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ABSTRACT

A well-designed online database system allows users to ask a computer to find only information that is relevant to their needs. A variety of databases exist, each specializing in a particular topic or type of information. Fulltext systems provide complete copies of such documents as news articles, research reports, and software evaluations. Bibliographic databases, such as ERIC, hold references to the original report or article rather than the full text and are usually searched by using key words. Non-bibliographic databases are simply collections of data. Searching a computer database involves at least three entities: the information owner who has gathered and entered the information into the computer; the database vendors, or organizations which contract with information owners and may charge a subscription fee and fee for search time; and the use of telephone lines to access the database system. The need for information should be balanced with the cost of obtaining it. It may be worthwhile to find a trained searcher to assist with a database search. A sample of 16 databases of potential interest to educators and 3 database vendors are listed. (LMM)

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Reports to Decision Makers

Online Data Bases

by Jim Pollard and Don Holznagel

Who were the Chicago Seven? What are the ten mines with the greatest production of barite? Does anyone really know how to teach reading to seventh graders? What is the average salary for a custodian in Arkansas? What are five states whose state bird is the western meadow lark?

If your answer to any of the questions above was "Who cares?" then you did well on this test. John Naisbitt (Megatrends) estimates that the amount of data in the world is doubling every 20 months. It is safe to assume that you will not need most of that data. It is also safe to assume that you do not want to wade through all of that data to get to the data which you do need. This wading task is what an online (that is, computer searchable) data base does for you. Using a well designed system, you will be able to ask the computer to find only the information which meets the criteria which you establish and to avoid bothering you with information you do not want.

As might be expected, there are a number of different data bases, each of which specializes in a particular topic or type of information. As might also be expected, there is a data base of information on data bases, the Encyclopedia of Information Systems and Services. That resource has entries for the 2030 organizations which supply some type of computer data base service.

WHAT IS A DATA BASE?

There are three general types of data bases: the full text, the bibliographic and the so-called "non-bibliographic" data bases. The full text systems are exactly that -- complete copies of documents such as news articles, research reports, and software evaluations. Typical of these is the monster of the data bases, NEXIS, run by Central Data Services. The complete text of every Washington Post, Newsweek, U.S. News and World report and several other periodicals resides on its computer. The newspaper articles date from 1977 and the magazines from 1975. (LEXUS, a similar data base for legal information is a good place to begin your search for the names of the Chicago Seven.)

In using a full text system, you will typically enter your search criteria in exactly the way it might appear in an article (e.g. "Chicago Seven"). The computer will search the data until it finds an entry with that combination of letters and print the record it finds. You can, of course,

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put some limits on the dates which are searched and the number of records you want.

Bibliographic data bases hold references to the original report or article rather than the full text. These banks are usually searched using "key words," terms which are selected as appropriately describing the subject of the document when the reference is entered. When you search, you will use only those key words which are listed in a thesaurus for the particular data base.

The greatest disadvantage to using a bibliographic data base is that you must depend on the indexer to accurately determine the content of each article. An article on oil drilling, for example, might contain a section on barite mining. Unless the indexer noticed that reference, the article would not be discovered in your search for information on the ten biggest barite mines.

The most useful of the bibliographic data bases to educators is probably the Educational Resources Information Center (ERIC), which is sponsored by the U.S. National Institute of Education. Using ERIC, you can combine keywords to target an exact topic. For example, you might combine the words "junior high," and "reading" to find articles on teaching reading to seventh graders. After receiving the references, it would be up to you to locate the original articles. Fortunately, you will be guided by relatively short descriptions of the references to help you decide if you even want to locate the journals or microfiche with the actual articles.

Non-bibliographic data bases are simply collections of data. The Bureau of Labor Statistics, for example, maintains the BLS Data Bank in which you might find salaries for various occupations in various states (including custodians in Arkansas).

Most of these data bases allow you to customize the reports you receive to some extent. The BLS system uses the TPL (Table Producing Language) to simplify selecting and displaying of information from those files.

WHERE DO YOU FIND A DATA BASE?

