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An analysis of 10 general purpose database programs for online features

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Abstract

The researcher questioned if school library media specialists could use general purpose database programs to introduce online skills to students. Using 10 database programs, software recommended for student use in educational articles, the researcher analyzed the programs for the 27 online search features, 11 online printing features, and 10 other online features. Grouping the programs into two grade levels, grades 3-6 and 7-adult, the researcher calculated the number and percentage of online features each program contain⁵and the number and percentage of programs with a particular feature. The individual program analysis of the five database programs for grades 3-6 found that the programs contain from 26 to 70 percent of the online search features, 45 to 91 percent of the online printing features, and 40 to 70 percent of the other online features. Sixty percent of the programs for grades 3-6 include 9 or more of the online search features while 100 percent of the programs include 5 or more of the online printing features and 4 or more of the other online features. The individual program analysis of the five database programs for grades 7-adult found that the programs contain from 33 to 66 percent of the online search features, 55 to 91 percent of the online printing features, and 30 to 70 percent of the other online features. Eighty percent of the programs for grades 7-adult include 17 or more of the online search features, 10 of the online printing features, and 5 or more of the other online features. The researcher concluded that school library media specialists could introduce a variety of online skills to students in grades 3-12 using general purpose database programs; the number and types of skills will vary with the program used.

AN ANALYSIS OF 10 GENERAL PURPOSE
DATABASE PROGRAMS FOR ONLINE FEATURES

A Research Paper
Presented to the
Faculty of the Library Science Department

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

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CHAPTER I

The Problem

Introduction

Over the last decade numerous writers have voiced concerns over the implications of living in an information age characterized by massive amounts of information accessible by electronic means. With the advent of relatively inexpensive microcomputers, the technological advances of managing information electronically have affected not only the business community, but also schools and homes. Increasing amounts of information are stored in machine-readable form that is accessible through computers (Kurland, 1983, pp. 12-13; Martin, 1984, pp. 52-60). "The ability to flexibly organize, manipulate, and communicate information is becoming an increasingly important skill for students to acquire" (Freeman, Hawkins, Char, 1984, p. 1). "To more and more of us, the ability to survive and thrive in modern society requires that we become better information handlers" (Hunter, 1983a, p. 321).

The need for developing information skills including the electronic storage, retrieval, and manipulation of information has precipitated a broadened scope of skills instruction that once was more restrictively labeled "library skills". This broadened scope of skills means

not only the traditional skills--how to use the card (or online) catalog, how to locate materials, how to use indexes, etc.--but the newer and increasingly important skills needed to search online databases, particularly the very large and varied databases accessible through services like DIALOG™ and The Source (Costa and Costa, 1983, p. 93).

The Alliance For Excellence: Librarians Respond to A

Nation at Risk (1984) addresses this need by stating that "all students should learn how to use data bases to extend dramatically their search for information" (p. 12).

As a method of information retrieval, online database searching is a relatively recent phenomenon that has become widespread only since the early 1970's (Fenichel and Hogan, 1981, p. 1). Since that time the number of databases has grown to exceed a thousand and the number of searches has multiplied to millions of searches each year (Fenichel and Hogan, 1981, p. 3). Online database searching has had a tremendous impact on information retrieval, but before the early 1980's was limited to the academic and business circles. In the early 1980's, online searching began to appear in the public schools and is rapidly winning acceptance as one method for secondary students to retrieve information ("Online Searching and Networking", 1985, p. 49). Increasing numbers of schools are offering online access to either online bibliographic databases available through utilities such as DIALOG or online information databases accessible through services

of CompuServe or The Source ("Online Searching and Networking", 1985, p. 49).

Presently, the examples of online searching at the secondary level are not universal and generally are not addressing the information needs of all of the students as stated in the Alliance For Excellence (1984). Yet, as Loertscher concludes in his article on information skills, "It appears that the profession is being asked to teach information skills beginning in elementary school rather than letting students wait until their adult years to become familiar with storing, retrieving and manipulating information in its electronic form" (Loertscher, 1984, p. 32). It is doubtful that the broad scope of information skills instruction to all students will be achieved using online bibliographic searching because of the cost, estimated at about \$3.00 per search (Fiebert, 1984, p. 6) and because "Learning to do effective online searching does take practice, and one hesitates to practice while paying for online time, particularly when teaching younger students how to do searches" ("Using MICROSearch for Student Practice", 1984, p. 43). In addition,

the majority of electronic data bases currently available were never intended for use by students in the elementary and secondary schools. Nevertheless, students facing the complexities of surviving in an information age must be able to gain access to needed information quickly through electronic means geared to their particular requirements. (Aaron, 1984, p. 28)

School library media specialists face a major challenge in instructing all students in information concepts and skills, yet the examples of online searching in the secondary schools have begun the initial steps toward an information skills curriculum. Due to the problems of cost and databases designed for adult use, school library media specialists need to search for alternative methods of teaching these skills, especially to the younger age groups. One method of teaching the storing, retrieving, and manipulating of information that has been discussed in articles in the literature is the use of general purpose database software. Loertscher (1984), Costa and Costa (1983), and Pruitt and Dowling (1985) have advised using this tool software for preparing to search online. In the educational computing field, Lias (1983), Weaver and Holznagel (1984), Kurland (1983), Taplin (1984), Freeman, et al. (1984) and Kramer and Lareau (1984) have supported using database software as a primary application for computer instruction. Hunter (1983a), Resnik (1984), and Dunfey (1984) advocate using database software for information handling in their curricular areas.

The emphasis on the electronic storage and retrieval of information in modern society necessitates additional skills instruction that will provide students with the ability to meet their present and future informational

needs. Teaching a broader scope of information skills to all students presents a major challenge to school library media specialists. The dilemmas of the additional costs of online database searching, the complexity of searching some databases, and the sophistication of the information contained in some of the databases complicate the task. One method to introduce the concepts and skills of electronic storage and retrieval of information could be the use of general purpose database software.

Purpose and Significance

The purpose of the study is to determine the applicability of database software for introducing young people to the concepts and skills of retrieving information in electronic form. The researcher analyzed ten general purpose database software programs to determine if they could be used for teaching retrieval skills in grades 3-12. The software programs, recommended by the producers for grade 3 through adult, range from the very simple to the more complex.

No software package that costs between \$50 and \$300 could possibly authentically simulate an online database, but the two do share some similarities. In each information is stored and can be retrieved; both maintain a "database" which is a collection of information in machine readable format. The terminology of file, record,

and field apply to both online databases and database software.

The results of the study could be significant if the database software analyzed meets more than minimal requirements for the searching of online databases. It could add to the research both in the area of information skills methods and in the area of computer applications for education. School library media specialists need alternative methods of introducing information skills to all students across grade levels. If the database software proves to be capable of introducing the broadened scope of information skills and the concepts of information handling, it would be feasible to begin teaching concepts directly related to online searching to younger children--possibly as early as third grade. Database software packages can not replace the need for online database searching, but they may serve as an adequate introduction to the concepts and skills necessary for online searching.

Statement of the Problem

The primary concern of this study is the application of general purpose database programs to the current requirements of online searching. The capabilities of online search systems can be divided into three categories: search features, printing features, and other

online features. The questions to be answered by the study will be divided into these three categories and sub-divided into the two grade level categories based on the producers' recommendations. The grade levels fall roughly into two categories: elementary grades 3-6 and grades 7-adult. What online system search features are included in general purpose database programs for elementary grades 3-6? What online system search features are included in general purpose database programs for grades 7-adult? What online print features are included in general purpose database programs for elementary grades 3-6? What online print features are included in general purpose database programs for grades 7-adult? What other online search system features are included in general purpose database programs for elementary grades 3-6? What other online search system features are included in general purpose database programs for grades 7-adult?

Hypotheses

The general purpose database programs were analyzed for 27 search features. The researcher predicts that 50 percent or more of the general purpose database programs for grades 3-6 will have nine or more of the possible search features. The researcher predicts that 50 percent or more of the general database programs for grades

7-adult will have 14 or more of the possible search features.

The general purpose database programs were analyzed for 11 printing features. The researcher predicts that 50 percent or more of the general purpose database programs for grades 3-6 will have four or more of the possible printing features. The researcher predicts that 50 percent or more of the general database programs for grades 7-adult will have seven or more of the possible printing features.

The general purpose database programs were analyzed for 10 other online features. The researcher predicts that 50 percent or more of the general purpose database programs for grades 3-6 will have three or more of the possible other online features. The researcher predicts that 50 percent or more of the general purpose database programs for grades 7-adult will have four or more of the possible other online features.

Assumptions

The researcher is making several assumptions concerning the study. The first set of assumptions is based on information needs. First, the researcher assumes that students require information for either job-related or school-related activities or personal needs both now and in the future. Second, it is assumed that the

students need the skills to access information and that all of their information needs will not be met by an outside person or party. Third, it is assumed that the students are receiving traditional library skills instruction.

The second set of assumptions is based on computer availability and use. First, the researcher assumes that most schools have microcomputers. Second, it is assumed that the microcomputers are available for student and faculty use. Last, it is assumed that many media specialists, given the time to learn the program, are familiar enough with microcomputers to use a general purpose database program.

Limitations

The study made no attempt to analyze all of the hundreds of available database software programs or all features of such programs. The researcher limited to ten the general purpose database software programs that had been recommended by authors of articles concerned with the educational use of database software and that were available for preview or rental. The software packages were also limited to ones which could be used on the Apple II series of microcomputer without CPM. The study utilized programs that could be defined as file management type of software, but not the higher level of database

management systems that require the user to have multiple, complex programming skills.

Definition of Terms

bibliographic database: a machine-readable file representing sources of information such as journal articles, monographs, research reports, etc.

database: a collection of related information stored in machine-readable form accessible by a computer.

Spelling variations appear as data base and data-base.

field: a portion of a record that stores a specified category of information, e.g., author, title, publisher, etc.

file: a collection of related records

general purpose database software: a computer program that allows the user to design a file of information and the fields in that file and to enter, store, search, and retrieve that information.

online database searching: direct dialogue-type of communication between the user and a distant computer system that provides machine-readable files of information from which data can be retrieved.

record: one set of fields in a file.

search commands: terms recognized by the computer system that cause it to carry out certain functions. The recognizable terms often vary from one system to another.

search strategy: a set of planned search terms in a particular order and relationship in which the request is communicated to the computer. The strategy includes identifying concepts in the information need, selecting the appropriate file and terms representing the concepts, determining the relationship between the terms, and manipulating the terms and relationships during the search.

tool software: computer programs that allow the user to accomplish a task with a savings in time and effort, e.g., word processing programs, statistical calculation programs, database programs, and spreadsheet programs. This term is often used to distinguish a type of program other than computer-assisted instruction programs.

Chapter II

Literature Review

The literature review focuses on materials published on three topics: information skills, online database searching, and database software. Online database searching will be discussed in three sections: the rationale, the examples of use in the secondary school, and the search skills necessary for online searching. Database software will be discussed in three sections: the rationale, examples of use and recommended use in elementary and secondary schools, and evaluation criteria.

The limited number of research studies that have been published on the three subjects will be examined first, followed by the review of opinion papers, the majority of the literature review. The opinion articles will be subdivided by the field that generated them: library media field, educational computer field, other curricular areas, and the computer science field.

Information Skills

Published opinion articles focusing on information skills fall primarily into two groups: those written by persons from the library media field and those written by persons concerned with the educational uses of the computer. Each of the authors from the library media field have expressed concern over the handling of infor-

mation in a time marked by both an over-abundance of information and a technology that permits access to information if the user has the skills necessary. All contend that coping with the information age requires that school library media specialists redefine the skills area that has traditionally been labeled "library skills".

