results I obtained with the search phrase: **"albino lions" OR "white lions"**

**OR** can be useful, in a search phrase, when you want to find information that relates to two or more localities. For example, with the following search the localities are Atlantic and Indian oceans: **"Scientific studies " of "deep-sea animals" in the "Atlantic Ocean" OR "Indian Ocean"**. [With Google I obtained 1,120 results.](#)

In some cases, you might get more results by carrying out two separate searches, without the **OR**. When I conducted one search for the **"Atlantic Ocean"** and another for the **"Indian Ocean"**, I

obtained a total of 1657 results, from the two searches. This is more than I obtained with **OR**, with one search. This involved the following search phrases:

**“Scientific studies ” of “deep-sea animals” in the  
“Atlantic Ocean”** [With Google I obtained 966 results.](#)

**“Scientific studies” of “deep-sea animals” in the  
“Indian Ocean”** [With Google I obtained 691 results.](#)

### **The Use of AND in Search Phrases**

If you want to find web-based documents that contain two or more concepts, words, or items on a page, use the **AND**. For example, with the search phrase **cats AND dogs**, webpages that have only the word **cats** or only the word **dogs**, will **NOT** appear in the search results. Only webpages that have both of the words: **cats** and **dogs** will appear in the search results. When I tested the search phrase **cats AND dogs** with [Google I obtained approximately 198,000,000 results.](#) I repeated this test with Google Images (at [www.Google.com/imghp](http://www.Google.com/imghp)), [and a webpage was displayed with dozens of photographs, which had at least one cat and one dog in most of the pictures.](#)

### **Using the Asterisk \* for Unknowns in Search Phrases**

When you are **not** certain of the correct words for an effective search phrase, you can use asterisks, which are symbolized as **\***. The examples presented below will clarify the utility of this search operator.

When the following search phrase was used with Google without an asterisk **\***, [it resulted in 117,000 results.](#)

**“Techniques for” “improving study skills”.**

Most of the results, with the above search phrase, appear to be relevant. However, replacing the word **techniques** with an asterisk **\*** might be useful in this case. With the above search phrase, the websites that do **not** have the word **techniques**, will **not** be displayed on the search page. Keep in mind, that many words are approximately equivalent to techniques, **in terms of search criteria**. Examples are method, strategies, tips, or even websites, books, or courses. By using an asterisk **\***, instead of the word: **technique**, there should be **MORE** results, as indicated below:

**“\* for” “improving study skills”** [The Google search page indicated 1,420,000 results.](#)

I repeated the above search, **without** the asterisk **\*** and **without** the word technique. I did this to determine if the asterisk was really doing anything.

**“ for” “improving study skills”** [Google search page indicated only 251,000 results.](#) This is much less than the 1,420,000 with the asterisk **\***.



### **Search Phrases with Site: to Focus on a Specific Domain**

When you want to search for information from a specific website domain, use the word site with a colon, with Google. For example, if I wanted to search [www.TechForText.com](http://www.TechForText.com) for information on calculus, I would create the following:

**site:TechForText.com calculus** With this search phrase, [Google's search page indicated 56 results](#), from the domain [www.TechForText.com](http://www.TechForText.com)

### **There are Many Search Operators**

In the preceding paragraphs, I presented only five search operators. However, there are **many other** search operators, which are useful with Google, and other search engines. If you are interested in these operators and related information, see the websites listed below:

Words on website: [GoogleGuide Using Search Operators](http://www.googleguide.com/using_advanced_operators.html), **URL is** [www.googleguide.com/using\\_advanced\\_operators.html](http://www.googleguide.com/using_advanced_operators.html)

Words on website: [Search Strategies](http://www.bcps.org/offices/lis/models/tips/searchstrategies.html) URL is [www.bcps.org/offices/lis/models/tips/searchstrategies.html](http://www.bcps.org/offices/lis/models/tips/searchstrategies.html)

Words on website: [Search Tools - Advanced Features](http://navigators.com/search_tool_advanced.html) [http://navigators.com/search\\_tool\\_advanced.html](http://navigators.com/search_tool_advanced.html)

Words on website: [Basic Search Tips and Advanced Boolean Explained](http://goo.gl/ecavR) **URL is** <http://goo.gl/ecavR>

Words on website: [Search operators](#), URL is <https://support.google.com/websearch/answer/136861?hl=en>

Words on website: [Guides — Using Search Operators in Justis](#), URL is [www.justis.com/support/guide-operators-jcom.aspx](http://www.justis.com/support/guide-operators-jcom.aspx)

Words on website: [Bing Help Home > Advanced search keywords](#)  
<http://onlinehelp.microsoft.com/en-us/bing/ff808421.aspx>

## **From Other Authors: Additional and Supporting Information, and Alternative Perspectives, for Chapter 2**

### **Instructions**

If you want more information, alternative perspectives or explanations, see the following websites and videos from other authors. To access this material left click on the blue links, or the URLs presented below.

