This document lists sources useful for academic reference and instruction librarians who are concerned with assisting and teaching novice or non-professional end-user searchers. The bibliography is organized in two lists: complete bibliographic citations and subject listing of references. The types of sources listed include journal articles, books, conference proceedings, doctoral dissertations, and ERIC documents. The subject listing of references is organized into four parts. Part I, "Information Seeking Behavior," covers information needs; the research process; the search process; and retrieval performance. Part II, "Psychological Aspects of Information Seeking Behavior," includes psychological theories and research methods; affective factors and anxiety; cognitive factors; user needs and user studies; user-intermediary interaction; human-computer interaction; and individual differences and searching styles. Part III, "Characteristics of Searchers," covers academic background and knowledge of subject; searching experience; level of education of searchers; and other characteristics. Finally, Part IV, "User Education for Information Seeking and Retrieving," includes implications of information technology for user education and reference service; the role of academic librarians; information literacy; critical thinking; learning theories and learning styles; cognitive models and mental models; and instructional objectives, teaching methods, and user education program descriptions. (JLB)
INFORMATION SEEKING BEHAVIOR
AND
USER EDUCATION
IN
ACADEMIC LIBRARIES:
RESEARCH, THEORY, AND PRACTICE
A Selected List of Information Sources

Compiled By

Stephanie Fridie
Reference Librarian
Blackwell Library
Salisbury State University
Salisbury, Maryland 21801

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

M. Stephanie Fridie

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."
INTRODUCTION

The sources in this list are useful for academic reference and instruction librarians who are concerned with assisting and teaching novice or non-professional end-user searchers. The sources apply to many types of access to information and methods of information retrieval, such as online public access catalogs (OPACs), online databases, CD-ROM databases, bibliographic databases, factual-information databases, full-text databases, and remote access. Manual searching of print sources including periodical indexes, card catalogs, books and government documents is also considered. The topics covered include information needs, the research process, search stages, search vocabulary, search strategy, search outcome, evaluating and selecting relevant information sources, affective and cognitive aspects of information seeking behavior, user-intermediary interaction, human-computer interaction, individual differences, and characteristics of searchers. Topics concerning user education include implications of information technology for user education, the educational role of academic librarians, learning theories, cognitive models, instructional objectives, teaching methods, and the issues of critical thinking and information literacy as they apply to user education in the information seeking and retrieval process.

The types of information sources listed include journal articles, books, conference proceedings, doctoral dissertations, and ERIC documents. Bibliographies, literature reviews, project descriptions, research reports, and explanations of theories and models are all included. Authors include professionals from the fields of computer science, education, information science, library science, and psychology. Most of the information sources were published from 1986 to 1993, although some significant items published before 1986 have been included. The main list of "COMPLETE BIBLIOGRAPHIC CITATIONS" is arranged alphabetically by the names of the authors or editors of the publications. Subject headings which describe the information sources are listed in the "TOPICAL OUTLINE." In the "SUBJECT LISTING OF REFERENCES" brief citations which contain the authors’ names, publication dates, and titles are listed for each subject heading from the "TOPICAL OUTLINE." More information for each of the brief references can be found in the list of "COMPLETE BIBLIOGRAPHIC CITATIONS." Abstracts of many of the sources in the list can be found by searching the ERIC database.
TOPICAL OUTLINE

I. Information Seeking Behavior
   A. Information Needs
   B. The Research Process
   C. The Search Process
      1. Search Stages
      2. Database Selection
      3. Search Terms (Controlled Vocabulary, Free-Text, Natural Language)
      4. Search Strategy, Retrieval Techniques
      5. Evaluating Relevance, Selecting Sources, Information Overload
   D. Retrieval Performance, Search Outcome
      (Success, Failure, User Satisfaction, User Problems)

