

## Association for Library and Information Science Education (ALISE)

---

Teaching Documentation at Western Reserve University

Author(s): Alan M. Rees and Tefko Saracevic

Source: *Journal of Education for Librarianship*, Vol. 6, No. 1 (Summer, 1965), pp. 8-13

Published by: [Association for Library and Information Science Education \(ALISE\)](#)

Stable URL: <http://www.jstor.org/stable/40321833>

Accessed: 24/01/2015 22:28

---

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Association for Library and Information Science Education (ALISE) is collaborating with JSTOR to digitize, preserve and extend access to *Journal of Education for Librarianship*.

<http://www.jstor.org>

# Teaching Documentation at Western Reserve University

ALAN M. REES AND TEFKO SARACEVIC

INSTRUCTION in documentation is by no means new at Western Reserve University. The first course in documentation in the United States was initiated at Western Reserve by Helen Focke in 1949. The establishment of the Center for Documentation and Communication Research in 1955 as a division of the School of Library Science to conduct research in the non-conventional approaches to the analysis, storage, retrieval, and dissemination of recorded knowledge provided the opportunity to extend and enrich the instructional program in documentation. At that time, Dean Jesse H. Shera expressed the conviction that the experience gained from a continuing research program would "enrich the curriculum and provide the profession with more adequately trained librarians."<sup>1</sup> Subsequent research, much of an interdisciplinary nature, in the generation and transfer of information, systems design and testing, library automation, indexing languages, file organization, automatic processing of natural language text has been increasingly reflected in the academic curriculum. In this manner, a most desirable interpenetration of graduate education and research has been achieved within the documentation curriculum.

At the present time, this curriculum consists of ten courses which are closely articulated with the core program for the M.S. in Library Science. These courses are: Documentation, Information Retrieval Systems Parts I and II, Information Processing on Computers, Introduction to Information Retrieval Theory, Automated Language Processing,

---

Rees is Assistant Director for Research, Center for Documentation and Communication Research, and Assistant Professor, School of Library Science, Western Reserve University.

Saracevic is Manager, Medical Information Research Project, Center for Documentation and Communication Research, and Instructor, School of Library Science, Western Reserve University.

## *Teaching Documentation at Western Reserve University*

Theory of Classification, Specialized Information Centers and Services, Automation of Library Processes and Procedures, and Special Studies in Documentation.

This paper will not describe and analyze the total documentation curriculum. This will be done at a later date. Instead the three introductory courses will be discussed in some detail to illustrate course content and teaching method. These courses are Documentation and Information Retrieval Systems Parts I and II.

### 1. *Content*

#### A. *Documentation* (3 credit hours)

"A survey of the various means of recording, organizing, locating, and duplicating research materials in order to make them more easily available for the people who need them. Emphasis is divided between the larger aspects of information storage and retrieval systems and practical methods of documentation such as abstracting, preparation of literature reviews, and indexing by both conventional and non-conventional means."

This is essentially a survey course intended to acquaint the student with the nature and extent of the field, its bibliography, principal publications and authors, significant trends and the general relationship of conventional to non-conventional approaches to indexing, classification, abstracting, searching and dissemination.

#### B. *Information Retrieval Systems Part I* (3 credit hours)

"Analysis of retrieval systems. Review of conventional and non-conventional means of acquisition, analysis, coding, storage, file organization, retrieval and display of information. The structure and use of indexing languages is related to computerized and manual indexing systems. User needs and the systems approach."

Intellectual and mechanical operations are surveyed within the context of a system. Research methodologies used in experiments in automatic indexing and classification, test and evaluation of information retrieval systems, file organization are described.

#### C. *Information Retrieval Systems Part II* (3 credit hours)

"Practical experience with respect to the operation of an information retrieval system. Component parts of a total system are analyzed such as acquisition, indexing, file arrangement, question analysis, search strategy, and evaluation of outputs to illustrate their interaction."