In their book focusing on the uses of microcomputers in libraries, Costa and Costa (1983) advocate not only the traditional library skills, but also an expanded range of skills including the ability to access online databases (Costa and Costa, 1983, p. 93). Examining the recommendations of the Alliance for Excellence (1984), Aaron (1984) draws several conclusions about the necessary changes in school library media programs. She concludes that

The whole area of providing access to information as opposed to the current practice of generally providing access to the physical unit (book, film, etc.) through the card catalog or a periodical index has tremendous implications for those teaching information skills. (Aaron, 1984, p. 28)

Other writers in the field have enumerated various skills that they have classified as information skills. Lundin (1983), Loertscher (1984), and Malley (1984) include the standard skills such as listening, viewing, and reading, but also include skills required for the manual and electronic data gathering, for analyzing information, and for coping with the type and amount of

information retrieved (Lundin, 1983, pp. 8-12; Loertscher, 1984, pp. 32-33; Malley, 1984, pp. 50-51). Lundin recommends that the primary objective of skills programs must change from training independent users to training users in resourcefulness, "the knowledge and abilities to use alternate support systems" (Lundin, 1983, p. 8). Prescribing an extensive list of information skills and related thinking skills, Loertscher maintains that the skills required for handling information in electronic form must be taught to children and not just to adults (Loertscher, 1984, p. 32). Malley defines the skills as including the traditional library skills as well as "communication skills, study skills, reading skills, and a mixture of skills which might be conveniently described as learning skills. All of these skills have one thing in common--the handling of information" (Malley, 1984, p. 7). Malley sums up the change in the skills area: "The essential difference between a programme of library skills instruction and a programme of information skills instruction is that the former is library-centred and the latter is information-centred" (Malley, 1984, p. 50).

Several of the opinion articles not only define the new information skills, but also recommend specific activities for teaching the broader range of skills. Mancall (1984), Swigger (1983), Loertscher (1984), Lodish (1986), and Tenopir (1986) advocate teaching students to

search online databases (Mancall, 1984, pp. 64-65; Swigger, 1983, pp. 12-14, 68; Loertscher, 1984, pp. 30-34; Lodish, 1986, pp. 39, 43; Tenopir, 1986, pp. 18-19).

After stating that students will need the skills to access information both in libraries and from computer databases for personal and job-related needs, Mancall states "In order to maximize the students' eventual use of these computerized information storage systems, they will need a new set of information-seeking skills" (Mancall, 1984, p. 65). Swigger argues that computer databases should be added to the list of resources that students are taught to use (Swigger, 1983, pp. 14-15). Loertscher maintains that students need to be taught to use online computer databases, but he recommends using local databases produced with database software and commercial in-house databases to introduce the skills involved with the electronic storage and retrieval of information to younger ages (Loertscher, 1984, pp. 32-33). Lodish recommends that media specialists prepare themselves to teach online database skills in order "to teach the students of the information age how to find resources not only in their own school's library media collection, but also from outside sources" (Lodish, 1986, p. 39). Tenopir not only recommends that online database searching be introduced to widen the students' information resources, but she also

states that the students learn many skills while learning to search an online database:

Students learn research and problem-solving skills as they decide on a topic, narrow it, and determine the best data bases to search. They use logical thinking processes to develop search strategies and work with the librarian to refine their questions into appropriate queries for a computer search. The major online systems for research require knowledge of set theory and Boolean logic (Tenopir, 1986, p.18).

Although in different context, both Mancall (1984) and Loertscher (1984) have addressed the issue of skills transfer. Loertscher contends that the skills for searching locally produced databases will transfer to searching online databases (Loertscher, 1984, p. 33) and Mancall argues that searching an online bibliographic database will transfer to other types of databases (Mancall, 1984, p. 65). She states:

In using a computer to search bibliographic records, students will learn something about how these records are organized and what this organizational structure means for successful retrieval. The concepts inherent in this process are essentially transferable to other types of record and document retrieval systems. (Mancall, 1984, p. 65)

A number of articles that have expressed concern with the promise and dilemma of using microcomputers in the classroom have also declared a need for a broader scope of information skills. Becker (1983) calls for curricula to teach students computerized information skills:

Just as library skills are considered to be a basic subject in the secondary school curriculum today, so might we consider such skills as... learning to manipulate a large data base to retrieve

particular pieces of information. Development of prototype curricula...should be a priority in education today. (Becker, 1983, p. 44)

Introducing a research study in the area of database software use in education, Freeman, et al. (1984) agree that skills in organizing, manipulating and communicating information are fundamental skills that students need to learn (Freeman, et al., 1984, p. 1). While discussing the possible impact of videotex on schools and libraries, McKenzie (1984) contends that the information skills traditionally taught need updating and are "as slow-moving and out-of-date as the wooden plows pictured in aging textbooks about developing nations" (McKenzie, 1984, p. 10). He specifically defines skills required to tap information online:

It takes special skills to do computer word searches--skills we rarely teach in school. Venn Diagrams are important once again after being thrown out of school with New Math. Students must learn to define the relationships between key words in order to conceptualize the intersections that become answers to questions.... Research with the computer can liberate students from tedious information gathering and bring focus to the real object of research--the discovery of relationships, the test of theories, and the explanation of the unknown. The Information Age demands new basic skills. (McKenzie, 1984, p. 10)

In addition, four writers have expressed the need for teaching information handling skills while integrating the use of the computer with their particular curricular areas. In the social studies area, Hunter (1983a), Pon (1984), and Resnik (1984) advocate using the computer for

teaching students skills in gathering, storing, manipulating, and retrieving information (Hunter, 1983a, pp. 321-324; Pon, 1984, pp.28-30; Resnik, 1984, p. 32). In the language arts curriculum, Dunfey (1984) recommends using the computer for research projects to teach the students how to access information via computer to meet "the changing needs of our students in a world of 'information explosion'" (Dunfey, 1984, p. 26).

All of the authors regardless of their field have advocated teaching new concepts of information handling. A consensus has developed that a society that increasingly relies on information stored and retrieved electronically must teach students the skills to access and handle that information.

Online Database Searching

Several authors of opinion papers have discussed the advantages and disadvantages of using online databases. The use of online databases has certain advantages over a manual search for information. Chen and Schweizer (1981) and Mancall and Deskins (1984) both state that the online search is faster than the manual search, more flexible because of the increased number of access points, more current information can be retrieved, and more comprehensive search can be executed (Chen and Schweizer, 1981, pp. 5-6; Mancall and Deskins, 1984, p. 35). Mancall and

Deskins conclude that "At the present time, online searching is not a replacement for use of printed indexes, and it may never be. It is, however, an additional and an important way to gather bibliographic references to potentially useful materials" (Mancall and Deskins, 1984, p. 33). In an article about using online searching with high school students, Pruitt and Dowling (1985) agree with Mancall and Deskins that useful information can be retrieved by online searching and in the situation of using particular subjects (e.g., computer crime) online searching can retrieve greater amounts of information than the printed indices. The use of Books in Print and The Reader's Guide to Periodical Literature retrieved 13 items while online searching retrieved 142 articles from Magazine Index alone and a total of 459 items in all the computer databases accessed through DIALOG (Pruitt and Dowling, 1985, pp. 52-59). The authors conclude that the online searching had "certainly provided the student with resources that would otherwise be unknown to him" (Pruitt and Dowling, 1985, p. 59).

The disadvantages of online searching are the possible malfunction of equipment, which could result in loss of time, effort, and money; the insufficient amount of information that is retrospective or available in particular areas such as the humanities, which can restrict what subjects can result in successful searches;

and the costs of searching online (Chen and Schweizer, 1981, p. 6; Mancall and Deskins, 1984, pp. 34-35). Using the classroom rate through DIALOG, Fiebert (1984) estimates that an average cost per search was under \$3.00 (Fiebert, 1984, p. 6).

Examples of online database searching at the secondary level appear in the literature. Craver, Pruitt and Dowling (1985), and Wozny (1982) discuss studies using online database searching with secondary students. In opinion articles, Fiebert (1984), Schneider (1985), Wheeler (1983), Levinson and Walcott (1985) and Minnich and McCarthy (1986) discuss their experience with online searching with students.

Craver describes using online database searching with 67 college-bound seniors over a two year period at University High School in Urbana, Illinois. Using a post-course evaluation to measure students' comprehension and an evaluation form completed by the students, Craver concludes:

The results are significant. More than 87 percent of the students thought the course had provided an adequate introduction to online searching. No less than 98 percent of them had scores in excess of 80 percent on the post course examination. These positive results would appear to indicate that not only can high school students benefit from such a course, they also can be taught to form their own information searches in the future. (Craver, 1985, p.137)

Pruitt and Dowling (1985) describe the use of online database searching in 22 high school library media centers

in Montgomery County, Maryland (Pruitt and Dowling, 1985, pp. 47-60). The purposes of the project were to introduce the students to online information retrieval and to increase the amount of resources available to the students. The authors recorded a dramatic increase in the number of online searches from 1982-83 school year to the 1983-84 school year and that the largest number of searches was in the area of current affairs. As stated earlier, the authors reported a dramatic increase in the amount of information retrieved on particular topics (Pruitt and Dowling, 1985, p. 49). The authors conclude:

In Montgomery County Public Schools it is evident that there are library media specialists who see the great value of providing access to online databases and there are growing numbers of students who are aware of such services and use them. (Pruitt and Dowling, 1985, p. 60)

Wozny (1982) included online bibliographic searching in her study of the use of libraries and library resources by ninth grade honors students in science (Wozny, 1982, pp. 35-42). The purposes of using online bibliographic searching as one method of retrieving information were to introduce the students to a new technique of information retrieval and to create an awareness of the breadth of information available. Although 81 percent of the students' bibliographies did not include references that had been retrieved online, Wozny considered the experience a valuable one:

Online searching must be viewed within a larger perspective. The students recognized computerized bibliographic searching as a special way to retrieve information. Moreover, online searching introduces a world of information to students-- current, appropriate materials in a new or formerly little used formats. (Wozny, 1982, p. 41)

Wozny concludes that "online searching provided a new opportunity for assisting students in developing search strategies. It generated enthusiasm among the students for the research process. More importantly, it expanded the students' conceptions of the different type of information available" (Wozny, 1982, p. 42).

Fiebert (1984) reports online database searching at Radnor High School in Radnor, Pennsylvania. She states that the media center has offered online searching to faculty and students since 1980 and now include it in the ninth grade library skills unit (Fiebert, 1984, p. 6).

Schneider (1985) describes an online database searching pilot project used with one sophomore English class in Ottumwa High School in Ottumwa, Iowa (Schneider, 1985, p. 10). In Schneider's opinion, the experience increased the library skills of the students, increased the amount of information that was available to the students, was a challenge to both students and faculty, provided incentive to the student to find information, and created a good working relationship between the library and the students (Schneider, 1985, p. 10). Schneider states that "we need to look to the future of knowledge

and the new ways to retrieve information. Online searching is an information retrieval technique which is now being used in all areas of education and business" (Schneider, 1985, p. 10).

Wheeler (1983) discusses online bibliographic searching and states that he uses this service for high school students seeking information at Missisquoi Valley Union High School in Swanton, Vermont. In addition to using online searching as a reference service, he demonstrates that use to college-bound students (Wheeler, 1983, pp. 18-20). He explains that "Since many college libraries offer online searching, our students will be prepared to fully utilize such services" (Wheeler, 1983, p. 18).

Levinson and Walcott (1985) discuss their use of online database searching as a part of a pilot project with high school students at Rutgers Preparatory School. Working with a physics class researching alternative energy sources, the authors split the class into a traditional research group and an online research group. The group of students using DIALOG prepared the search strategy, but did not perform the actual search. The students voiced dissatisfaction with not conducting their own searches and with the results of the searches. Much of the information came from professional journals and was too technical for the students. Although aware that the

project was not totally successful, the authors felt that "the intellectual process of classifying subject matter and expressing the search in precise language of the discipline is a strong educational justification for database use" (Levinson and Walcott, 1985, p. 57). The authors concluded that "on-line searching will be productive in schools" if the students conduct their own searches, if the cost of searching and full text printing is controlled and if more generalized educational databases are developed (Levinson and Walcott, 1985, p. 57).

Minnich and McCarthy (1986) discuss their use of online database searching with ninth grade history students as a part of a current events unit that focused on developing critical thinking and writing skills. Each of the four classes spent time clipping articles from the daily New York Times, reading articles from the Current New York Times on Microfiche, reading articles in current periodicals, and reading either newspaper or periodical articles located by searching online databases. Each of the students was taught to search online and the authors state that "the students' enthusiasm for online searching greatly contributed to the success of the project" (Minnich and McCarthy, 1986, p. 46).