II. Psychological Aspects of Information Seeking Behavior
   A. Psychological Theories and Research Methods Used in Information Seeking Behavior Studies
   B. Affective Factors, Anxiety
   C. Cognitive Factors
   D. User Needs, User Studies
   E. User-Intermediary Interaction
   F. Human-Computer Interaction
   G. Individual Differences, Searching Styles
III. Characteristics of Searchers

A. Academic Background, Knowledge of Subject
   1. More than One Academic Discipline Considered
   2. Science Information
   3. Social Science Information
   4. Humanities Information
   5. Medical Information

B. Searching Experience
   (Novices, Experts, End-Users, Search Intermediaries)

C. Level of Education of Searchers
   (Faculty, Graduate Students, Undergraduate Students,
    Practitioners, Professionals)

D. Other Characteristics of Users or More than One Characteristic Considered

IV. User Education for Information Seeking and Retrieving

A. Implications of Information Technology for User Education and Reference Service

B. The Role of Academic Librarians
   (Educators, Intermediaries)

C. Information Literacy

D. Critical Thinking

E. Learning Theories, Learning Styles

F. Cognitive Models, Mental Models

G. Instructional Objectives, Teaching Methods,
   User Education Program Descriptions
# TABLE OF CONTENTS

Complete Bibliographic Citations
Subject Listing of References 6

## I. INFORMATION SEEKING BEHAVIOR

### I.A. Information Needs

### I.B. The Research Process

### I.C. The Search Process

#### I.C.1. Search Stages

#### I.C.2. Database Selection

#### I.C.3. Search Terms

#### I.C.4. Search Strategy, Retrieval Techniques

#### I.C.5. Evaluating Relevance, Selecting Sources, Information Overload

### I.D. Retrieval Performance, Search Outcome

## II. PSYCHOLOGICAL ASPECTS OF INFORMATION SEEKING BEHAVIOR

### II.A. Psychological Theories and Research Methods

### II.B. Affective Factors, Anxiety

### II.C. Cognitive Factors

### II.D. User Needs, User Studies

### II.E. User-Intermediary Interaction

### II.F. Human-Computer Interaction

### II.G. Individual Differences, Searching Styles

## III. CHARACTERISTICS OF SEARCHERS

### III.A. Academic Background, Knowledge of Subject

#### III.A1. More than One Academic Discipline Considered

#### III.A2. Science Information

#### III.A3. Social Science Information

#### III.A4. Humanities Information

#### III.A5. Medical Information

### III.B. Searching Experience

### III.C. Level of Education of Searchers

### III.D. Other Characteristics of Users

## IV. USER EDUCATION FOR INFORMATION SEEKING AND RETRIEVING

### IV.A. Implications of Information Technology for User Education and Reference Service

### IV.B. The Role of Academic Librarians

### IV.C. Information Literacy

### IV.D. Critical Thinking

### IV.E. Learning Theories, Learning Styles

### IV.F. Cognitive Models, Mental Models

### IV.G. Instructional Objectives, Teaching Methods, User Education Program Descriptions
COMPLETE BIBLIOGRAPHIC CITATIONS


______. "Patron Response to Bibliographic Databases on CD-ROM." RQ 29(1) (Fall 1989): 103-110.


Dennis, Nancy and Nancy D. Harrington. "Librarian and Faculty Member Differences in Using Information Technologies: A Prerequisite for Developing Effective Bibliographic Instruction Programs." RSR: Reference Services Review 18(3) (Fall 1990): 47-52.


17


19


32

33


SUBJECT LISTING OF REFERENCES

I. Information Seeking Behavior

I.A. Information Needs


I.B. The Research Process


I.C. The Search Process


Rubens, Donna and Mary M. Huston (1989). "Thinking Like a Searcher."
I.C.1. Search Stages


I.C.2. Database Selection

Allen, Gillian (1990). "Database Selection by Patrons Using CD-ROM."


I.C.3. Search Terms
(Controlled Vocabulary, Free-Text, Natural Language)


   "I. The Selection Routine."
   "II. Controlled Vocabulary or Free-Text Searching."
   "III. Searching Styles."