When you search for information in a computer data base, there are at least three entities which are involved in the transaction. There is first, the organization which has gathered and entered the information into the computer file--the owner of the information.

In some cases, the owners are the only one who have access to the information and they will search their own files for you. Such is the case with the Hymn Society of America which keeps a computer file of 2 million hymns. In other cases, you search a data base using the owner's equipment if you have the proper authority. If you are an employee of a member district, the Oregon Total Information System, which holds over 170,000 student records and administrative data for 76 school districts in that state, will allow you to ask questions of your district's part of its data base using its terminals and a piece of software which the information service calls QUERY.

The second entity which is involved in your search for information is the data base vendor. Data base owners tend to be people who have information about a particular subject. Because these are not necessarily the people who have the time, skills and equipment to allow others to browse through their information, they tend to contract with organizations which do. These organizations, the data base vendors, contract with the owners to store the information, make it available to you, and bill you. Such is the case with, for example, the Laboratory's own Resources in Computer

Education (RICE) data base. We send tne information to the Bibliographic Retrieval Service, Inc. (BRS) who then makes it available to you.

The advantage of using a data base vendor is that you have an easy way of finding the data base you need. BRS will sell you access not only to RICE, but also to ERIC, Psychological Abstracts, Dissertation Abstracts and all of those other data bases which make life as a graduate student so much different today. The disadvantage is that it costs money, usually a fee for the amount of time you spend searching and a subscription fee, either one-time or annual.

There are two major competitors selling data base information to educators, BRS and Lockheed/Dialog. Both of these organizations offer many data bases with the major ones such as ERIC available from both vendors. The commercial electronic mail systems also offer data which may be searched. These systems tend to be full text with the searches somewhat slower than with specialized vendors.

You may have anticipated who the third entity involved in your search for information is. Because you will use the phone lines, there will be charges. The chances are good that the computer which houses the data base system can not be reached with a local direct telephone call, so there will be costs for a long distance call. The costs can be quite low if you make your call through one of the companies which rent the lines at a reduced rate because they handle a large volume of traffic. If you are in a medium to large city, you can share in their savings by dialing a local number and having your call included in the volume. Even if you are not in a city served by one of these companies, it is probably less expensive to make a toll call to the nearest city which is served than to make a direct call. The major companies providing this service are Telenet, Tymnet and Uninet.

WHO SHOULD BE USING A DATA BASE?

The simplistic answer to that question is everybody should be using data bases. That arrangement would make data base vendors very rich and most school districts very poor, however. A more realistic answer is that you should balance the need for information with the cost of obtaining that information. The latter answer is, unfortunately, realistic but not particularly helpful.

As a guide, you might be interested to know the cost of discovering the answers to the questions posed in the first paragraph. The first and last questions, the names of the Chicago Seven and the states which are partial to western meadow larks, could probably be found in the NEXIS data base and the PAIS (Public Affairs Information Services) data base respectively. The searches would cost about $20 each. The PAIS search would, however, result in a reference to a book where the information could be found. In each case, using a print data base (a book) would be simple and quick. You would find the Chicago Seven in an encyclopedia and the state birds in an almanac.

The barite mines could be found using either the GEOREF data base or the GPO (U.S. Government Printing Office) data base. Fees for using GEOREF are $85 per hour while the GPO costs $35 per hour. Because of the lower cost and because the publications listed on the GPO data base are readily available, you might start with that data base. The search would cost about $15.

If you used ERIC to find articles on teaching reading to seventh graders, you would find 45 articles which were assigned both the keywords "reading"

and "seventh grade". The search and a listing of the references would cost about $20. If an article looked particularly valuable, chances are very good that a microfiche copy of the article could be found in a library close to you.

Your search for custodian salaries would be easiest on the PAIS data base which lists all sorts of data for public agencies. Searching under "wages and salaries" combined with "building service employees" would uncover two references, including the Industry Wage Survey by the Bureau of Labor Statistics. The search would cost under ten dollars.

WHAT SKILLS ARE NECESSARY?