Large numbers of books, textbooks, manuals and articles describe online bibliographic searching and the

search skills necessary for online searching. Several of the authors give a general overview while others discuss the specific skills. All of the books, textbooks, manuals, and articles form a consensus on the skills necessary to search online. Borgman, Moghdam, and Corbett (1984), Costa and Costa (1983), Fenichel and Hogan (1981), and Meadow and Cochrane (1981) agree that the steps to searching include defining the research question, identifying major concepts, selecting the appropriate database, translating terms into usable descriptors, combining terms using connectors, printing results of the search, and modifying the search when necessary (Borgman, Moghdam, and Corbett, 1984, p. 13; Costa and Costa, 1983, p.93; Fenichel and Hogan, 1981, pp. 49-57; Meadow and Cochrane, 1981, p.28). Borgman, et al. (1984) add to these skills the specific skills needed in using terminals and telecommunications equipment and in using particular database commands or protocol.

The most thorough explanation of search skills can be found in a chapter on the online search by Katz (1982), in the manual by Chen and Schweizer (1981), and in the user's manual from DIALOG (Katz, 1982, chap. 6; Chen and Schweizer, 1981; and Enhanced DIALOG Searching, 1985). These sources not only outline the steps, but also clearly define specific skills necessary for online searching: key term or subject search, online thesaurus, word

proximity, truncation, Boolean logic, positional logic, controlled vocabulary, free-text vocabulary, limiting, range searching, saving searches, sorting and printing outputs. These three most specific sources agree on what skills are necessary for effective online searching.

Database Software

Only one research study was found on the educational use of database software. Freeman, et al. (1984) sought schools in the northeastern part of the United States which were using database software in the classroom. The purpose of the study was to determine the goals and ideas behind using the database management systems (DBMs), the content and context of activities using the DBMs, and some interpretations of the impact on the children and the classroom from the use of DBMs. They found eight schools, elementary through middle school, which were using DBMs with students.

Using interviews with the teachers and some administrators, librarians, and students, the researchers asked questions concerning the teachers' background in teaching and computers, the number and process of information-handling activities assigned by the teachers, and the use of the DBMs and its relationship to the students' information-managing skills. The researchers discovered that the elements that affected the type of

classroom activities were 1) the selection of software, 2) whether the school emphasized computer programming/literacy or computer application, 3) the teacher's background, and 4) the teacher's view of the information-handling process (Freeman, et al., 1984, p. 3). The interviews revealed that the uses of databases ranged from business use to personal interest files to major research projects. The researchers discovered that the teachers were interested in a wide variety of information skills: "brainstorming, notetaking, categorizing, learning to generalize and to be more specific, analyzing data, reading and organizing information critically and effectively and finally, asking probing questions that relate pieces of information in interesting and unique ways" (Freeman et al., 1984, p. 13).

The researchers concluded that DBMs as an information tool have not been examined or considered by many teachers and those that had begun using DBMs had wide varieties of goals, expectations, and activities for the tool software. In two of the schools, the teachers had used the tool with research activities that were integrated with the regular curricula, but in the other schools the activities had little or no relationship to the existing curricula. The researchers found that some of the schools were successful in using this tool to help students handle information, but in other schools the

software compounded the information-handling process and became an additional problem of its own (Freeman, et al., 1984, p. 13).

Supporting the use of the computer as a tool and emphasizing that the tool role for the computer could be more important to education than programming or computer-assisted instruction, the researchers state:

Database management systems do not offer a simple solution to the problems of learning to access and use information effectively, but with creative design and greater attention to the whole information management learning process, DBMs may become an important member of a whole family of tool software for classroom use. (Freeman et al., 1984, p. 23)

The remainder of the materials focusing on the rationale for database software use are opinion papers that have been published in connection with the library field, the educational computing field, or specific curricular areas. Writers in the library field have discussed using general purpose database software as one technique of teaching information skills. Loertscher (1984) advocates a continuum of database use that advances from students searching their own databases to them searching progressively more sophisticated databases and finally going online to search remote databases (Loertscher, 1984, p. 33). He states that "At our fingertips are a host of new tools which we can use to introduce children and young people to the information age. Good information storage and retrieval programs are

now available for Apple and other common microcomputers" (Loertscher, 1984, p. 33). He concludes:

If young people can search their own data bases, they are subtly introduced to a whole host of problems such as 'garbage in, garbage out' and the tough problems of search terminology. They should progress from there to the actual searching of data bases created specifically for them. (Loertscher, 1984, p.33)

Costa and Costa (1983) discuss uses for the micro-computer in the library and specifically discuss preparing for bibliographic searching. They prescribe that "One effective method is hands-on training using an actual database, which might be an online catalog, or a locally administered database on the district or state level" (Costa and Costa, 1983, p. 93).

Although their primary concern is to discuss online database searching with secondary students, Pruitt and Dowling (1985) report that a group of Maryland school library media specialists developed a "Computer Literacy" section for the standard Maryland County skills curriculum (Instructional Objectives for Information Retrieval and Media Production, 1978). The parts of this section that dealt with databases included the students not only identifying parts of databases, but also creating their own databases. The list of objectives progresses from working with their own databases to typical online skills such as identifying descriptors and accessing online information (Pruitt and Dowling, 1985, p. 48).

While school library media specialists are searching for methods of teaching broader information skills, persons in the educational computing field are questioning the appropriate role for the computer in education. A number of writers have advocated using tool software to illustrate the abilities and limitations of computers. One tool that is endorsed repeatedly is database software. Lias (1983) defines the fundamental role of the computer in education as falling in six areas: word processing, problem solving with BASIC language, data bases, network data banks, electronic spreadsheets, and statistical calculation systems. He argues that the type of micro-computer selected for the school is unimportant as long as it is capable of being used in these six areas to teach the students these primary uses (Lias, 1983, pp. 20-22). In their examination of available courseware, Weaver and Holznagel (1984) predict that tool software will gain prominence over computer-assisted instruction and the use of database software will be one such tool application (Weaver and Holznagel, 1984, p. 6). Kurland advocates using tool software in the classroom and states:

Research is needed to analyze the current software tools being used in schools; to evaluate the many other software tools which are currently available, irrespective of their intended audience; and to develop better means of integrating software tools into the classroom context. (Kurland, 1983, p. 12)

Taplin (1984) discusses the advantages and potential hazards of using small databases with students. The advantages that Taplin lists are that the use of small databases 1) encourages students to examine relationship between elements of information, 2) reduces questions into specific elements, 3) reduces the amount of time consumed in manual search, and 4) improves students' attitude toward research. He states:

This form of teaching exposes students to the information technology of their present and future worlds, but in a form that avoids it being passed over as mysterious or magical. Working with simple data-bases can establish a foundation of understanding and familiarity that will be important for how they will later come to view information sources and practices in years to come. (Taplin, 1984, p. 20)

While examining the disadvantages, Taplin warns that "the value of a tool resides not entirely in the tool itself, but also in how the tool is used" (Taplin, 1984, p. 20). The author cautions that using small databases 1) requires time to learn the commands of the program, 2) could be overused, and 3) could introduce skills without consideration of student readiness.

In an article about computer application ideas for high school students, Kramer and Lareau (1984) introduce what they call "databasing". The authors state that the use of database software with students will develop skills in "pattern recognition, sequencing, advanced research techniques, computer literacy, classification and

keyboarding--that will be useful to them in their academic research and in the business world" (Kramer and Lareau, 1984, p. 69).

Other writers concerned with the use of database software advocate using this tool software to teach particular information skills that relate to their area. Hunter (1983b) suggests using database software in the social studies to help teach "concepts about organizing, storing, retrieving, interpreting and applying information --skills that will be useful no matter what content areas or computer systems they may work with in the future" (Hunter, 1983b, p. 55). She also states that "Students can explore their data base by formulating hypotheses and questions, and developing strategies for retrieving selected information" (Hunter, 1983a, p. 323). Resnik (1984) argues that the social studies content should focus on the processes of gathering, classifying and analyzing data and then reaching generalizations based on the analysis of the data. He states that the use of database software can make this process possible (Resnik, 1984, p. 32).

Beyond the articles discussing the rationale for using database programs, one finds articles that contain either examples of actual use in the classroom or recommended teaching units using database software. Nine examples discuss the use of database software. Resnik (1984)

reports that a second grade class developed a file of favorite things and fourth grade students developed a file on California history (Resnik, 1984, p. 32, 38, 42). Pon (1984) describes using database software with fourth graders in a California Indian unit (Pon, 1984, p. 28-30). Hunter (1985a) states that two units were developed, one on TV watching habits and the second on states and countries of the world (Hunter, 1985, pp. 54-58, 136; 1983b, p. 50-51, 55-57). Greenglass (1985) describes her use of a database program for recording the students' reading favorites (Greenglass, 1985, pp. 143-146). One class of first graders utilize a file that contains students' names, birth dates, and how tall they are (First Graders Learn Database Tasks at Private School, 1984, pp. 73-74). Olds and Dickenson (1985) describe an assortment of uses of database programs including a book file and a spelling word file created by sixth graders, a geography file created by junior high students, and a file of facilities and services for the handicapped created by high school students (Olds and Dickenson, 1985, p. 46). Rotenberg describes the use of a database program by 11 and 12 year old students. The database file was used to store information about impressionist artists and the students' interpretation of the impressionist art that they had seen at an exhibit. Printouts of the file were exchanged with school students in France who had also

visited the traveling exhibit (Rotenberg, 1986, pp. 12-13).

The remaining articles recommend teaching units using database software. The subject areas recommending database use are diverse. For elementary students, a joke file (Early Grades Ideas, 1984, p. 58), a nutrition file (Friar and Rotenberg, 1985, pp. 13-19), a dinosaur file (Woldman and Kalowski, 1985, pp. 14-19), history and geography files on the 50 states (Swett, 1985, pp. 18-24; Rosenzweig, 1985, pp. 16, 21), and an American Indian file (Hunter, 1985b, pp. 10-15) are recommended. At the secondary level, pre-writing exercises and a marine animal file (Kurland, 1983, p. 11), research projects (Dunfey, 1984, p. 26; Solomon, 1986, pp. 37-40), and an almanac database (Walker, 1985, p. 43) are recommended.

Several of the authors, reporting or recommending use of a database program in the classroom, have also recommended various programs to use with students.

AppleWorks was recommended by Hunter (1985a), Olds and Dickenson (1985), and Loertscher (1984). Bank Street Filer was recommended by Dunfey (1984), Hunter (1985a), Swett (1985) and Olds and Dickenson. Classification was recommended by Friar and Rotenberg (1985). D Base II was recommended by Loertscher. DB Master was recommended by Loertscher and Pon (1984). Data Fax was recommended by Hunter (1983b). Friendly Filer was recommended by Friar

and Rotenberg, Hunter (1985a), Olds and Dickenson, and Swett. List Maker was recommended by Hunter (1983b). Master Type's Filer, formerly a home file program named Phi Beta Filer, was recommended by "Early Grades Ideas" (1984), Friar and Rotenberg, Olds and Dickenson, and Swett. Notebook Filer was recommended by Friar and Rotenberg, Olds and Dickenson, and Hunter (1985a). PFS: File/Report was recommended by Dunfey, "Early Grades Ideas", Friar and Rotenberg, Hunter (1985,1983b), Loertscher, Resnik (1984), Olds and Dickenson, and Swett. Quick File was recommended by Pon and Resnik (1984). Secret Filer, a part of the Fact or Fiction Tool Kit was recommended by Friar and Rotenberg, Loertscher, Olds and Dickenson, and Swett (see Appendix A for a list of producers of these programs).

The computer science field has generated most of the articles that evaluate database software, but two articles published from the library media field have discussed the criteria for evaluation. Both Costa and Costa (1983) and Langhorne (1983) propose criteria for evaluating database software. These authors evaluate the database software for its use as a management tool in the library, not as software for use with students. Costa and Costa recommend evaluating the software based on the criteria of ease of data editing, ease of screen design, flexibility of record size, file storage, ease and flexibility of searches,

flexibility of report design, and data security (Costa and Costa, 1983, pp. 68-69). Langhorne's evaluation criteria are ease of use, size, editing and printing capabilities, reliability, price, security, and support (Langhorne, 1983, p. 17).

