Information Literacy Skills: Comparing and Evaluating Databases

Brian A. Grismore

July 1st, 2012

Part 1: Purpose and Method

The total sum of information has always been continuously getting larger throughout human history. More recent advances in technology, especially internet access, has not only aided in increasing the amount of information but has dramatically increased the access to information, making access nearly unlimited. It is this relatively sudden and drastic increase in the ability to access information that makes information literacy so important today. My personal definition of information literacy is "the capability to locate and use information effectively." The better someone is at doing so then the more information literate that person is. Someone who consistently uses sources that are factually questionable, for example, would have a lower skill level of information literacy. The Information Literacy Portal through the University of Idaho define information literacy as: "the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information" (Information Literacy Portal, 2012).

High quality information may be more difficult to define than to recognize. It is one of those things that, more times than not, someone with any basic information literacy skills and some common sense should be able to "know it when you see it." High quality information is written comes from a reputable source and/or author(s), and the information holds up against scrutiny. The inspection can be that of the research comparing the information to other sources of information or can be in the form of the information showing up repeatedly elsewhere. High quality information is probably accurate but is not necessarily the same as factual information. For example, there are many instances of something "historical" that happened but the details that civilization thought we knew about it ends up being wrong when new evidence is uncovered.

The same can be said in the fields of science when new discoveries and advances contradict long held beliefs. So the quality of the source(s) of the information is also very important in determining the overall quality of the information. The information should be also be easily verified by other experts in that particular field and in the resources/references of the original source.

Students and educators need to know that technology and information literacy are going to be necessary skills in order for today's students to succeed in tomorrow's workforce. I agree that students will not be fully prepared to meet the challenges and expectations of society unless schools prepare them to be technologically competent and information literate (Vedra, 2004). Most students, through their lives outside of school, are going to be more technologically competent than most of their teachers. However, that does not excuse teachers from the responsibility of making sure their students know how to properly evaluate and effectively use the unlimited information that is at their fingertips. Students need to begin realizing that not all information is created the same and that developing their critical thinking skills is as important now as any other time in history.

Today's students have easier access to more high quality information than any generations of students before them. But do they know how to sort out high quality information from all the material on the Internet and do they know how to evaluate their results? Teachers, and schools, need to be providing valuable information literacy skills for their students. This paper is a comparison and evaluation of three databases. It includes strengths and weaknesses of each database based on the quality, relevance, and accessibility of information. The quantitative and qualitative results of two academically relevant queries are also compared and evaluated in reference to validity, quality, currency, and utility of the search. The first table of results is for

educational topic "technology professional development" and the second table of results is for a person who is a leader in this area "Lynne Schrum."

Part 2: Brief Overview of Databases and Criteria for Comparison

ProQuest is a growing and diverse limited liability company within the portfolio of the investment firm Cambridge Information Group. ProQuest does cost money to use as the vast majority of ProQuest content cannot be accessed from its public website, forcing me to login through the America College of Education website in order to perform the database comparison. The ProQuest database provides access to at least twenty-three online databases and adds approximately 60,000 new items each yearly. ProQuest is a large, effective, and scholarly source for researchers who have access to use ProQuest through a subscription.

The Education Resources Information Center, better known as ERIC, is an online digital library of education research sponsored by the Department of Education. ERIC seems to be operated jointly by sixteen different committees. ERIC is free to use is the location on the web where I usually go first when performing educational research. An ERIC search can access over one million items, although not always the full text of every item. I recognize my own bias but even after analyzing the databases for this assignment, I consider ERIC to be the easiest to navigate and use.

This was my first time using the Google Scholar search engine. It is owned by Google and is part of the Google universe of applications, software, websites, media, etc. Google Scholar is free to use and the size of items that can be included in a search is nearly unlimited. Google Scholar not only has access to everything on the Internet but also has access to a large number of Intranets throughout the world. Similar to any search engine or maybe even Wikipedia, Google Scholar can be an effective starting point for research and may be more effective if someone

needs a large amount of material about a very specific topic. Even though I successfully use Google as my main Internet search engine, I did not find Google Scholar to be very easy to use.