If a link fails, enter the indicated **search phrase** or the **\*words that are displayed from the website**, into the search engine presented on the left of each entry. \*Note the words from the website are indicated with **Words on website:** If you examine the following entries all of the above will be clarified.

### **Webpages from Other Authors to Supplement Chapter 2**

[www.Google.com](http://www.google.com) Search phrase: ["advanced search techniques" This is a Google search page, which indicates 325,000,000 results.](#)

[www.Google.com](http://www.google.com) Words on website: [IBM Advanced search techniques](#) URL is <http://goo.gl/4nUd08>

[www.Google.com](http://www.google.com) Words on website: [Boolean operators and truncation](#) URL is <http://libguides.tru.ca/content.php?pid=83262>

[www.Google.com](http://www.google.com) Words on website: [Advanced Search Techniques](#)  
Research Tips and Techniques URL is  
[www.searchingspot.com/techniques.htm](http://www.searchingspot.com/techniques.htm)

[www.Google.com](http://www.google.com) Words on website: [Search operators](#) URL is  
<https://support.google.com/websearch/answer/136861?hl=en>

[www.Google.com](http://www.google.com) Words on website: [INTRODUCTION TO LOGIC USED IN ELECTRONIC SEARCHING Boolean Logic Boolean Operators](#) URL is [www.exploratorium.edu/lc/search/boolean.html](http://www.exploratorium.edu/lc/search/boolean.html)

[www.Google.com](http://www.google.com) Words on website: [Google Algorithm and Axiomatic Set Theory](#), URL is <http://goo.gl/W3jz2A>

[www.Google.com](http://www.google.com) Search phrase: ["Boolean operators" and "Web searching"](#) **This is a Google search page, which indicates 6,460 results.**

[www.Google.com](http://www.google.com) Words on website: [Basic Search Tips and Advanced Boolean Explained](#) URL is <http://goo.gl/ecavR>

[www.Google.com](http://www.google.com) Words on website: [Advanced Web Searching](#) URL is [www.learnthenet.com/how-to/advanced-web-search](http://www.learnthenet.com/how-to/advanced-web-search)

[www.Google.com](http://www.google.com) Words on website: [Using a Search Engine](#), URL is [www.askscott.com/sec2.html](http://www.askscott.com/sec2.html)

[www.Google.com](http://www.google.com) Words on website: [Web Searching Strategies](#), URL is <http://ucc.sln.suny.edu/course/internet/limcp2.htm>

**Google Search:** Words on website: [Google Search: The Asterisk Wildcard and Punctuation](#) URL is <http://goo.gl/dzS0h2>

## **Videos from Other Authors, to Supplement Chapter 2**

When you left click on a **link** for a video, a webpage will open, and the video will start automatically in most cases. The webpage that opens with the video will usually have 10 or more **RELEVANT** videos. If the video does not start automatically, and the webpage opens, left click on the link provided by the author of the video. This link is usually in the center of the screen.

[www.Video.Google.com](#) **Search phrase: "advanced search" This is a Google video search page, which indicates results 163,000,000.**

[www.Video.Google.com](#) Words on website: [Advanced Search](#), URL is <http://youtu.be/XL8k6mxTz7M>

[www.Video.Google.com](#) Words on website: [EBSCOhost Advanced Searching](#), URL is <http://youtu.be/JT-yMu6qvVM>

[www.Video.Google.com](#) Words on website: [Google Advanced Search Tips](#), URL is [http://youtu.be/cJpnu3D9f\\_Q](http://youtu.be/cJpnu3D9f_Q)

[www.Video.Google.com](#) Words on website: [CINAHL Databases - Advanced Searching Tutorial](#), URL is <http://youtu.be/0QjtxVVskqA>

[www.Video.Google.com](#) **Search phrase: "Boolean operators" and "Web searching" This is a Google video search page, which indicates 92 results.**

[www.Video.Google.com](#) Words on website: [Effective Web Searching Library Database Searching Techniques](#) URL is <http://youtu.be/XWAZpLY4xyA>

[www.Video.Google.com](#) Words on website: [Searching The Internet - A Primer](#) URL is <http://youtu.be/FtzDWePs47k>

[www.Video.Google.com](http://www.Video.Google.com) Words on website: [Library Database Searching Techniques](#) URL is <http://youtu.be/1By32B1MTLg>

[www.Video.Google.com](http://www.Video.Google.com) Words on website: [How to be a Google Expert](#), URL is [http://youtu.be/GEq3M\\_Dqk5o](http://youtu.be/GEq3M_Dqk5o)

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