

Global Chalkboard

Recent research has revealed a tension in dealing with the Internet as a classroom resource. The research states that students, especially younger students and those with an inadequate general knowledge base, learn content knowledge better from highly focused Internet resources presented to them in a user-friendly context. The research also indicates that students must also be given the opportunity to search the broad Internet in order to hone search and information retrieval skills. Research also supports the development of specialized "theme catalogs" or Web directories as an important intermediary step when information and skill are of equal importance. The challenge to educators is to develop a classroom management plan that supports the goals of a wide search pedagogy and narrow focus pedagogy at the same time.

Searching versus Browsing

A recent study examined student Internet search strategies (Nachmias and Gilad, 2002). This study "supports the claim that Web searching is a nontrivial complex skill" (Nachmias and Gilad, 2002). In executing this study, the researchers distinguished between search strategies and browsing strategies. Search strategies involved the use of search engines and the various techniques used to access information (e.g. keyword search, Boolean search etc.). Browsing strategies included using directories and content specific portals. They observed student success and frustration in finding information regarding the Mona Lisa, Robinson Crusoe, and apple pie. Browsing was found to be more effective than searching; however, participants with a high degree of general knowledge and computer literacy were able to use searching more effectively. The cause of the inefficiency of searching was discovered to correlate with the inability of the participant to recognize a poor search strategy and abandon it. Searchers who could accurately reflect on their search process and change midstream (called "meta-knowledge" by Nachmias and Gilad) were much more efficient searchers. In fact, the researchers discovered that unsuccessful searches took twice the time as successful searches.

Nachmias and Gilad proposed three major recommendations as a result of their study. The first was that search tools need to be

improved, not simply in their technological algorithms, but also in their acknowledgment of how people search. The second recommendation was that Internet knowledge needs better mapping. In fact, Nachmias and Gilad state, "Our findings show that using a directory or a theme catalog is a better way to find information on the Web" (481). The final recommendation was that educators concentrate on information literacy. "Users meta-knowledge and their ability to reflect on the search process should stand at the center of the curriculum" (484).

Age & Experience Affect Searching

This study reinforces similar findings in an earlier look at Middle School student behavior during 1995-98, at the advent of the introduction of the Internet into the K-12 environment (Hill, 1999). This study pointed out "Barriers to the students finding information included: student's mental model of the Internet, students background knowledge of the subject, the varied content of Web pages, non-standard interface to content, and problems caused by technology" (Hill, 1999). Freeman (2001) discovered that seventh graders were much more inefficient Web users than ninth graders in a search regarding cancer related information. Seventh graders were found to visit more Web sites while ninth graders conducted more focused searches that involved a greater degree of knowledge of the actual subject matter.

"Our findings show that using a directory or a theme catalog is a better way to find information on the Web."

— Nachmias and Gilad

Alomari (2001) discovered a great degree of disparity in Internet search techniques of "beginning, intermediate, and advanced Internet users" among his sample population of high school students required to "locate, evaluate, and integrate online information into a written report" (Alomari, 2001). Alomari also discovered that Internet search techniques

are good indicators of higher order thinking skill and that Internet searching can actually enhance higher order thinking skills due to instant feedback and information abundance. Vansickle (2000) made academic differences the focus of her investigation of tenth graders' search techniques. While she discovered no significant difference between students of varying abilities with search knowledge, she did discover significant differences with general knowledge between lower and higher academic tracks. This difference in general knowledge impacted student success or failure during Internet searches. Vansickle went one step further and

stated that teachers need to become expert at modeling search techniques to assist students in becoming successful searchers.

Lesson Determines Value of Searching

This research indicates two distinct challenges when dealing with Internet resources in the classroom. Alagbe (1997) succinctly identifies these challenges by asking educators to examine "the value of pre-determined site identifications for students versus the value of student search and inquiry." The simple answer is that both skill sets are essential for student interaction with the Internet. Based on the research, when academic content is the goal of the lesson, it is important that students be presented with the sites upfront, or in a theme catalog, to facilitate student learning of the content. This focus is especially important when dealing with younger students and those that do not have an adequate general knowledge base to negotiate an efficient Internet search. In fact, research indicates that novice Internet searchers and/or students without adequate background knowledge will become frustrated and give up, thereby effectively nullifying a teachers' lesson based on those resources (Nachmias and Gilad, 2002; Vansickle, 2000). Therefore, when the information is the lesson, focused Internet access is a key facilitator of student learning.

The other end of the spectrum is when search strategies and "meta-knowledge" is the goal of the lesson. In this environment, students of all ages and ability need an open forum to find information and integrate it into their learning. While the content of the Web pages is important for the experience of integration and the enhancement of higher order thinking skills (Alomari, 2001), the skill set of searching and examining one's own search behavior is the true objective of the lesson. The same Internet that was highly focused for the acquisition of content knowledge must now be expanded so students are able to make mistakes, learn from

them, and improve information retrieval skills.

When a school manages student Internet access, it must be especially cognizant of these dual goals and the tension between "the value of pre-determined site identifications for students versus the value of student search and inquiry" (Alagbe, 1997). The ability of a school to be able to open the Internet up to its vast reaches as well as focus students on specific content, while also offering a student-friendly Web directory, is the ideal learning environment to address the contradictory concerns revealed by recent research.

References

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