Only four published articles focus on evaluating database software for educational uses. Hunter (1985a) recommends several programs because of their ease of learning and ease of use. The criteria used in the discussion are ease of learning, ease of use, room for data, naming data items, file size, ease of retrieval, and control of presentation (Hunter, 1985, pp. 55-58, 136). Pon (1984) examines three programs based on the criteria of flexibility, search capabilities, form redesign, overall ease of use, ability to handle spelling errors, and help screens (Pon, 1984, p. 30). Swett (1985) judged each of the five programs as "child usable" and used the criteria of program, publisher, price, computer compatibility, grade level, fields per record, search function, printout, special features, and overall evaluation (Swett, 1985, p. 22). Olds and Dickenson examine seven programs based on the criteria of ease of use, smoothness of operation, data capacity, speed, searches more than one field at a time, accepts more than one criterion for each field, different format options available for screen display and printout, permits adding or altering fields in

predefined records, permits designing the layout of a record or file from scratch, and databases available to accompany data management program (Olds and Dickenson, 1985, pp. 48-49).

The computer science field produced the remainder of the database evaluation literature. Often the programs examined were expensive, complex business programs with greater capabilities than most software that is usable with students in a classroom. Many of the programs were relational programs that require programming skills; therefore, not all the criteria that are listed will apply to database programs usable with students. Akers (1982) surveys existing database management system software for the microcomputer. He does not evaluate reliability or ease of use, but does include in his criteria nonredundancy of data, flexibility, data integrity, data dictionary, host language interface, and query processing (Akers, 1982, pp. 46-62). Blochowiak's (1981) criteria for evaluation are portability, maintainability, and current utility, which includes system creation, data entry, retrieval, and report printing (Blochowiak, 1981, pp. 274-300). Foster (1985) evaluates the database programs on size capabilities, levels of sorting, search speed, and cost. He recommends that consumers evaluate what they wish to purchase according to what use they have for the program. The criteria he offers for their program

evaluation are the data entry form, the data files, the field attributes, the query facility, file reconstruction, report generator, and product cost (Foster, 1985, pp. 104-107). Glover (1982) evaluates the database software on the criteria of documentation, menu, format creation, printing capabilities, format changing, default capabilities, and searching of multiple fields (Glover, 1982, pp. 96-99). Heintz (1983, 1984) evaluated programs on the maximum number of keys, programming language, security, data integrity, searching methods, data base alteration, multi-user functions, maximum number of files in use at one time, updating features, abilities to perform conditional searching, report generating, report formatting, use with other programs, ancillary programs, updating and editing features, inquiry functions, and miscellaneous (Heintz, 1983, pp. 52-66, 148-150; 1984, p.58-69). The editors of Feelings II evaluate database software on the criteria of database definition and creation; data input; searching, retrieval and editing; information analysis; report generator; file structures and maintenance; documentation and user instructions; and miscellaneous. The database programs are ranked first by a point system for performance and second by a performance /price ratio. These two categories are added for a final ranking by the total value ("Data Base Program Ratings and Wrap Up", 1984, pp. 42-43).

CHAPTER III

Methodology

The study was conducted during the fall of 1985 and the spring of 1986. The sample of general purpose database software was selected on the basis of 1) use on the Apple II series without CPM, 2) recommendation by authors of articles about educational use of database software, and 3) current availability for preview or rental. Ten software programs met the above criteria. Five programs are recommended for elementary students and fall into the grades 3-6 category: Bank Street Filer, Friendly Filer, Master Type's Filer, Notebook Filer, and Secret Filer. Five programs are recommended for older users and fall into the grades 7-adult category: AppleWorks, Classification, DB Master, PFS:File/Report, and Quick File II (see Appendix A for listing of the programs and producers).

The researcher developed a recording sheet including online search features, online printing features, and other online housekeeping features. The features were adapted from three sources. Fenichel and Hogan (1981) offer a comprehensive listing of online search features, the Enhanced DIALOG Searching booklet (1985) describes DIALOG's search features, and Wilsonline Quick Reference Guide describes Wilsonline's features (Fenichel and Hogan, 1981, pp. 59-60, Enhanced DIALOG

Searching, 1985; Wilsonline Quick Reference Guide, 1985).

Both Fenichel and Hogan and the DIALOG booklet included the features of alphanumeric matches, truncation, embedded variable character, limiting the search to particular field/s, a dictionary file, a tutorial or directions or help screen, and saving searches. Fenichel and Hogan and DIALOG also contained the features of sorting the search and word proximity. In addition, the DIALOG and Wilsonline booklets included range searching, values with particular criterion, conditional searches, browsing capability, print format options, and file designation. Fenichel and Hogan include in their list the online word frequency file selection. Wilsonline also discusses the use of a password, a function necessary for accessing all online databases. None of these sources discussed whether the system was command or menu driven, but these are factors of the operating system of any database. The recording sheets were used for the analysis of each program (see Appendix B).

The emphasis of the general purpose database program analysis was placed on the search features. The re-searcher analyzed the programs for 27 search features. The programs were analyzed for their ability to search by whole or partial alphanumeric matches. In addition, the programs were analyzed for their ability to use truncation, the method of using a symbol to instruct the

computer to search a word's stem or root, and to use an embedded variable character, the method of using a symbol to instruct the computer to accept any character internally within a set of characters.

The general purpose database programs were also analyzed for their ability to allow the searcher to determine word proximity. Word proximity is an online search system feature that allows the searcher to request a specific positional relationship between words. The word proximity features to be analyzed are (W), word A adjacent to word B; (nW), word A within n words of word B; (N), word A near word B; (F), word A in the same field as word B; (C), word A in the same citation as word B; (L), links parts of multilevel descriptors; and (S), links sub-field parts within the same field in any order.

Several of the features analyzed are specifically related to the numeric search. The numeric features of the general purpose database programs that were analyzed include numeric ranges and the concepts of greater than, less than, equal to, and equal to or less than.

The programs were analyzed for their ability to perform conditional searching using Boolean or logical operators, e.g., and, or, not. These terms used in an online search system allow the searcher to create relationships between concepts that either expand or narrow the search. In order to expand a search, the

searcher may request either concept A or concept B and will receive any items that contain either term. In order to limit or narrow the search, the searcher may request that both concept A and concept B be present in any item produced and the searcher will receive only items that contain both concepts. In addition, the searcher can further narrow the search by requesting that concept C not be included.

Further limitations placed on a search are possible with an online search system. The searcher can restrict searches to finding concepts in particular fields, e.g., title or descriptor fields. The ability to limit the search to a single field, multiple fields, or any field was analyzed.

The final search feature analyzed in the general purpose database programs was the ability to browse a file. The programs were analyzed for both forward and reverse browsing.

In addition to search features, the general purpose database programs were analyzed for 11 online system printing features. The features analyzed were the ability to sort retrieved data before printing and the ability to use specific printing formats. Sorting the items produced by a search into a specified arrangement is an online search system capability. The general purpose database programs were analyzed for sorting features that would

allow the arrangement of items retrieved. The analysis of the sorting ability included their ability to sort by one or multiple levels. The primary key is the first level of the sort and the secondary key/s are additional levels, e.g., the author may be the primary key with the title/s of a particular author being the secondary key. The programs were analyzed for the features of primary key sorting and secondary key sorting. In addition, the analysis of the format features determined if the programs offer pre-defined formats, user-defined formats, the ability to store user-defined formats, horizontal or vertical printing, if the user could define the number of fields to print, and if single or multiple records could be printed per page.

The general purpose database programs were also analyzed for 10 other online system features. The researcher analyzed the programs for the ability to designate which file to search; the ability to select a file by testing frequency of word occurrence in the file; whether the program was command or menu driven; the availability of a dictionary or thesaurus for selection of terms accepted by the file; the availability of features to help the searcher, e.g., tutorial, directions, or help screen; the availability of a password in order to enter a file; and the ability to save a search.

The researcher developed three files that were used in the testing of each program. One file contained food labeling information for a nutrition file. Foods from the four food groups plus a category labeled fats and sweets were used. The file contained 40 records with 10 fields each. Eight of the fields contained numeric data for caloric and nutritional measurement. The data in the file were taken from actual food labels. This file, containing primarily numeric information on the foods, allowed the researcher to analyze the general purpose database programs for the ability to search whole or partial number sequences, numeric ranges, and values with particular criterion, e.g., greater than, less than, equal to, and equal to or less than. The second file developed was a countries of the world file that contained 17 fields of data on 42 countries. The fields included population, type of government, gross national product, per capita income, and literacy rate. This file, developed from The Countries of the World 1985 and Information Please Almanac 1985, used a mixture of alphabetic and numeric data and allowed the researcher to analyze both whole and partial alphanumeric matches, truncation, conditional searches, limiting features, and sorting levels. The third file developed was a bibliographic file adapted from the "Contemporary Issues" section of Booklist magazine. This bibliographic file contained 45 titles of books listed

under four subject headings. The record contained seven fields including topic, author, title, publisher, price, grade level, and comments. The bibliographic file was used to analyze whole or partial alphabetic matching, left and right truncation, embedded variable character, word proximity, conditional searches, limiting to fields, and sorting levels. The comments section of this file allowed the researcher to analyze the general purpose database programs for left and right truncation in order to simulate the online system ability to search text for a key word or term.

All of the software programs were initially ordered from the producer on a preview basis. The programs that were not available for preview were rented or borrowed.

After receiving the software programs, the researcher recorded the title, producer, the producer's address, cost, the recommended grade level, and the vital statistics for each program, including the limitations of record and file size, the number of files per disk, the number of disk drives necessary, and the computer compatibility required. The researcher then analyzed the program for its ability to duplicate online search features, online printing features, and other online housekeeping features using the three files that had been developed. This was accomplished by developing the screen format, imputing the data, searching the file, sorting the

file, and printing the file. The researcher recorded the results for each program on the recording sheets (see Appendix C).

Chapter IV

Results

For each general purpose database program, the researcher calculated the number and the percentage of the list of online systems' features met. This allowed the researcher to determine the individual program's ability to duplicate online system features in the areas of online search features, online printing features, and other online features. With the programs grouped according to two grade level categories, the researcher tabulated which features are available in a specific group of grade level programs which allowed the researcher to either accept or reject the hypotheses of this study.

The researcher analyzed the database programs for 27 online search features. For grades 3-6 the database programs included from 7 to 19 features of the possible 27 online search features. The five database programs fall into two groups. Bank Street Filer, including 19 of the features, and Master Type's Filer, including 16 of the features, offered the most features. These two programs contained 60 to 70 percent of the possible features. The second group included Secret Filer, Friendly Filer, and Notebook Filer containing 7, 8, and 9 features respectively. The percentage of features met ranges from 26 to 33 with these three programs. The numbers and percentages are displayed in Table 1.

Table 1

Online Search Features in Five Database Programs for
Grades 3-6

Search Features	Bank Street Filer	Friendly Filer	Master Type's Filer	Notebook Filer	Secret Filer	# programs with feature	% programs with feature
whole alpha	x	x	x	x	x	5	100
partial alpha	x	x	x	x		4	80
whole numeric	x	x	x	x	x	5	100
partial numeric	x		x	x		3	60
left truncation	x		x a	x a		3	60
right truncation	x	x a	x a	x a		4	80
wild card						0	0
(W)						0	0
(nW)						0	0
(N)						0	0
(F)						0	0
(C)						0	0
(L)						0	0
(S)						0	0
numeric range	x					1	20
>	x		x			2	40
<	x		x			2	40
=	x		x			2	40
= or <	x					1	20
and	x	x f	x f		x f	4	80
or	x					1	20
not	x		x f			2	40
primary field	x	x	x	x	x	5	100
any field	x	x	x	x	x	5	100
multiple fields	x	x	x		x	4	80
forward browsing	x		x	x	x	4	80
reverse browsing	x		x			2	40
# features met	19	8	16	9	7		
% features met	70	30	60	33	26		

a = automatically truncates without truncation symbol

f = logical connector concept limited to separate fields

The first hypothesis for the study stated that 50 percent or more of the general purpose database programs for grades 3-6 will have nine or more of the possible search features. Three of the four programs or 60 percent of the programs for grades 3-6 have nine or more of the possible search features. The first hypothesis was accepted.

In the database programs for grades 3-6, the online systems' search features found in all of the programs were the whole alphabetical match, whole numeric match, and limiting the search to a primary or any single field. Additional features found in the majority of the programs were partial alphabetical match, partial numeric match, left and right truncation, the logical operator **and**, the ability to search multiple fields, and forward browsing. Features found in ^{one or} only two of the programs were numeric range; value criterions of greater than, less than, equal to, equal to or less than; the logical operator **or**; the logical operator **not**; and reverse browsing. Features not found in any of the programs were an embedded variable character (wild card) and all of the word proximity features.