Part 3: Query #1 Results

Topic: Technology professional development						
	Total # of matches	# of peer reviewed articles	# of full text articles	# from scholarly journals	# of books	Notes on evaluating articles
ProQuest	66971	41876	60948	43707	5	Currency of articles is easy to identify; as is the number of times that the article has been cited. A simple click can narrow results either by "peer review" or "full text." Results are sorted by relevancy and this is not easy to change. However, the user may choose to break it down by publication dates. There are also many other options when performing an "advanced search."
ERIC	8075	3089	3261	3756	427	The currency of articles is even more obvious to identify than ProQuest; however I was not able to find the number of times that an article has been cited. It takes only one click to narrow results either by "peer review" or "full text." Results also seem to be sorted by relevancy and this may not be adjustable. Yet, the user is presented with many options to narrow the results just from a basic search results. There are also more options when performing an "advanced search."
Google Scholar	2.67 million	130000	1.93 million	127000	1.75 million	The currency of articles was easy to notice directly underneath the title and the number of times an article has been cited was just as easy to locate. Sorting results is also

						easy; however, there are not as many choices to narrow searches or results as the previous two databases.
Analyze a selected article for validity, quality, currency, utility						
ProQuest	I searched for the topic to be any part of the results but did narrow the search to only include full text. The first item was *Instructional Technology Professional Development Evaluation: Developing a high Quality Model* by J.A. Gaytan and B.C. McEwen. This is a valid research article that has been peer reviewed, though I would consider choosing one that had been cited more than twice. This article is also of high quality and is very detailed. The article has currency, which I believe is especially important when researching anything to do with technology, as it was written in 2010. Finally, the result also scores high for utility as the subject is well-covered. However, most of the nearly twenty pages consist of discussing other research on the topic.					
ERIC	One of the results is *Technology Integration; A Research-Based Professional Development Program* by Tori Rose Faulder. This is a thesis paper and the validity plus quality are not rated as high for me as I would rate a professional research article. Another reason or that is because this result is not peer reviewed. However, it has very good currency as it is listed as being from 2011. I am concerned about its utility as the focus of the paper seems to be about specific types of educational technologies and does not have much to do at all with professional development. This was the third most relevant result when looking for a full-text document with the key words in the title.					
Google Scholar	The first item on the list from a basic search was *Technology Professional Development for Teachers* by Lynne Schrum. This is a valid resource for the topic and has been cited 197 times according to the search results. I would consider it a quality source in learning about the topic. The currency is not as recent as I would prefer (1999) to use but the utility is exactly on subject.					

Part 4: Query #2 Results

Topic: Lynne Schrum						
	Total # of matches	# of peer reviewed articles	# of full text articles	# from scholarly journals	# of books	Notes on evaluating articles
ProQuest	88	49	49	63	2	Currency of articles is easy to identify; as is the number of times that the article has been cited. A simple click can narrow results either by "peer review" or "full text." Results are sorted by relevancy and this is not easy to change. However, the user may choose to break it down by publication

						dates. There are also many other options when performing an "advanced search."
ERIC	34	17	9	25	2	The currency of articles is even more obvious to identify than ProQuest; however I was not able to find the number of times that an article has been cited. It takes only one click to narrow results either by "peer review" or "full text." Results also seem to be sorted by relevancy and this may not be adjustable. Yet, the user is presented with many options to narrow the results just from a basic search results. There are also more options when performing an "advanced search."
Google Scholar	1750	205	707	889	1160	The currency of articles was easy to notice directly underneath the title and the number of times an article has been cited was just as easy to locate. Sorting results is also easy; however, there are not as many choices to narrow searches or results as the previous two databases.
Analyze a selected article for validity, quality, currency, utility						
ProQuest	I found it interesting that the first result was *Leading 21st Century Schools: Harnessing Technology and Achievement* by Mary L. Carter. My search topic is not even the author of the most relevant match so I give it a low score for validity. However, Lynne Schrum is cited and mentioned many times throughout this online journal article so the quality of the match is acceptable. I also give a high score for currency as the article is from 2010. Deciding on the utility of this article is more difficult than that of the other five matches being analyzed for this assignment. At first, since Schrum did not write the article, I wanted to say that the utility was not very high. But, after scanning through the article, it seems the topic and opinions of Lynne Schrum are well represented. I am scoring the utility high; however, I do not think the utility was as high as it should have been for being considered the most relevant result.					
ERIC	The third result was a book titled: *Leading Technology-Rich Schools*. It has high validity as Lynne Schrum is one of the authors and it is an entire book worth of her views and/or research. The quality and utility do not rank as high for me as I would					

	want as the person I searched for is a co-author. I think the database should have rated other items higher that she authored by herself. However, the book was published last month so the currency score is very high.
Google Scholar	The first item on the list from a basic search was *Technology Professional Development for Teachers* by Lynne Schrum. This is a valid resource for the topic and has been cited 197 times according to the search results. I would consider it a quality source from the author / search person. The currency is not as recent as I would prefer to use but the utility is exactly on person as the article is written by the person I searched for.