Spink, Amanda and Tefko Saracevic (1992). "Sources and Use of Search Terms in Online Searching."

Spink, Amanda and Tefko Saracevic (1992). "Where Do the Search Terms Come From?"


I.C.4. Search Strategy, Retrieval Techniques


Belkin, Nicholas (1987). "Retrieval Techniques."


Greene, Sharon L. and others (1990). "No IFs, ANDs, or ORs: A Study of Database Querying."


I.C.5. Evaluating Relevance, Selecting Sources, Information Overload

Eisenberg, Michael and Linda Schamber (1988). "Relevance: The Search for a Definition."


Rudd, Joel and Mary Jo Rudd (1986). "Coping with Information Load: User Strategies and Implications for Librarians."


Schamber, Linda and others (1990). "Re-examination of Relevance: Toward a Dynamic, Situational Definition."


I.D. Retrieval Performance, Search Outcome
(Success, Failure, User Satisfaction, User Problems)


Bellardo, Trudi (1985). "An Investigation of Online Searcher Traits and Their Relationship to Search Outcome."


Penhale, Sara J. and Nancy Taylor (1986). "Integrating End-User Searching into a Bibliographic Instruction Program."


II. "Users, Questions, and Effectiveness."
III. "Searchers, Searches, and Overlap."


Trivison, Donna and others (1986). "Effectiveness and Efficiency of Searchers in Online Searching: Preliminary Results from a Study of Information Seeking and Retrieving."


II. Psychological Aspects of Information Seeking Behavior

II.A. Psychological Theories and Research Methods Used in Information Seeking Behavior Studies


Sandore, Beth (1993). "Applying the Results of Transaction Log Analysis."


II.B. Affective Factors, Anxiety


Turner, Philip M. and others (1990). "The Effects of Baud Rate, Performance Anxiety, and Experience on Online Bibliographic Searches."


Warmkessel, Marjorie M. and Frances M. Carothers (1993). "Collaborative Learning and Bibliographic Instruction."


II.C. Cognitive Factors


Eisenberg, Michael and Linda Schamber (1988). "Relevance: The Search for a Definition."


Greene, Sharon L. and others (1990). "No IFs, ANDs, or ORs: A Study of Database Querying."


Rubens, Donna and Mary M. Huston (1989). "Thinking Like a Searcher."

Sandore, Beth (1993). "Applying the Results of Transaction Log Analysis."


Trivison, Donna and others (1986). "Effectiveness and Efficiency of Searchers in Online Searching: Preliminary Results from a Study of Information Seeking and Retrieving."


II.D. User Needs, User Studies


Cherry, Joan M. and Marshall Clinton (1989). "A Profile of User Background and User Satisfaction with the University of Toronto OPAC and the Implications for User Training and User Interfaces."


II.E. User-Intermediary Interaction


Hatchard, Desmond B. and Phyllis Toy (1986). "Librarians’ Views on the Psychological Barriers Problem."

Hatchard, Desmond B. and Phyllis Toy (1986). "The Psychological Barriers Between Library Users and Library Staff -- An Exploratory Investigation."


Saracevic, Tefko and others (1990). "Nature of Interaction Between Users and Intermediaries in Online Searching: A Qualitative Analysis."


II.F. Human-Computer Interaction


II.G. Individual Differences, Searching Styles


III. Characteristics of Searchers

III.A. Academic Background, Knowledge of Subject

III.A.1. More Than One Academic Discipline Considered


Cherry, Joan M. and Marshall Clinton (1989). "A Profile of User Background and User Satisfaction with the University of Toronto OPAC and the Implications for User Training and User Interfaces."


Frost, Carolyn O. (1987). "Faculty Use of Subject Searching in Card and Online Catalogs."


Jackson-Brown, Grace and Gwen Pershing (1992). "Comparisons of Graduate and Undergraduate End-Users of ERIC and PsycLIT on CD-ROM."


III.A.2. Science Information


Liu, Mengxiong (1992). "The Complexity of Science Faculty’s Information Seeking Behavior."