If you try to search an online data base with training in searching skills, the chances are very good that you will eventually be successful. You are likely, however to make a substantial dent in your budget. A skilled searcher is able to structure the search in the most efficient way using the best data bases. A trial and error approach is unlikely to uncover the best descriptors for the information you need. The data base vendors offer training in most large cities and provide manuals and thesauruses when you sign up with them.

If you will not be making constant use of computer searchable data bases, the best bet is to find a trained searcher to help you. Most university libraries will do information searches, billing you for the actual charges.

If you need more information (or if you know of a particularly interesting data base), please contact Jim Pollard or Maggie Rogers at the Northwest Regional Educational Laboratory, 300 S.W. Sixth St., Portland, Oregon 97204, (503) 248-6800.

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A SAMPLER OF EDUCATIONAL DATA BASES

Abstracts of Instructional Materials/Abstracts of Research Materials (AIM/ARM)
Describes instructional materials for vocational and technical education.
Vendor: DIALOG

Bilingual Education Bibliographic Abstracts (BEBA)
Citations and abstracts concerning language instruction, culture, and minority groups.
Vendor: BRS

Comprehensive Disertation Abstracts (CDI)
Citations of dissertations on all topics. References are to Dissertation Abstracts International
Vendor: BRS, DIALOG

Education Resources Information Center (ERIC)
Educational information including research, descriptions of exemplary programs, and journal articles. Each record contains a citation and an abstract of the article. Noncopyrighted articles are available in print or microfiche from ERIC.
Vendor: ORBIT, DIALOG, BRS

Exceptional Child Resources (ECER)
Citations and abstracts of articles concerned wwith the education of handicapped or gifted students.
Vendor: BRS, DIALOG

National Center for Educational Statistics (NCES)
Just about every educational statistic which is known can be found here. The NCES office does the searching and reporting for the cost of computer time.
Vendor: Statistical Information Office
Presidential Building -- NCES, Room 101
U.S. Department of Education
400 Maryland Avenue, S.W.
Washington, D.C. 20202
(301) 436-7900

National Information Center for Educational Media (NICEM)
A listing of all types of nonprint instructional materials (film, slides, records, etc.) for all grades.
Vendor: DIALOG

National Information Center for Special Education Materials/National Instructional Materials Information System I (NICSEM/NIMIS I)
All types of print and nonprint instructional materials for students with all types of disabilities.
Vendor: BRS, DIALOG

National Technical Information Service (NTIS)
This is where you can locate the reports of government sponsored research in any topic.
Vendor: BRS, DIALOG, ORBIT

Research in Progress
Research which is ongoing or recently completed is described in this data base.
Vendor: BRS, DIALOG, ORBIT

Resources in Computer Education (RICE)
RICE provides information on educational software by subject, grade level, hardware, etc. Evaluation and producer information is also available.
Vendor: BRS

Resource Organizations and Meetings for Educators (ROME)
You will find a profile of most of the organiztions concerned with education and related disciplines as well as their meetings, projects and publications.
Vendor: BRS

School Practices Information File (SPIF)
This collection contains descriptions of the software, curricula, inservice programs, etc. which were developed using Title IV-C funds.
Vendor: BRS

Vocational Education Curriculum Materials (VECM)
Another listing of print and nonprint materials for vocational and technical education.
Vendor: BRS

Vocational Education Program Improvement (RIVE)
This is an index to the reports on research, innovative programs, and curriculum projects which have resulted from Vocational Education funds.
Vendor: BRS

U.S. Public School Directory
Directory of the public schools in the nation including some demographic data.
Vendor: DIALOG

THE VENDORS

The most efficient way to search a particular data base is through a data base vendor. The three vendors listed below will sell you access to most of the on-line data bases which you will use.

BRS
Bibliographic Retrieval Services, Inc.
1200 Route 7
Latham, NY 12100
(800) 883-4707

DIALOG
Lockheed Information Systems
3460 Hillview Ave.
Palo Alto, CA 94304
(800) 227-1960

ORBIT
System Development Corporation (SDC)
2500 Colorado Avenue
Santa Monica, CA 90406
(800) 421-7229.

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