The availability of some of the features is misleading. In Friendly Filer, the right truncation is automatic with alphabetical characters. In Master Type's Filer and Notebook Filer, words and numbers were truncated

automatically. These programs offered no truncation symbol, but automatically found any series that matched the requested sequence of letters or numbers. In essence, the automatic truncation transformed all searches into partial alpha or partial numeric searches.

The availability of the logical operator **and** in some of the programs may also be misleading. Three of the programs, Friendly Filer, Master Type's Filer, and Secret Filer, can only search in specified field or fields and can not search the entire record, a global search. The concept of the logical operator **and** is possible only if the searcher were looking for two criteria that fall into two different fields. No command is available to connect two criteria in the same field. On the other hand, Bank Street Filer allows the searcher to connect criteria in the same or different fields with the logical connectors and creates English-type search sentences.

The results of the search feature analysis of the database programs for grades 7-adult are given in Table 2. The programs included from 9 to 18 of the possible 27 online search features. The five programs again fall into two groups. In the higher scoring group, AppleWorks, D.B. Master, and Quick File II each included 18 of the features and PFS: File/Report included 17 of the features. This group ranged from 63 to 66 percent of the possible online search features. The lower scoring program,

Table 2

Online Search Features in Five Database Programs for
Grades 7-Adult

Search Features	AppleWorks	Classification	D.B. Master	PFS: File/ Report	Quick File II	# programs with feature	% programs with feature
whole alpha	x	x	x	x	x	5	100
partial alpha	x	x	x	x	x	5	100
whole numeric	x	x	x	x	x	5	100
partial numeric	x	x		x	x	4	80
left truncation	x ^a		x	x	x ^a	4	80
right truncation	x ^a	x ^a	x	x	x ^a	5	100
wild card			x	x		2	40
(W)						0	0
(nW)						0	0
(N)						0	0
(F)						0	0
(C)						0	0
(L)						0	0
(S)						0	0
numeric range	x		x	x	x	4	80
>	x		x	x	x	4	80
<	x		x	x	x	4	80
=	x		x	x	x	4	80
= or <			x			1	20
and	x		x ^f	x ^f	x	4	80
or	x		x		x	3	60
not	x		x	x ^f	x	4	80
primary field	x	x	x	x	x	5	100
any field	x	x	x	x	x	5	100
multiple fields	x		x	x	x	4	80
forward browsing	x	x	x	x	x	5	100
reverse browsing	x				x	2	40
# features	18	9	18	17	18		
% features	66	33	66	63	66		

a = automatically truncates without truncation symbol

f = logical connector concept limited to separate fields

Classification, included 9 features with 33 percent of the possible features.

The second hypothesis for the study stated that 50 percent or more of the general purpose database programs for grades 7-adult will have 14 or more of the possible search features. Four of the five or 80 percent of the programs had 17 or more of the search features. On the basis of these results, the second hypothesis was accepted.

In the database programs for grades 7-adult, the online systems' search features found in all of the programs were the whole alphabetical match, the partial alphabetical match, the whole numeric match, right truncation, limiting the search to a primary field or any single field, and forward browsing. Additional features found in the majority of the programs were the partial numeric match; left truncation; a wild card; numeric range; value criterion of greater than, less than, equal to; the logical operators **and**, **or**, **not**; and the ability to search multiple fields. Features found in one or two of the programs, but not in the majority of the programs, were the value criteria equal to or less than and reverse browsing. The features not found in any of the programs were the word proximity features.

Similar problems that occurred with the programs for grades 3-6 appeared in some of the programs for grades

7-adult. In AppleWorks and Quick File II, left and right truncation are automatic. In Classification the right truncation is automatic. Again, the use of automatic truncation becomes the same as a partial search. In these three programs no truncation symbol was available.

The approach to conditional searching using the logical operators of **and**, **or**, **not** varies in the five programs. Classification, D.B. Master, and PFS: File/Report search only in a specified field or fields and can replicate searching with the **and** operator only if the searcher is searching for criteria in separate fields. AppleWorks and Quick File II, identical programs except for the size of the record, offer the **and**, **or**, **not** operators in one of the search modules, the "Records Selection" search. This allows the searcher to search in the same or separate fields linking the criteria with the operators forming English-type search sentences. These two programs also offer a global or full record search using the "Find" command, but logical operators are not available with the global search.

The researcher analyzed the general purpose database programs for 11 online systems' printing features. The database programs for grades 3-6 included 5 to 10 of the possible features. Results of the analysis can be found in Table 3. Bank Street Filer, including 10 features, Notebook Filer, including 10 features, and Master Type's

Table 3

Online Printing Features in Five Database Programs for
Grades 3-6

Printing Features	Bank Street Filer	Friendly Filer	Master Type's Filer	Notebook Filer	Secret Filer	# programs with feature	% programs with feature
Sorting:							
before printing	x	x	x	x	x	5	100
by primary key	x	x	x	x	x	5	100
by secondary key	x			x		2	40
Format:							
pre-defined format	x	x	x	x	x	5	100
user-defined format	x		x	x		3	60
stored format	x		x	x		3	60
horizontal printing	x	x	x	x	x	5	100
vertical printing						0	0
select field to print	y	y	y	y	n	4	80
single record/page	x	x	x	x		4	80
multiple records/page	x	x	x	x	x	5	100
# features	10	7	9	10	5		
% features	91	64	82	91	45		

Filer, including 9 features, offered the most features ranging from 82 to 91 percent of the 11 possible printing features. Friendly Filer included 7 features with 64 percent of the possible features and Secret Filer included 5 features which is 45 percent of the possible features.

The third hypothesis for the study stated that 50 percent or more of the general purpose database programs for grades 3-6 will have four or more of the possible printing features. Because 100 percent of the programs

have five or more of the features, the third hypothesis was accepted.

In the programs for grades 3-6, the online systems' printing features found in all of the programs were sorting before printing, sorting by primary key, a pre-defined printing format, horizontal printing, and printing multiple records per page. Additional features found in the majority of the programs were user-defined printing formats, storing a format, the ability to select fields to print and to print a single record per page. One feature found in two programs was the ability to sort by secondary key. The feature not found in any of the programs was the ability to perform vertical printing.

The general purpose database programs for grades 3-6 performed better on the printing features than on the search features. One unusual factor did occur with one of the programs. Friendly Filer allows the user to sort the file and to print the sorted file or to search the file and print the matches, but it would not allow the user to search for matches and then sort the matches before printing.

The number of online systems' printing features found in database programs for grades 7-adult ranged from 6 to 10 with four of the programs including 10 features. AppleWorks, D.B. Master, FFS: File/Report, and Quick File II included 10 online printing features each with 91

percent of the possible features. Classification included 6 of the features which is 55 percent of the possible features. The results of the analysis are displayed in Table 4.

Table 4

Online Printing Features in Five Database Programs for
Grades 7-Adult

Printing Features	AppleWorks	Classification	D.B. Master	PFS: File/ Report	Quick File II	# programs with feature	% programs with feature
Sorting							
before printing	x	x	x	x	x	5	100
by primary key	x	x	x	x	x	5	100
by secondary key	x		x	x	x	4	80
Format							
pre-defined format	x	x	x	x	x	5	100
user-defined format	x		x	x	x	4	80
stored format	x		x	x	x	4	80
horizontal printing	x	x	x	x	x	5	100
vertical printing						0	0
select field to print	y	y	y	y	y	5	100
single record/page	x		x	x	x	4	80
multiple records/page	x	x	x	x	x	5	100
# features	10	6	10	10	10		
% features	91	55	91	91	91		

The fourth hypothesis of the study stated that 50 percent or more of the general purpose database programs for grades 7-adult will have seven or more of the possible printing features. Four of the five programs had ten or

more of the features; therefore, the fourth hypothesis was accepted.

In the programs for grades 7-adult, the online systems' printing features found in all of the programs were sorting before printing, sorting by primary key, printing in a pre-defined format, horizontal printing, the ability to select fields to print, and to print multiple records per page. Additional features found in the majority of the programs were sorting using a secondary key, printing in a user-defined format, storing a format, and printing a single record per page. The feature not found in any of the programs was the ability to perform vertical printing.

The researcher analyzed the general purpose database programs for 10 other online systems' features. For grades 3-6 the programs offered 4 to 7 of the possible features. One program, Bank Street Filer, included 7 or 70 percent of the features while the other four programs each included 4 or 40 percent of the features.

The fifth hypothesis for the study stated that 50 percent or more of the general purpose database programs for grades 3-6 will have three or more of the possible other online features. From the results, all five of the programs have four or more features so the fifth hypothesis was accepted. Results of the analysis are listed in Table 5.

In the programs for grades 3-6, the other online systems' features found in all of the programs were file designation, menu driven, and directions. An additional feature found in the majority of the programs was a tutorial. Features found in one or more, but not in the majority of the programs were a help screen, password, and the ability to save a search. Features not found in any of the programs for grades 3-6 were word frequency file selection, command driven, and a dictionary file.

Table 5

Other Online Features in Five Database Programs for Grades 3-6

Other Features	Bank Street Filer	Friendly Filer	Master Type's Filer	Notebook Filer	Secret Filer	# programs with feature	% programs with feature
file designation	x	x	x	x	x	5	100
word frequency file						0	0
command driven						0	0
menu driven	x	x	x	x	x	5	100
dictionary file						0	0
tutorial	x	x	x			3	60
directions	x	x	x	x	x	5	100
help screen	x			x		2	40
passwords	x				x	2	40
save searches	x					1	20
# features	7	4	4	4	4		
% features	70	40	40	40	40		

The save searches feature found in Bank Street Filer, the only program for grades 3-6 that offered this feature, requires some explanation. The program saves the results of the search, but only saves the search strategy until a new search strategy is entered.

The database programs for grades 7-adult contained 3 to 7 of the possible other online systems' features. AppleWorks and Quick File II included 7 or 70 percent of the features, PFS: File/Report included 6 or 60 percent of the features, D.B. Master included 5 or 50 percent of the features, and Classification included 3 or 30 percent of the features. Results of the analysis can be found in Table 6.

The sixth hypothesis stated that 50 percent or more of the general purpose database programs for grades 7-adult will have four or more of the possible other online features. Four of the five programs or 80 percent of the programs had four or more of the possible features. The sixth hypothesis was accepted.

In programs for grades 7-adult, the other online systems' features found in all of the programs were menu driven and directions. Additional features found in the majority of the programs were file designation, command driven, tutorial, and the ability to save searches. Features found in less than a majority of the programs were a help screen and passwords. The feature not found

in any of the programs for grades 7-adult was a dictionary file, yet one program, D.B. Master, could approximate a dictionary file with alphabetic range searching feature.

Table 6

Other Online Features in Five Database Programs for Grades 7-Adult

Other Features	AppleWorks	Classification	D.B. Master	PFS: File/ Report	Quick File II	# programs with feature	% programs with feature
file designation	x	x		x	x	4	80
word frequency file						0	0
command driven	x		x	x	x	4	80
menu driven	x	x	x	x	x	5	100
dictionary file						0	0
tutorial	x		x	x	x	4	80
directions	x	x	x	x	x	5	100
help screen	x				x	2	40
passwords			x			1	20
save searches	x			x	x	3	60
# features	7	3	5	6	7		
% features	70	30	50	60	70		

The save search feature varies in the programs for grades 7-adult. In PFS: File/Report the user can save a search to another disk using the "Copy" command and menu. Although the matches found in a search can be saved, the search strategy can not be saved. On the other hand, AppleWorks and Quick File II save search strategies as a

part of the report format. The "Record Selection Rules" stay with the report format after report is designed.

CHAPTER V

CONCLUSION, RECOMMENDATIONS, SUMMARY

CONCLUSION

The researcher concluded from the results of the study that general purpose database programs could be used to introduce some online systems' concepts and skills to students in grades 3-12. Because the programs vary dramatically in the features included, the range of concepts and skills introduced by the programs will be determined by the general purpose database program used.