III.A.3. Social Science Information


Jackson-Brown, Grace and Gwen Pershing (1992). "Comparisons of Graduate and Undergraduate End-Users of ERIC and PsycLIT on CD-ROM."


III.A.4. Humanities Information


III.A.5. Medical Information


III.B. Searching Experience
( Novices, Experts, End-Users, Search Intermediaries)


Penhale, Sara J. and Nancy Taylor (1986). "Integrating End-User Searching into a Bibliographic Instruction Program."


Turner, Philip M. and others (1990). "The Effects of Baud Rate, Performance Anxiety, and Experience on Online Bibliographic Searches."


III.C.  Level of Education of Searchers  
(Faculty, Graduate Students, Undergraduate Students, Practitioners, Professionals)

Clark, Katharine E. and Joni Gomez (1990). "Faculty Use of Databases at Texas A&M University."

Dennis, Nancy and Nancy D. Harrington (1990). "Librarian and Faculty Member Differences in Using Information Technologies: A Prerequisite for Developing Effective Bibliographic Instruction Programs."


Frost, Carolyn O. (1987). "Faculty Use of Subject Searching in Card and Online Catalogs."


Jackson-Brown, Grace and Gwen Pershing (1992). "Comparisons of Graduate and Undergraduate End-Users of ERIC and PsycLIT on CD-ROM."


Liu, Mengxiong (1992). "The Complexity of Science Faculty's Information Seeking Behavior."

Steffen, Susan Swords (1988). "Faculty as End-Users: Strategies, Challenges, and Rewards."

Torok, Andrew and Jitka Hurych (1986). "End User Online Searching Among University Faculty."

III.D. Other Characteristics of Users or More Than One Characteristic Considered

Bellardo, Trudi (1985). "An Investigation of Online Searcher Traits and Their Relationship to Search Outcome."


IV. User Education for Information Seeking and Retrieving

IV.A. Implications of Information Technology for User Education and Reference Service


IV.B. The Role of Academic Librarians  
(Educators, Intermediaries)


IV.C. Information Literacy

Breivik, Patricia Senn (1992). "Education for the Information Age."

Breivik, Patricia Senn and Dan L. Jones (1993). "Information Literacy: Liberal Education for the Information Age."


Coons, Bill and Jan Kennedy Olsen (1989). "Imperatives for the Second Century: Information Literacy and the Quality of Undergraduate Education in America."


Frank, Polly (1989). "Information Literacy and Lifelong Learning."


Isbell, Dennis and Carol Hammond (1993). "Information Literacy Competencies."

Jeng, Ling Hwey (1989). "Information Literacy for Information Professionals."


IV.D.  Critical Thinking


Poirier, Gayle and Susan Hocker (1993).  "Teaching Critical Thinking in a Library Credit Course."


IV.E. Learning Theories, Learning Styles


Cognitive Models, Mental Models


IV.G. Instructional Objectives, Teaching Methods, User Education Program Descriptions


Buchanan, Nancy L. and others (1992). "The Effectiveness of a Projected Computerized Presentation in Teaching Online Library Catalog Searching."


Dennis, Nancy and Nancy D. Harrington (1990). "Librarian and Faculty Member Differences in Using Information Technologies: A Prerequisite for Developing Effective Bibliographic Instruction Programs."


MacDonald, Linda Brew (1990). "Instruction for and with CD-ROM."


Poirier, Gayle and Susan Hocker (1993). "Teaching Critical Thinking in a Library Credit Course."


Ridgeway, Trish (1989). "Integrating Active Learning Techniques into the One-Hour Bibliographic Instruction Lecture."


Taylor, Nancy and Sara Penhale (1988). "End-User Searching and Bibliographic Instruction."

Van Beek, Jan and others (1989). "Computer-Based Learning for On-Line Data Base Search."


Warmkessel, Marjorie M. and Frances M. Carothers (1993). "Collaborative Learning and Bibliographic Instruction."