Teaching EFL/ESL Students How to Use Search Engines and Develop their English

Rupert Herington

r.herington [at] leeds.ac.uk

University of Leeds (Leeds, England)

In this article, I briefly explain the relationship between web searching and language knowledge and suggest that students' problems may be caused as much by a lack of linguistic knowledge as by not knowing what to do. I then go on to present some classroom activities that help students learn how to use search engines and also develop a broader knowledge of English vocabulary.

Introduction

Searching the World Wide Web in English can be a difficult task for language students conducting project work, given the vast number of websites and the many possible ways of locating the information. In this article, I briefly explain the relationship between web searching and language knowledge and suggest that students' problems may be caused as much by a lack of linguistic knowledge as by not knowing what to do. I then go on to present some classroom activities, which are designed to help students learn how to search the Web and at the same time develop a broader knowledge of English vocabulary.

Search Engines

Search engines are particularly useful tools, either when the user does not know on which website(s) the information they require might be located, or when the user wants to find a particular website but does not know the location of it.

A useful definition of a search engine is given by Teeler & Gray (2000):

> "a search tool that collects information from the Web by running an automatic program which visits huge numbers of web pages. It stores this information in a database and searches it by keyword when it receives your search request. It then provides you with a list of sites that include your keyword(s)." (p.105)

Hence, search engines operate by looking through the web documents indexed with them for the words specified in a search. The main problem for the language student is to think of appropriate keywords to type into a search engine.

Language Knowledge and Web Searching

Using search engines to locate information on the Web often requires a high degree of linguistic ingenuity. My students have difficulties doing this for two main reasons:

- Firstly, they tend not think about the topic in sufficient detail before conducting a search. As a result, they may not find sufficiently relevant results to their 'searches', leading to a feeling of frustration or despair. Students need help in using their existing vocabulary knowledge in the preparation of keywords, which can be used as 'search terms' about the topic.
- Secondly, my students sometimes find only limited information about the topic because the 'keywords' they use are different in structure to the ways in which English is typically structured. In order to develop awareness of this, I draw my students' attention to the following aspects:

Word order: varying the order of keywords may produce different results. Compare a search for the topic "management and finance courses", (1 web page found), change this to "finance and management courses" (27 web pages found).

Word families: it is useful to know that 'corrupt' and 'corruption' are within the same family. Experimenting with these parts of speech will produce different results.

For example, 'political + corrupt' (8,282 web pages found) and 'political corruption' (17,616 web pages found).

Collocation: knowing which words go together may help students find relevant information. For example, "development and research"+"cars" (37,294 web pages found) compared to "research and development"+"cars" (65,383 web pages found).

Frequency: using a higher frequency word as a keyword may be easier to find information about the topic. For example, searching for 'nuclear weapon' (6,607 web pages found) instead of the more frequent 'nuclear weapons' (22,475 web pages found) produced different results.

All of the above examples were tested using the search engine Altavista. The activities in the next section are designed to provide guidance in how to use search engines and to develop awareness of English vocabulary.

Search and Language Activities

There are **two main steps** involved in Web searching, which students should learn to do.

- Firstly, to learn how to find relevant web pages.
- Secondly, to find out if the information on these pages is relevant to the topic.

Both steps involve not only knowledge of how to search but also knowledge of the language. Hence, in order to do this I designed the following activities. These can be classified as follows:

1. Search Activities

These activities involve students in learning the most effective ways of locating resources on the Web and appropriate language to use in search engines. I have found that these activities are more successful if they are focused on a particular topic. The premise being that language learning is more meaningful if it is contextualised (Kramsch, 1993).

Information is available in different places on the Web and specified in many different ways, hence web searching requires a high degree of linguistic ingenuity at times. In order to locate relevant information, it is sometimes necessary to use more than one search engine. Each search engine operates in a slightly different way. Hence it is a good idea to refer to a website such as Search Engine Watch, which explains the particular characteristics of each search engine.

2. Selection Activities

These activities involve students in learning how to choose web pages from a list of search results, which gives them good practice of reading skills. Students need to be given guidance in interpreting the results from a web search because often the brief explanation in the results does not accurately reflect the content of a web page (Cooke, 1999). Students often obtain many pages of results but do not know which web page to choose.

3. Evaluation Activities

These activities involve students in learning how to decide whether the content of a particular web page is appropriate or not by reading for more detail.

What follows is a sample of possible activities of each type, which can be completed during a series of lessons.

Search Activities

1. Which search engine should I use?
   - Draw the students' attention to the existence of search engines and demonstrate how they operate.
   - Demonstrate a search using a 'search engine' such as Altavista and then carry out the same search with 'metasearch

engines' (e.g. Dogpile), which do "not crawl the web compiling their own searchable databases. Instead, they search the databases of multiple sets of individual search engines simultaneously, from a single site and using the same interface for comparison" (Chamberlain, 2000). Explain that Dogpile does not use the word 'search' but follows the metaphor using the word 'fetch', which is useful language development.

  o Give students a list of places or things to find on the Web. Ask students to compare how accurately each search engine responds to their search requests.

2. How specific should I make my search?
   o Students should be encouraged not to type in general terms such as 'tourism' as keywords. Instead they should experiment with more specific keywords such as, 'eco-tourism in Africa'.
   o Encourage students to use inverted commas. For example, by placing the keywords "air pollution"+"cities" within inverted commas, the search engine will search for web pages containing both terms within the inverted commas together. This may produce a more focused list of results.

3. What should I type into the search box?
   o First, ask students to think about a topic such as 'Energy'.
   o Students initially can form some questions about the topic and then draw a semantic map for it, which is "a visual framework of connections between ideas" (Nation 2001:128).
   o Having done this, students can create keywords to put into the search engine. For example, they could search for: "non-renewable energy sources" or "renewable energy sources".

4. How can I find a wider range of web pages?
   o If students are finding problems locating appropriate information, then they should experiment with the language by using synonyms and antonyms of their keywords e.g. "abundant energy sources" or "scarce energy sources".
   o Encourage students to experiment with language.

Selection Activities

How do I know which website to choose from the results of a search?

Ask students to carry out a search and then get them to look at the results and answer these questions:

- Are the titles of the web pages listed the same as your search words? If yes, the web page may be relevant.
- Does the description of the site include your search words? If yes, the web page may be relevant.
- Do you know where the web page is located? Is it from a private, commercial or academic website? Do you know which country the website is in?

The last question is designed to get students to recognize the type of organisation or location based on the URL of a site. For example, for a site ending in 'ac.jp' we know that it is a university (ac) in Japan (jp).

Evaluation Activities

Ask students to choose a website from their list of 'search results'. Get them to consider the content in detail by answering the following questions:

- What is the title of the web page you have chosen?
- Where are you in the website?
- Do you know who the author of the material is?
- Does the information appear to have come from primary or secondary sources?
- Are there links to other websites about the same subject?
- Is the information comprehensive?
- Is the information up-to-date?
- What is the style?
- Is it an academic article, a newspaper article, a company report, a company information page, a government information page, an advertisement or something else?

If the page is not relevant, students should return to their list of search results and choose another web page.

Conclusion

The demands of web searching are as much linguistic as procedural and we as language teachers should not assume that language learners can use search engines to search the Web effectively in English, without some training.

In the future, search engines may become more sophisticated at interpreting users' requests. In the meantime, we must assume that the Web will continue to grow and the possibilities for finding information will become more difficult. We should continue to develop activities to help language learners learn to find information on the Web and at the same time broaden their knowledge of English.

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Search Engines

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