Regardless of which of the 10 programs is used some basics of online searching could be introduced. Using a general purpose database program with students could introduce them to the idea of electronically-stored information, the concept of "database" as a collection of related information stored in machine-readable form accessible by a computer. In addition, the students could be introduced to the database concepts of file, record, and field. All of the programs analyzed allowed the user to search in one field for a whole alphabetical match or a whole numeric match, to sort the search by primary key, and to horizontally print the search in the screen format with multiple records per page. All of the programs also offered the user a menu for selecting a procedure and directions to follow to accomplish the desired procedure.

Using any of the 10 general purpose database programs, a media specialist could introduce these concepts to students in any of the grades 3-12.

Various other online systems' concepts and skills could be taught by general purpose database programs, but the number and type of concepts and skills will vary with the program used. Using the highest scoring programs, Bank Street Filer and Master Type's Filer for grades 3-6 and AppleWorks, D.B. Master, PFS: File/Report, and Quick File II for grades 7-adult, the media specialist could introduce a variety of search skills including the partial alphabetical or partial numeric match; left and right truncation; numeric range searching; numeric searching with the values of greater than, less than, equal to, or equal to or less than; conditional searching with the logical connectors and, or, not; searching in multiple fields; and forward browsing of the file. Online printing skills that could be introduced by the highest scoring programs are sorting the search by secondary key, defining the print format, storing the printing format, selecting the fields to print, and printing a single record per page. Other online skills that could be introduced are selecting the appropriate file to search, using a password to access the file, and saving the search for later use.

Although the programs for grades 3-6 and the programs for grades 7-adult shared many of the same features,

several skills could be introduced by the programs for grades 7-adult that could not be taught by the programs for grades 3-6. These include using an embedded variable character (wild card) to search various word forms, reverse browsing of the file, and using commands as well as the menu to manipulate the search.

Several skills could not be introduced with any of the general purpose database programs. The media specialist would not be able to use the programs to introduce positional relationships between words using word proximity. An exact match will accomplish the same as the (W), word adjacency command, or the (L), the linking of parts of a multilevel descriptor, but none of the file management type database programs offer the word proximity commands. Perhaps the more sophisticated relational database programs offer such commands. The media specialist also will not be able to introduce the concepts of printing the search in a vertical format, selecting a file by using a word frequency file, or finding a key word or synonym in a dictionary file.

Not only could a variety of online systems' skills be introduced using general purpose database programs, but also the skills could be taught as early as third grade with programs recommended for that grade level. Bank Street Filer scored the highest in online search features of all the database programs analyzed and scored as high

as the highest scoring programs for grades 7-adult in the areas of online printing features and other online features. This program, recommended for grades four and up, combines operational simplicity with multiple online features that could be taught. The general purpose database program used will dictate the number and type of online skills that a media specialist could introduce to the students, but the use of any of the programs would broaden the students' range of information skills.

The researcher has also concluded that a school library media specialist must carefully plan the types of data to use in the files when teaching online skills using the 10 general purpose database programs. The majority of the programs have greater capability of searching alphabetical matches than numeric matches. Even the database programs containing features that allow them to search partial numeric matches, numeric ranges, and numeric values criterion often limit the length of number they will accept. The designer of a file will have difficulty inputting data that ranges in the billions without planning to use a consistent format that includes within the name of the field the numeric level and then using a decimal system. In addition, the length of field or the number of characters allowed per field in several of the programs restricts the type of data that can be entered. For example, some of the programs could not

accept the full author's name or the full publisher's name in the bibliographic file. Only those programs that allow a large number of characters in a field, such as PFS: File/Report, or offer a special "comments" area, such as Bank Street Filer, could handle all of the comments planned for the bibliographic file. This would restrict the media specialist from introducing the concept of searching an abstract. The designer of a file must either choose a program that allows longer text entries or plan the file according to this limitation.

Recommendations

One concept that media specialists must understand before they decide to use general purpose database programs to introduce online skills and concepts is the fundamental difference between online systems and general purpose database programs. The online systems are much more complex and the systems will automatically search the full record if the searcher enters a single word. They limit the search to a field or fields when the searcher enters multiple words or when the searcher requests a limitation. The general purpose database programs, on the other hand, are field-oriented and not full record-oriented. Most of the programs rely on a field search and do not offer a global search of the record. Even the programs that can search the entire

record, AppleWorks and Quick File II, will not allow conditional searching in that type of search.

Many media specialists may have one of the general purpose database programs available and might want to experiment introducing some of the online systems' skills. If a database program is going to be purchased, the program should be previewed to check for features that are desired. Anyone selecting a general purpose database program should examine the program specifically for how the logical connectors are used and if a truncation symbol is available. The programs of the greatest value for teaching logical connectors allow the user to connect two criteria in the same field and for teaching truncation allow the user to truncate the word with a symbol instead of automatic truncation. In the researcher's opinion, the programs that construct English-type sentences would be the most helpful in helping students to formulate a search strategy.

The researcher recommends that further study be conducted into the idea of using general purpose database programs to introduce skills for using online systems. This study merely catalogs the features available in 10 programs. Other studies could include testing students' abilities in searching any database program; designing instructional units to test students' ability to design, input, and search a file; testing students who have used

general purpose database programs to determine if they perform with more expertise when they begin to use an online system; comparing manual to electronic methods of retrieving information; and testing the impact of electronic retrieval on manual search abilities. The concept of introducing online skills using general purpose database programs requires additional study and research and the types of possible studies are numerous.

Summary

The purpose of the study was to analyze 10 general purpose database programs to determine if they could be used to introduce some online systems' concepts and skills to students in grades 3-12. Using three database files, the researcher tested the programs for online search features, online printing features, and other online features. The results of the study show that some online systems' skills could be taught by using general purpose database programs, but the number and type of skills will depend upon the program that is used.

The researcher predicted results of the study for six hypotheses and accepted all six. The researcher predicted in the first hypothesis that 50 percent or more of the general purpose database programs for grades 3-6 would have nine or more of the possible search features. Sixty percent of the programs have nine or more of the features;

therefore, the first hypothesis was accepted. The second hypothesis stated that 50 percent or more of the general purpose database programs for grades 7-adult would have 14 or more of the possible search features. Eighty percent of the programs had 17 or more of the features. The second hypothesis was accepted. In the third hypothesis the researcher predicted that 50 percent or more of the general purpose database programs for grades 3-6 would have four or more of the possible printing features. With 100 percent of the programs having ^{five} five or more of the features, the third hypothesis was accepted. The researcher predicted in the fourth hypothesis that 50 percent or more of the general database programs for grades 7-adult would have seven or more of the possible printing features. Because 80 percent of the programs had 10 of the features, the fourth hypothesis was accepted. In the fifth hypothesis the researcher predicted that 50 percent or more of the general database programs for grades 3-6 would have three or more of the possible other online features. With 100 percent of the programs having four or more of the features, the fifth hypothesis was accepted. The sixth hypothesis predicted that 50 percent or more of the general purpose database programs for grades 7-adult would have four or more of the other online features. Eighty percent of the programs had four or more of the features. The sixth hypothesis was accepted.

BIBLIOGRAPHY

- Aaron, Shirley L. "The Role of Basic Information Skills in an Educational Program of Excellence." School Library Media Activities Monthly 1 (December 1984): 27-9.
- Akers, Robert L. "Database Scorecard." Microcomputing 6 (April 1982): 46-62.
- Alliance for Excellence: Librarians Respond to a Nation at Risk. Washington, DC: U.S. Department of Education, 1984.
- Becker, Henry Jay. Microcomputers in the Classroom--Dreams and Realities. Baltimore, MD: ERIC Document Reproduction Service, ED 217 872, 1982.
- Blochowiak, Ken. "Apple II File-Management Systems." Byte 6 (November 1981): 274-300.
- Borgman, Christine, Dineh Moghdam, and Patti K. Corbett. Effective Online Searching: A Basic Text. New York: Marcel Dekker, 1984.
- Chen, Ching-Chih, and Suzanna Schweizer. On Line Bibliographic Searching: A Learning Manual. New York: Neal-Schuman, 1981.
- Costa, Betty, and Marie Costa. A Micro Handbook for Small Libraries and Media Centers. Littleton, CO: Libraries Unlimited, 1983.
- Craver, Kathleen W. "Teaching Online Bibliographic Searching to High School Students." Top of the News 41 (Winter 1985): 131-8.
- Craver, Kathleen W., and Lee Allison Dunanian. "An Introduction to Online Bibliographic Searching for High School Students: A Successful Approach." Educational Technology 24 (June 1984): 39-41.
- "Data Base Program Ratings and Wrap Up." Feelings II 5 (January 1984): 42-3.
- Dowling, Karen. "The School Media Center Goes Online." Catholic Library World 53 (October 1981): 120-1.
- Dunfey, Joan. "Using a Database in an English Classroom." The Computing Teacher 12 (November 1984): 26-7.

"Early Grades Ideas." Classroom Computer Learning 5
(October 1984): 58-9.

Fenichel, Carol H., and Thomas H. Hogan. Online
Searching: A Primer. Marlton, NJ: Learned
Information, 1981.

Fiebert, Elyse E. "The Use of DIALOG in a High School
Library." CMC News 4 (Winter 1984): 6.

"First Graders Learn Database Tasks at Private School."
Technological Horizons in Education Journal 12
(August 1984): 73-4.

Foster, Dennis L. The Addison-Wesley Book of Apple
Software 1985. Reading, MA: Addison-Wesley
Publishing, 1985.

Freeman, Carla, Jan Hawkins, and Cynthia Char.
Information Management Tools for Classrooms:
Exploring Database Management Systems. New York:
ERIC Document Reproduction Service, ED 249 925, 1984.

Friar, Audrey, and Lesli Rotenberg. "Munch a Healthful
Lunch: Teach Nutrition with these Data Base
Activities." Teaching and Computers 2 (January
1985): 13-9.

Glover, Voyle A. "Data Base Managers: Four for the
Apple." Interface Age 7 (April 1982): 96-9.

Greenglass, Linda. "Creating a Database with Children."
School Library Journal 31 (May 1985): 143-6.

Heintz, Carl. "Guide to Database System Software."
Interface Age 8 (February 1983): 52-6, 148-50.

-----, "Solving the Data Base Puzzle." Interface
Age 9 (February 1984): 58-69.

Hunter, Beverly. "Social Studies Education in the
Information Society." Social Education 47 (May
1983): 321-4.

-----, "Powerful Tools for Your Social Studies
Classroom." Classroom Computer Learning 4 (October
1983): 50, 55-7.

-----, "The Case of a Classroom Database."
Instructor 94 (March 1985): 54-8, 136.

-----, "American Indian Data File." Teaching and
Computers 3 (November/December 1985): 10-5.

- Katz, William A. Introduction to Reference Work, Volume 2: Reference Services and Reference Processes. 4th ed. New York: McGraw-Hill, 1982.
- Kramer, Al, and Fritz Lareau. "Databasing." Classroom Computer Learning 4 (January 1984): 68-9.
- Kurland, D. Midian. "Software for the Classroom: Issues in the Design of Effective Software Tools." In Chameleon in the Classroom: Developing Roles for Computers. Ed. Karen Sheingold. New York: ERIC Reproduction Service, ED 249 921, 1983.
- Langhorne, Mary Jo. "Database Management Systems: What Can They Do? How Do You Choose One?" Book Report 2 (November/December 1983): 15-7.
- Levinson, Michael S. and J. Andrew Walcott. "On-line Databases--A School Project." Media & Methods 22 (September/October 1985): 13-15, 57.
- Lias, Edward J. "Which Micro? It's Academic." Electronic Learning 2 (January 1983): 20-2.
- Lodish, Erica L. "?Begin: Online Database Searching Now!" School Library Media Activities Monthly 2 (April 1986): 39, 43.
- Loertscher, David V. "Information Skills for Children and Young Adults: Start Now!" School Library Media Activities Monthly 1 (December 1984): 30-4, 50.
- Lundin, Roy. "The Teacher-Librarian and Information Skills--An Across the Curriculum Approach." Emergency Librarian 11 (September-October 1983): 8-12.
- Malley, Ian. The Basics of Information Skills Teaching. London: Clive Bingley Limited, 1984.
- Mancall, Jacqueline C. "Training Students to Search Online: Rationale, Process, and Implications." Drexel Library Quarterly 20 (Winter 1984): 65-84.
- Mancall, Jacqueline C., and Dreama Deskins. "Electronic Bibliographic Database Access: Considerations in Offering Services to Students." School Library Media Activities Monthly 1 (October 1984): 33-7.
- Martin, William. "Touring an Informational Wonderland." Classroom Computer Learning 4 (February 1984): 52-60.

