

The Role of the Internet in Literacy

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Literacy, according to Webster, is the ability to read and write. Individuals who can read and write printed words are deemed literate. Studies and programs cited by the California Department of Education (1996) have demonstrated that computers have improved academic achievement in reading. Others have found that computers motivate students to want to learn (Gilstrap, 1997; Rodrigues, 1997). Krashen's research (1996), on the contrary, found that computer-based reading programs are not more effective than providing quality literature in reading instruction. However, his personal experience shows that word processors are beneficial in the writing process. From his perspective most schools have computers capable of running word processors so schools should focus on expanding their libraries and making them more accessible to students.

Even if Krashen's research conclusions are correct, he is basing them on a limited view of literacy. It addresses the acts associated with literacy, but ignores the functions of literacy. The purpose and application of specific skills, such as reading and writing, are as important, possibly more so, than the skills themselves. Previously, some functions of literacy have been to spread religion, democratic ideals, and corporate information (Leu, 1997). Technological advances, such as the inventions of writing, the printing press, the typewriter, and the computer, have made it possible for people to accomplish these goals more efficiently and effectively.

In the Information Age, a current function of literacy is to gather as much relevant information on specific topics from a variety of sources in a timely manner. The Internet has made information more accessible than ever before. It is a boundless sea of knowledge that dispenses information at a click of a button. It is currently the most efficient and cost effective means for disseminating and retrieving information. It has made interaction between individuals and institutions possible, regardless of their geographical location.

As a publishing resource, the Internet is unique in its availability and flexibility. Previously, writers and artists relied on publishers and galleries to publish their work. Without the promotion of a large institution, their audience was very limited. In contrast, many organizations offer free or inexpensive e-mail and Web pages to individuals. This allows anyone with a computer and a phone line to publish on the Internet and reach a potential audience of millions. Webmasters, people who design Web sites, incorporate text, graphics, video and sound clips, and music on their sites to deliver their messages. They view their work as “works in progress” since adding to and editing Web pages is much easier and quicker than publishing a new edition of a book.

However, these attractive advantages of the Internet present new challenges for literate people to locate reliable sources. The Internet is a vast, unorganized collection of sites, many that are not based on research or sound theory. Literate people must be able to search for relevant information, navigate through different Web sites, evaluate the credibility of the information on Web sites, and communicate with people from many different countries with different cultures.

Search Engines on the Internet

The first step in research is to locate relevant information. When using the library, experienced researchers use card catalogs and other indexes to locate relevant materials using controlled key words and phrases. On the Internet, search engines appear to be the same tools to help find relevant information. Researchers simply type in a topic and the computer does all the work. However, key words and phrases are not controlled on most search engines and may display thousands of references, many of which are unrelated to the topic of interest. For example, the key word "literacy" returns over 3700 hits using Magellan (<http://www.mckinley.com/>), over 24,800 hits using Lycos (<http://www.lycos.com/>), and over 66,800 hits using Infoseek (<http://www.infoseek.com>). Web sites referenced include sites regarding early and adult literacy, but also included computer literacy, media literacy, as well as the literacy of different ethnic backgrounds. It also included programs and groups with literacy in their titles, sites that included the word "literacy" a few times in their text, and sites that may have included the topic of literacy at one time but no longer do.

Students need to learn sophisticated search techniques to narrow the topic being searched. Gilster (1997) suggests refining searches until they have fewer than fifty hits per search. After the search engine has filtered out the irrelevant sites, students can concentrate on the sites that address the exact topic of interest. He also suggests learning to use one search engine at a time. Each search engine has different rules of syntax students need to learn to refine searches. They also use different methods of searching. Some automatically survey pages regularly for key words and place them into a database. Others require Webmasters to submit their

sites and describe their content. Therefore, since each search engine has its strengths and weaknesses, students need to spend some time determining the advantages and disadvantages of using particular search engines for specific topics.

Navigation of Web Sites

After locating information in a library, researchers must glean information from the resources they found. They must have some understanding about the structures of the different resources. For example, books are often organized by chapters and include well established sources of information. Research articles in journals include the latest research and findings of specific studies. Journal articles often use several research studies to support a single conclusion.