Practical experience of each sub-system is provided. Each student is required to index a number of documents utilizing several indexing languages and is assigned questions for analysis and searching to explore the matching of questions and indexing languages. Search results are analyzed and tabulated by students and related to system components such as indexing decisions, question analysis, and search strategy used. The emphasis in this course is on the illustration of theoretical principles within the framework of practice. The total operation of an information retrieval system is simulated in order to illustrate the interaction and interdependence of component elements.

## 2. *Method*

The relative absence of textbooks is indicative of the difficulties involved in the teaching of documentation. The shape and magnitude of the field is far from clear so that any text necessarily represents a highly subjective and somewhat constrained viewpoint. Texts by Becker and Hayes,<sup>2</sup> Bourne,<sup>3</sup> Kent,<sup>4</sup> Fairthorne,<sup>5</sup> and Bradford<sup>6</sup> emphasize some aspects at the expense of others. The tools and methodology of mathematics, linguistics and so on are, in some instances, considered as the substance of the information problem rather than useful instruments for the definition and solution of specific problems. Moreover, the precise relationship between information retrieval and/or documentation and librarianship is not made explicit. This is not surprising considering that it is impossible to define non-conventional without arbitrarily establishing what is, in fact, conventional. Non-conventional techniques are in this manner considered as disjointed, phantom entities, fragmented from the essential unity of librarianship. In no text is the exposition of co-ordinate indexing, links and roles, thesauri, and structure of indexing languages adequately related to the theory of subject headings and classification.<sup>7</sup>

At Western Reserve the attempt has been made in *Documentation and Introduction to Information Retrieval Systems Part I* to use available texts on topics where these are adequately treated and to supplement these readings with appropriate articles, reports, papers, and other materials. Approximately 20 reading lists have been prepared on broad topics such as Conventional Indexing and Subject Analysis; Non-Conventional Indexing Systems; Citation Indexing; Subject Analysis and Subject Headings in Indexing; Problems in Classification; Mechanization of Library Catalogs; Mechanized Concordance, Word, Permutation or KWIC Indexing; Abstracting Methods; Standardization

### *Teaching Documentation at Western Reserve University*

in Documentation; History of Documentation; Recording, Transmission and Publication of Research; Bibliographic Organization—National and International; Microforms and the Publication of Research Literature; New Methods of Information Storage and Retrieval—General Readings.\* These lists contain approximately 500 separate citations. Students are encouraged to read a representative selection of items within each broad area.

Each student is also expected to read approximately 20 papers of a seminal, classical nature. For example:

Bush, Vannevar: As We May Think. *Atlantic Monthly*, 176:101-108, July 1945.

Luhn, H. P.: Automatic Creation of Literature Abstracts. *IBM Journal of Research and Development*, 2:159-165, April 1958.

Bar-Hillel, Yehoshua: Is Information Retrieval Approaching a Crisis? *American Documentation*, 14:45-48, April 1963.

Maron M. E., and Kuhns, J. L.: On Relevance, Probabilistic Indexing and Information Retrieval. *Journal of the Association for Computing Machinery*, 7:216-244, July 1960.

*Science, Government and Information*—The Responsibilities of the Technical Community and the Government in the Transfer of Information. A Report of the President's Science Advisory Committee, The White House, January 10, 1963.

Cleverdon, Cyril: Report on the First Stage of an Investigation into the Comparative Efficiency of Indexing Systems. Cranfield, England, September 1960.

Information Retrieval Systems Part II is essentially a laboratory course. A number of documents relating to the engineering sciences is assigned to each student for indexing. Indexing languages utilized by students are uniterms, the ASM-SLA Classification (2nd, International Edition), the DDC Thesaurus (2nd edition), the EJC Thesaurus, Telegraphic Abstract-Semantic Code. These indexing languages are selected to provide examples of a language with no semantic or syntactical control (uniterms); a classification scheme utilizing co-ordinate principles (ASM-SLA); a thesaurus for a wide spectrum of subject fields with no links and roles (DDC); a computer-produced thesaurus for a limited number of subject fields and using EJC links and roles (EJC); and a language with free vocabulary and links and roles

\* These bibliographies have been compiled by Helen Focke and are periodically updated to incorporate new publications.