- McKenzie, Jamieson. "The Future Isn't What It Used to Be: Videotex Is on the Way." Media & Methods 21 (November 1984): 8-11.
- Meadow, Charles T., and Pauline R. Cochrane. Basics of Online Searching. New York: John Wiley and Sons, 1981.
- Minnich, Nancy P., and Carroll B. McCarthy. "The 'Clipping Thesis': An Exercise in Developing Critical Thinking and Online Database Searching Skills." School Library Media Activities Monthly 2 (April 1986): 45-50.
- Olds, Henry F, Jr., and Anne Dickenson. "Move Over, Word Processors--Here Come the Databases." Classroom Computer Learning 6 (October 1985): 46-9.
- "Online Searching and Networking: An Indispensable Relationship." School Library Media Activities Monthly 1 (February 1985): 49-50.
- Pon, Kathy. "Databasing in the Elementary (and Secondary) Classroom." The Computing Teacher 12 (November 1984): 28-30.
- Pruitt, Ellen, and Karen Dowling. "Searching for Current Information Online." Online 9 (March 1985): 47-60.
- Resnik, Hank. "From Social Studies to Social Science." Learning 13 (October 1984): 32, 38, 42.
- Rosenzweig, Laura. "Teaming up Social Studies and Computer Teachers." Electronic Learning 4 (April 1985): 16, 21.
- Rotenberg, Leslie. "Long Distance Art Exchange." Teaching and Computers 3 (March 1986): 12-3.
- Schneider, Shirley. "On-Line Research Project at the Ottumwa H.S. Library." Iowa Media Message 13 (June 1985): 10-1.
- Solomon, Gwen. "Electronic Research." Electronic Learning 5 (March 1986): 37-40.
- Swett, Sheila. "All American Data Files: Teaching U.S. History and Geography with These Data Base Activities." Teaching and Computers 2 (May/June 1985): 18-24.
- Taplin, Roger. "Teaching with Small Data-Bases." In Computer in the General Curriculum. Term 1. Ed. David Shires. Australia: ERIC Document Reproduction Service, ED 248 851, 1984.

Tenopir, Carol. "Student Online Data Base Searching: Part 1." The Computing Teacher 13 (April 1986): 18-19.

"Using MICROSearch for Student Practice." School Library Media Activities Monthly 1 (October 1984): 43.

Walker, Tom. "Using Utility Programs to Create Your Own Library Media Data Banks." School Library Media Activities Monthly 1 (February 1985): 43-4, 47.

Weaver, Dave, and Don Holznagel. An Analysis of Available Courseware. Portland, OR: ERIC Document Reproduction Service, ED 248 881, 1984.

Wheeler, Jim. "Direct Line to a World of Information--Online Bibliographic Searching." Book Report 2 (November/December 1983): 18-20.

Woldman, Evelyn, and Phyllis Kalowski. "Make Your Own Dinosaur Data Base: Teach About the History of Dinosaurs with These Data Base Activities." Teaching and Computers 2 (February 1985): 14-9.

Appendix A

Database Programs and ProducersAppleWorks

Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, CA 95014

Bank Street Filer

Broderbund
17 Paul Drive
San Rafael, CA 94903

Classification

Minnesota Educational Computing Consortium
2520 Broadway Dr.
Saint Paul, MN 55113

DB Master

Stoneware Microcomputer Products
50 Belvedere St.
San Rafael, CA 94901

Friendly Filer

Grolier Electronic Publishing, Inc.
Sherman Turnpike
Department 333
Danbury, CT 06816

Master Type's Filer

Scarborough
55 S Broadway
Tarrytown, NY 10591

Notebook Filer

D.C.H. Electronic Publishing
D.C. Heath
125 Spring Street
Lexington, MA 02173

PFS: File/Report

Software Publishing Corporation
1901 Lansing Drive
Mountain View, CA 94043

Quick File II

Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, CA 95014

Secret Filer

Scholastic Software
730 Broadway
New York, NY 10003

Appendix B

Recording Sheet

TITLE: _____

PRODUCER: _____

ADDRESS: _____

COST: _____ GRADE LEVEL: _____

VITAL STATISTICS:

records per file _____

fields per record _____

characters per field _____

record size _____

_____ fixed _____ variable

number of files per disk _____

number of disk drives _____

computer compatibility _____

SEARCH FEATURES:

alphanumeric match

_____ whole alpha _____ partial alpha

_____ whole numeric _____ partial numeric

truncation

_____ left _____ right

_____ embedded variable character (wild card)

word proximity

_____ (W) _____ (nW) _____ (N) _____ (F)

_____ (C) _____ (L) _____ (S)

_____ numeric ranges

values with particular criterion

_____ > _____ < _____ = _____ =or<

conditional searches

_____ and _____ or _____ not

limiting search to fields

_____ primary field _____ any field

_____ multiple fields

browsing capability

_____ forward _____ reverse

Comments:

PRINTING FEATURES:

sorting options

_____ sort before printing

sorting levels

_____ primary key _____ secondary key

format options

_____ predefined _____ user-defined

_____ stored format

_____ horizontal _____ vertical

select fields printable (y/n) _____

records per page: single _____ multiple _____

COMMENTS:

OTHER FEATURES:

_____ file designation

_____ word frequency file selection

_____ command driven _____ menu driven

_____ dictionary file (online thesaurus)

_____ tutorial _____ directions _____ help screen

_____ passwords (data security)

_____ save searches

COMMENTS:

Appendix C

Program Recording Sheets

TITLE: AppleWorks

PRODUCER: Apple Computer, Inc.

ADDRESS: 20525 Mariani Avenue
Cupertino, CA 95014

COST: \$225 GRADE LEVEL: 6 and up

VITAL STATISTICS:

records per file 140

fields per record 30

characters per field 76

record size 1024 characters

 fixed x variable

number of files per disk 51

number of disk drives 1 or 2

computer compatibility Apple IIe/IIc

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha

 x whole numeric x partial numeric

truncation

 x left x right

 embedded variable character (wild card)

word proximity

_____ (W) _____ (nW) _____ (N) _____ (F)

_____ (C) _____ (L) _____ (S)

 x numeric ranges

values with particular criterion

 x > x < x = _____ =or<

conditional searches

 x and x or x not

limiting search to fields

 x primary field x any field

 x multiple fields

browsing capability

 x forward x reverse

Comments:

Truncates automatically without symbol. Conditional searching limited to field searches using "Record Selection" command. Global search available with full match and/or automatic truncation. Field search builds English-type sentences with prompts given. Doesn't count matches.

PRINTING FEATURES:

 x sort before printing

sorting levels

 x primary key x secondary key

format options

 x predefined x user-defined

☒ stored format
☒ horizontal ☐ vertical
☐ select fields for printing (y/n)
☒ single record per page
☒ multiple records per page

COMMENTS:

Sorts by any number of fields. Sorts A to Z, Z to A, 0 to 9, 9 to 0, chronological, reverse chronological. Prints labels or tables format. Calculated categories available. Titles can be printed for reports at top with up to 78 characters.

OTHER FEATURES:

☒ file designation
☐ word frequency file selection
☒ command driven ☒ menu driven
☐ dictionary file (online thesaurus)
☒ tutorial ☒ directions ☒ help screen
☐ passwords (data security)
☒ save searches

COMMENTS:

Combination menu and command operation. Record selection rules stay with report format so strategy is saved. Package includes integrated word processor, database, and spreadsheet. Manual used with tutorial. Sample file included.

Program Recording Sheets

TITLE: Bank Street Filer
PRODUCER: Broderbund Software
ADDRESS: 17 Paul Drive
San Rafael, CA 94903
COST: \$69.95 GRADE LEVEL: 4 and up

VITAL STATISTICS:

records per file 255
fields per record 50
characters per field 80
record size 1 screen
 fixed x variable
number of files per disk multiple
number of disk drives 1 or 2
computer compatibility Apple II series (64k; 128k version
available), Commordore 64, IBM PC/PCjr

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha
 x whole numeric x partial numeric

truncation

 x left x right

 embedded variable character (wild card)

word proximity

_____ (W) _____ (nW) _____ (N) _____ (F)

_____ (C) _____ (L) _____ (S)

☒ numeric ranges

values with particular criterion

☒ > ☒ < ☒ = ☒ =or<

conditional searches

☒ and ☒ or ☒ not

limiting search to fields

☒ primary field ☒ any field

☒ multiple fields

browsing capability

☒ forward ☒ reverse

Comments:

Must select type of field in design. 8 types of fields.

Partial search or right truncation only in an a "anything" category using "find" with the "contains" command. Field search with prompts that build English-type search sentences with up to 4 records of criteria possible.

PRINTING FEATURES:

☒ sort before printing

sorting levels

☒ primary key ☒ secondary key

format options

☒ predefined ☒ user-defined

☒ stored format

☒ horizontal ☐ vertical

☒ y select fields for printing (y/n)

☒ single record per page

☒ multiple records per page

COMMENTS:

List, table or label formats available. Format menu with options.

OTHER FEATURES:

☒ file designation

☐ word frequency file selection

☐ command driven ☒ menu driven

☐ dictionary file (online thesaurus)

☒ tutorial ☒ directions ☒ help screen

☒ passwords (data security)

☒ save searches

COMMENTS:

Can save the results of a search, but strategy is only saved until new strategy is entered. Tutorial is on back of disk.

Program Recording Sheets

TITLE: ClassificationPRODUCER: Minnesota Educational Computing ConsortiumADDRESS: 2520 Broadway DriveSt. Paul, MN 55113COST: \$36 GRADE LEVEL: 6-9

VITAL STATISTICS:

records per file 200fields per record 6characters per field 9record size 54 fixed x variablenumber of files per disk multiplenumber of disk drives 1computer compatibility Apple, IBM PC/PCjr

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha x whole numeric x partial numeric

truncation

 left x right embedded variable character (wild card)

word proximity

 (W) (nW) (N) (F) (C) (L) (S) numeric ranges

values with particular criterion

_____ > _____ < _____ = _____ =or<

conditional searches

_____ and _____ or _____ not

limiting search to fields

☒ primary field ☒ any field

_____ multiple fields

browsing capability

☒ forward _____ reverse

Comments:

Search limited to one field except when using report option and then can use two fields. Forward browsing lists all records.

PRINTING FEATURES:

☒ sort before printing

sorting levels

☒ primary key _____ secondary key

format options

☒ predefined _____ user-defined

_____ stored format

☒ horizontal _____ vertical

☒ select fields for printing (y/n)

_____ single record per page

☒ multiple records per page

COMMENTS:

Only four fields are printable. Table format with headers is printed. Once printer option is chosen everything is printed until exit to main menu.

OTHER FEATURES:

☒ file designation
☐ word frequency file selection
☐ command driven ☒ menu driven
☐ dictionary file (online thesaurus)
☐ tutorial ☒ directions ☐ help screen
☐ passwords (data security)
☐ save searches

COMMENTS:

Major part of the program is the sample files.

Program Recording Sheets

TITLE: D.B. Master 4+PRODUCER: Stoneware, Inc.ADDRESS: 50 Belvedere StreetSan Rafael, CA 94901COST: \$295 GRADE LEVEL: adult

VITAL STATISTICS:

records per file < 5 M bytesfields per record 100characters per field 100record size 1020 characters fixed x variablenumber of files per disk 1 number of disk drives 1-4 (2 recommended) computer compatibility Apple II series

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha x whole numeric partial numeric

truncation

 x left x right x embedded variable character (wild card)

word proximity

 (W) (nW) (N) (F) (C) (L) (S)

☒ numeric ranges

values with particular criterion

☒ > ☒ < ☒ = ☒ =or<

conditional searches

☒ and ☒ or ☒ not

limiting search to fields

☒ primary field ☒ any field

☒ multiple fields

browsing capability

☒ forward ☐ reverse

Comments:

Searches limited to field search using up to 20 search criteria at a time. AND search possible only in separate fields; no command. Range searching for alpha and numeric. Up to 100 disks of data possible with a file. 11 field types in design.