Part 5: Conclusions and Recommendations

This was my first experience with Google Scholar while ProQuest is the database I have used the most for the past year and ERIC is the one that I have the most experience using overall. Comparing and contrasting these two databases and one search engine was an interesting experience. Google Scholar is definitely the largest but ProQuest is the best in terms of quality. But despite these two assets, ERIC is the one I preferred using. It is free and seems to be quicker when working with specific criteria and options. I think ERIC is the best one of the three to use when a researcher is not quite sure what he wants or is more open to general/broad results. ProQuest is full of academic material that can be accessed quickly and works well when the researcher knows what kind of information he wants. After spending some extra time playing with Google Scholar, I have more success getting the kind of results I want by doing a basic Google search using more specific key words. I do not foresee myself using it for researching or teaching purposes.

My experience with teaching high school students in regard to their ability to evaluate Internet sources are that most students are quickly able to make a relatively accurate decision about a source found they located on the Internet and can quickly learn how to analyze sources. The greater issue is that the vast majority of my students are not concerned about the reliability of a source. There is also Wikipedia which is a separate issue onto itself. Many search results are

highly qualified in terms of validity, quality, currency, and utility. However, many search results are quite the opposite and either way a student still cannot rely on Wikipedia as their leading source. Students would benefit from, and I would recommend, a collaborative and school-wide curriculum to teach evaluation strategies. A high school can incorporate the instructional strategies by having each core academic department work together to develop a school-wide curriculum that teaches students how to evaluate Internet resources. Systematically educating studens about information literacy using a wide range of subjects will enable the school to meet the suggestion of Daniel Callison that "students need a repertoire of evaluative strategies" (Callison, 2009). This includes teaching students how to identify bias, providing them with examples of misinformation, and designing activities that involve the evaluation of evidence. Along the way, students will also recognize and begin to appreciate the importance of using legitimate Internet sources. Librarians, Media Center Directors, and other educational technology leaders within a school also need to put forth greater emphasis on getting teachers to use databases provided by the school system.

My role as a teacher, student, and educational researcher has led me to believe that there are two ways to best use electronic databases whens searching for and evaluating information. The two ways depend on what the user is looking for. The more a user knows a topic and the more specific information he or she is searching for; then the more detailed the search needs to be. The word databases tend to use is "advanced." I recommend filling in as much information as possible. If a user is just beginning to look into a topic for the sole purpose of wanting to do an introductory discovery of a topic then I would do just the opposite and keep the search items basic. Either way, I always recommend limiting the search to items that can be opened in full-text form. I also encourage users to be aware of information such as how many times the

matching result is cited and is it peer-reviewed, etc. This will allow him or her to make informed decisions when reading through the results. While using any information from the Internet, be able to identify where it comes from and be able to prove its worth.

Bibliography

Callison, D. (2009). Instructional trends from AASL journals: 1972-2007. Part 3: From access-measured to evaluation-measured. *School Library Media Activities Monthly, 25*(10), 25-28.

Carter, M. L. (2010). Leading 21st century schools: Harnessing technology and achievement. *Journal of Distance Education, 24*(2), 117-118.

Faulder, T. R. (2011). *Technology integration; a research-based professional development program*. (Master's thesis, Cedarville University), Available from ERIC. (ED525563).

Gaytan, J. A., & McEwen, B. C. (2010). Technology professional development evaluation: Developing a high quality model. *Delta Pi Epsilon Journal, 52*(2), 77-94. doi: EJ900494

Information literacy portal. (2012). *Core Curriculum,* University of Idaho, Moscow, ID. Retrieved from http://www.webs.uidaho.edu/info_literacy/

Levin, B. B., & Schrum, L. (2012). *Leading technology-rich schools*. New York, NY: Teachers College Press.

Schrum, L. (1999). Technology professional development for teachers. *Educational Technology Research and Development, 47*(4), 83-90. doi: EJ603731

Vedra, M. Colorado State Department of Education, (2004). *Englewood school district comprehensive plan for educational technology and information literacy* (ED483516)