(telegraphic abstract-semantic code). Experience is provided in the manipulation of a number of storage media (computer tapes, uniterm posting cards, Keydex optical coincidence cards, edge-notched punched cards.)

After the indexing has been performed each student is assigned several questions for analysis and subsequent formulation of search strategies. Questions are real and selected from those submitted to an operational information center. Students analyze questions by negotiation with the instructors to simulate a real question asking situation.

The performance of the various indexing languages is tabulated by means of measures developed within the Comparative Systems Laboratory at Western Reserve University.<sup>8</sup> With respect to tabulated scores, students are asked to discuss and document the following points:

1. Problems involved in the selection of concepts from a document—*i.e.*, the nature of the indexing process.
2. Difficulties in converting from concepts extracted from a document into indexing languages. To what extent is compromise necessary in terms of generality-specificity in relation to each language? Is there an "ideal" language for describing characteristics of documents? What are the peculiar difficulties in constructing good indexing languages?
3. Correlation of failures and success in retrieval with:
  - (a) Indexing decisions
  - (b) Indexing language
  - (c) Analysis of questions
  - (d) Search strategy employed
  - (e) Other reasons
4. Comparative experience in the manipulation of various storage media.
5. Ranking of the performance of the indexing systems. Differentiate between indexing system and indexing language.

The courses described are introductory in nature and are intended to bridge the gap between the library core program and the specialized courses offered in information retrieval theory, library automation, and mathematical and linguistic approaches to information problems. The courses are also intended to provide a survey for those who do not intend to proceed further in the documentation program.

The subject material covered extends from the generation to the

### *Teaching Documentation at Western Reserve University*

ultimate utilization of information and is concerned with the total process of scientific communication. An attempt is made to acquaint students with the fact that there is an emerging interdisciplinary information science as well as established principles and practices relating to the management of science information.<sup>9</sup> Teaching techniques are both eclectic and empirical as perhaps they must necessarily be in a rapidly changing field.<sup>10</sup>

#### *References*

1. Shera, J. H.: Librarianship in a High Key. *ALA Bulletin*, 50:105, Feb. 1956.
2. Becker, Joseph, and Hayes, R. M.: *Information Storage and Retrieval: Tools, Elements, Theories*. New York, Wiley-Interscience, 1963.
3. Bourne, Charles P.: *Methods of Information Handling*. New York, Wiley-Interscience, 1963.
4. Kent, Allen: *Textbook on Mechanized Information Retrieval*. New York, Wiley-Interscience, 1962.
5. Fairthorne, R. A.: *Towards Information Retrieval*. London, Butterworth, 1961.
6. Bradford, S. C.: *Documentation*. 2nd ed. London, Crosby Lockwood, 1953.
7. Rees, Alan M.: New Bottles for Old Wine. *Wilson Library Bulletin*, 38:773-779, May 1964.
8. Goffman, W., and Newill, Vaun A.: *Comparative Systems Laboratory Technical Report No. 2: Methodology for Test and Evaluation of Information Retrieval Systems*. Center for Documentation and Communication Research, School of Library Science, Western Reserve University, July 1964.
9. Rees, Alan M.: "The Role of Research in the Education of Science Information Personnel." Paper presented at an invitational conference on "The Education of Science Information Personnel—1964," held in Cleveland, Ohio, July 27-28, 1964. Also in A. J. Goldwyn and Alan M. Rees, eds., *The Education of Science Information Personnel—1964*. Cleveland, Center for Documentation and Communication Research, School of Library Science, Western Reserve University, 1965, pp. 54-60.
10. This point is discussed at some length in Alan M. Rees, "The Art of Teaching Information Science," Paper to be presented at an American Documentation Institute Symposium on Education for Information Science, Airlie House, Warrenton, Virginia, September 7-10, 1965.