Determining the structures of Web sites can be difficult since there are no standards to follow. This is partially due to the marketing aspect of the Internet. "New versions of Web browsers appear every 6 months, and the designs of most Web sites are updated more frequently than this" (Leu, 1997, p. 65). When new Web browsers incorporate new features, many Web designers redesign their pages to use the new features. Web designers also realize that if they are not constantly updating or changing the appearance of their web site, people may stop visiting the site. For example, Biola has changed the appearance of its front page at least twice in the last year, even though it has not significantly changed the content. Students need to learn how to navigate different types of Web sites and realize that even the Web sites they have visited may not look the same or even be in existence the next time they visit.

Web sites also include many media types, such as text, graphics, video, and sound. Students need to learn how each of these forms of communication can convey meaning and enrich comprehension (Leu, 1997). They should also be aware of the different components of the Internet. For example, they may find interesting information on newsgroups or in chat rooms and e-mail individuals or organizations for additional information. They also may ask for or find graphics in a binary newsgroup they may wish to use in their final report (Gilster, 1997)

Evaluation of Web Information

Before integrating information in a report, students need to evaluate the validity of the information. Students need to develop a critical thinking and reasoning skills to determine the author's intent when reading any text. However, this becomes more important on the Internet since the material is often not evaluated or edited by others before it is published.

Gilster (1997) gives three tips to help in the evaluation of a Web site, investigating background of the author, checking the hypertext links on the page, and communicating with the author by e-mail. Students can investigate the background of an author or organization by using a search engine to learn more about the author or to find other people's opinion about the author. They can also use the hypertext links to find others who agree with an author's opinion. If they cannot find the information they need, they can also e-mail the author to get references from the author. If none of these methods brings results, Gilster suggests that students do not use the information or to find another source for the information.

Caruso (1997) suggests similar guidelines. He also suggests students should note the creation and revision dates of the site as well as the URL, the address, of the site. If the site has not been recently revised, the site may include outdated material. If the page does not have its own domain name and is buried in someone else's account, it may be a signal that this is an individual's personal opinion that is not based on research. The URL also indicates the type of institution as educational (.edu), government (.gov), or commercial (.com). Other types of designations such as net (.net) or organization (.org) are not as descriptive.

Students also need to realize that using the Internet as a research tool does not exclude the use of other forms of research. Each form has its advantages and disadvantages (Salomon, 1997). Students should realize that the Internet is one of many resources they can use to find information and that they should take advantages of all the resources they have available.

Communication on the Internet

Possibly the most powerful aspect of the Internet as a research tool is that it connects people of all ages and cultures so they can share resources and experiences. Students have the opportunity to interact with authors, researchers, and fellow students on the Internet so they can deepen their understanding of a topic and get feedback from others (Leu, 1997).

However, participating in a global society requires students to develop interpersonal communication skills they would not normally need in their immediate environment. People from different cultures have different world views and priorities. They have different expectations of how people should act and interact with others. Students are generally sheltered from extensively diverse situations in their communities, families, and schools.

A current limitation of the Internet is that people cannot see each other as they are engaged in dialogue. This can be helpful since physical features such as race, age, or general appearance can affect communication in face-to-face situations. However, it also does not convey body language, tone of voice, or other non-verbal messages. Non-verbal communication is often very important in a message and is very difficult to reproduce with words. Internet users have developed a series of emoticons, or symbols, to attempt to convey some of the non-verbal messages. Some include the “smiley,” :-), the “smiley with glasses,” 8-), the “wink,” ;-), several variations of these symbols, and many other symbols conveying other emotions.

Conclusion

Literacy is of very little use if it does not have an application. In the Information Age, one main application is to research various topics. The Internet is a vast source of information students can access during their research. Although it allows students access to more information, it also creates problems that must be addressed.

Teachers are instrumental in teaching students to use this new technology effectively and how to evaluate the information they find. Teachers can show students how to search for information, critically evaluate the credibility of the information they find, and ask questions when they are unsure of their information. Teachers should stress that the Internet is only one source of information and teach students how to find information using other types of resources as well.

The scope of this study has focused on conducting research on the Internet and evaluating the results. Another study that should be done is on how teachers can help students synthesize the information into a report or presentation. Word processing programs on computers can be very helpful in the composing and editing processes of writing since students do not need to spend time and energy writing and rewriting the same sentences several times through several rough drafts.

Another study may address the types and extent of teacher training that is needed for teachers to be able to train students to use the Internet as a research tool. Teachers will need to have some training, especially in using Internet search engines, before they can teach students how to use them. The study should focus on the most effective ways to deliver this training, whether district or school inservices or conferences hosted by organizations are more appropriate, and the content and sequence of instruction.

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