PRINTING FEATURES:

☒ sort before printing

sorting levels

☒ primary key ☒ secondary key

format options

☒ predefined ☒ user-defined

☒ stored format

☒ horizontal ☐ vertical

☒ select fields for printing (y/n)

☒ single record per page

☒ multiple records per page

COMMENTS:

Sorts up to six fields at a time in ascending and descending order. Table or label format. Table format may have multiple or single line per record. Calculations available; program and documentation emphasize calculations.

OTHER FEATURES:

_____ file designation

_____ word frequency file selection

☒ command driven ☒ menu driven

_____ dictionary file (online thesaurus)

☒ tutorial ☒ directions _____ help screen

☒ passwords (data security)

_____ save searches

COMMENTS:

Combination of command and menu operation. Various levels of passwords: master, read only, read/write. Dictionary file possible using the alphabetical range for a list of words. Powerful database, but overall quite complex.

Program Recording Sheets

TITLE: Friendly FilerPRODUCER: Grolier Electronic Publishing, IncADDRESS: Sherman TurnpikeDepartment 333Danbury, CT 06816COST: x GRADE LEVEL: 3 and up

VITAL STATISTICS:

records per file 360fields per record 7characters per field 37record size 259 characters fixed x variablenumber of files per disk multiple holding up to 450
recordsnumber of disk drives 1computer compatibility Apple II (64k), IBM PC/PCjr

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha x whole numeric partial numeric

truncation

 left x right embedded variable character (wild card)

word proximity

_____ (W) _____ (nW) _____ (N) _____ (F)

_____ (C) _____ (L) _____ (S)

_____ numeric ranges

values with particular criterion

_____ > _____ < _____ = _____ =or<

conditional searches

___x___ and _____ or _____ not

limiting search to fields

___x___ primary field _____ any field

___x___ multiple fields

browsing capability

_____ forward _____ reverse

Comments:

User must select number of records in the file during file design. Automatic right truncation; no symbol is available. Search limited to field; searches 1 to 7 items at a time. No AND command; must search separate fields. Counts number of matches. The limit on the number of fields is restrictive.

PRINTING FEATURES:

___x___ sort before printing

sorting levels

___x___ primary key _____ secondary key

format options

___x___ predefined _____ user-defined

☐ stored format
☒ horizontal ☐ vertical
☒ select fields for printing (y/n)
☒ single record per page
☒ multiple records per page

COMMENTS:

Prints lists but not tables. User can define which fields to print, but can not design format. The sort can be used to print, but can not search, then sort, and print. Alpha and numeric sorts.

OTHER FEATURES:

☒ file designation
☐ word frequency file selection
☐ command driven ☒ menu driven
☐ dictionary file (online thesaurus)
☒ tutorial ☒ directions ☐ help screen
☐ passwords (data security)
☐ save searches

COMMENTS:

Interactive tutorial that offers excellent explanation of field, file, and record.

Program Recording Sheets

TITLE: Master Type's FilerPRODUCER: Scarborough Systems, Inc.ADDRESS: 55 South BroadwayTarrytown, NY 10591COST: \$39.95 GRADE LEVEL: 3 and up

VITAL STATISTICS:

records per file 250fields per record 10characters per field 24record size 240 characters fixed x variablenumber of files per disk 10number of disk drives 1 or 2computer compatibility Apple, Atari, Commodore 64, IBMPC/PCjr

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha x whole numeric x partial numeric

truncation

 x left x right embedded variable character (wild card)

word proximity

 (W) (nW) (N) (F) (C) (L) (S)

☐ numeric ranges

values with particular criterion

☐ > ☐ < ☐ = ☐ =or<

conditional searches

☐ and ☐ or ☐ not

limiting search to fields

☐ primary field ☐ any field

☐ multiple fields

browsing capability

☐ forward ☐ reverse

Comments:

Automatic truncation; no truncatin symbol. Truncates numbers and lettes. Field size and record size limitations are restrictive to input. Offers <> as "not equal to". Quickly counts number of records that fit search criteria.

PRINTING FEATURES:

☐ sort before printing

sorting levels

☐ primary key ☐ secondary key

format options

☐ predefined ☐ user-defined

☐ stored format

☐ horizontal ☐ vertical

☐ select fields for printing (y/n)

☐ single record per page

☒ multiple records per page

COMMENTS:

Sorts A to Z, low to high, high to low. Table or label formats available. Calculation of totals available.

Counts and prints number of records printed.

OTHER FEATURES:

☒ file designation

☐ word frequency file selection

☐ command driven ☒ menu driven

☐ dictionary file (online thesaurus)

☒ tutorial ☒ directions ☐ help screen

☐ passwords (data security)

☐ save searches

COMMENTS:

Sample files available. Offers quiz format to use with database.

Program Recording Sheets

TITLE: Notebook FilerPRODUCER: D.C.H. Electronic PublishingADDRESS: D.C. Heath125 Spring StreetLexington, MA 02173COST: \$45 GRADE LEVEL: 3-12

VITAL STATISTICS:

records per file 30-800fields per record 20characters per field 60record size 1200 characters fixed x variablenumber of files per disk 1-6number of disk drives 1-2computer compatibility Apple II series

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha x whole numeric x partial numeric

truncation

 x left x right embedded variable character (wild card)

word proximity

_____ (W) _____ (nW) _____ (N) _____ (F)

_____ (C) _____ (L) _____ (S)

_____ numeric ranges

values with particular criterion

_____ > _____ < _____ = _____ =or<

conditional searches

_____ and _____ or _____ not

limiting search to fields

☒ primary field ☒ any field

_____ multiple fields

browsing capability

☒ forward _____ reverse

Comments:

Automatic truncation on left and right. Length of field must be selected at file design. Searches any single field, but no multiple field searches. Both field and global searching, but global search is very slow.

PRINTING FEATURES:

☒ sort before printing

sorting levels

☒ primary key ☒ secondary key

format options

☒ predefined ☒ user-defined

☒ stored format

☒ horizontal _____ vertical

☒ y select fields for printing (y/n)

☒ x single record per page

☒ x multiple records per page

COMMENTS:

Printouts can be formatted as tables or labels or a quick data dump. Calculation available. Title for reports can be printed at top of report.

OTHER FEATURES:

☒ x file designation

☐ word frequency file selection

☐ command driven ☒ x menu driven

☐ dictionary file (online thesaurus)

☐ tutorial ☒ x directions ☒ x help screen

☐ passwords (data security)

☐ save searches

COMMENTS:

Sample files provided.

Program Recording Sheets

TITLE: PFS: File/ReportPRODUCER: Software Publishing CorporationADDRESS: 1901 Lansing DriveMountain View, CA 94043COST: \$1250 GRADE LEVEL: 5 and up

VITAL STATISTICS:

records per file 1000fields per record 1600-3200 est.characters per field 839-1679 est.record size < 32 screens/100 items per screen fixed x variablenumber of files per disk 1 number of disk drives 1 or 2 computer compatibility Apple, IBM PC/PCjr

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha x whole numeric x partial numeric

truncation

 x left x right x embedded variable character (wild card)

word proximity

 (W) (nW) (N) (F) (C) (L) (S)

☒ numeric ranges

values with particular criterion

☒ > ☒ < ☒ = _____ =or<

conditional searches

☒ and _____ or ☒ not

limiting search to fields

☒ primary field ☒ any field

☒ multiple fields

browsing capability

☒ forward _____ reverse

Comments:

Partial alpha or numeric is achieved with truncation symbol. Restricted to field search. AND possible only with criteria in separate fields. Counts matches.

PRINTING FEATURES:

☒ sort before printing

sorting levels

☒ primary key ☒ secondary key

format options

☒ predefined ☒ user-defined

☒ stored format

☒ horizontal _____ vertical

☒ select fields for printing (y/n)

☒ single record per page

☒ multiple records per page

COMMENTS:

Chronological, numeric, alphabetic sorts. Also will sort by key word and list records under multiple key words. Eight designs can be saved. Table or label format available. Titles can be given to reports and calculation is available.

OTHER FEATURES:

☒ file designation
☐ word frequency file selection
☒ command driven ☒ menu driven
☐ dictionary file (online thesaurus)
☒ tutorial ☒ directions ☐ help screen
☐ passwords (data security)
☒ save searches

COMMENTS:

Combination of command and menu operation. Initial menu requests a file name, but only one file stores per disk. Tutorial is limited, but available if used with documentation. Search can be saved using the "Copy" menu, but strategy is not saved.

Program Recording Sheets

TITLE: Quick File IIPRODUCER: Apple Computer, Inc.ADDRESS: 20525 Mariani AvenueCupertino, CA 95014COST: \$100 GRADE LEVEL: 6 and up

VITAL STATISTICS:

records per file 140fields per record 15characters per field 76record size 1140 characters fixed x variablenumber of files per disk 26number of disk drives 2computer compatibility Apple IIe/IIc

SEARCH FEATURES:

alphanumeric match

 x whole alpha x partial alpha x whole numeric x partial numeric

truncation

 x left x right embedded variable character (wild card)

word proximity

 (W) (nW) (N) (F) (C) (L) (S)

☐ numeric ranges

values with particular criterion

☐ > ☐ < ☐ = _____ =or<

conditional searches

☐ and ☐ or ☐ not

limiting search to fields

☐ primary field ☐ any field

☐ multiple fields

browsing capability

☐ forward ☐ reverse

Comments:

Identical search features to AppleWorks. Truncates automatically without symbol. Conditional searching limited to field searches using "Record Selection" command. Global search available with full match and/or automatic truncation. Field search builds English-type sentences with prompts given. Doesn't count matches.

PRINTING FEATURES:

☐ sort before printing

sorting levels

☐ primary key ☐ secondary key

format options

☐ predefined ☐ user-defined

☐ stored format

☐ horizontal _____ vertical

☐ select fields for printing (y/n)

- ☒ single record per page
☒ multiple records per page

COMMENTS:

Sorting and printing features identical to AppleWorks.
 Sorts by any number of fields. Sorts A to Z, Z to A, 0 to 9, 9 to 0, chronological, reverse chronological. Prints labels or tables format. Calculated categories available. Titles can be printed for reports at top with up to 78 characters.

OTHER FEATURES:

- ☒ file designation
 _____ word frequency file selection
☒ command driven ☒ menu driven
 _____ dictionary file (online thesaurus)
☒ tutorial ☒ directions ☒ help screen
 _____ passwords (data security)
☒ save searches

COMMENTS:

Features identical to AppleWorks. Combination menu and command operation. Record selection rules stay with report format so strategy is saved. Package includes integrated word processor, database, and spreadsheet. Manual used with tutorial. Sample file included.

Program Recording Sheets

TITLE: Secret FilerPRODUCER: Scholastic, Inc.ADDRESS: 730 BroadwayNew York, NY 10003COST: \$29.95 GRADE LEVEL: 3 and up

VITAL STATISTICS:

records per file 50fields per record 5characters per field 22record size 110 fixed x variablenumber of files per disk 12number of disk drives 1 or 2computer compatibility Apple II series, IBM, Commodore 64

SEARCH FEATURES:

alphanumeric match

 x whole alpha partial alpha x whole numeric partial numeric

truncation

 left right embedded variable character (wild card)

word proximity

 (W) (nW) (N) (F) (C) (L) (S)

☐ numeric ranges

values with particular criterion

☐ > ☐ < ☐ = ☐ =or<

conditional searches

☒ and ☐ or ☐ not

limiting search to fields

☒ primary field ☒ any field

☒ multiple fields

browsing capability

☒ forward ☐ reverse

Comments:

Record size restricts amount of data entered. AND search possible if criteria in separate fields. Only an exact match will work because neither partial alpha or numeric nor truncation is available.

PRINTING FEATURES:

☒ sort before printing

sorting levels

☒ primary key ☐ secondary key

format options

☒ predefined ☐ user-defined

☐ stored format

☒ horizontal ☐ vertical

☒ select fields for printing (y/n)

☐ single record per page

☒ multiple records per page

COMMENTS:

Single sorting level, but can be based on any of 5 fields. Sorts numbers 0-10 first, dates second, and letters A to Z third. Prints all fields in an index card format; user can not define which fields to print. Capable of print part or entire file.

OTHER FEATURES:

☒ file designation
☐ word frequency file selection
☐ command driven ☒ menu driven
☐ dictionary file (online thesaurus)
☐ tutorial ☒ directions ☐ help screen
☒ passwords (data security)
☐ save searches

COMMENTS:

Sample files are included. The program uses large type on the screen.