A Curriculum in Indexing and Abstracting*  
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How much I could assume about the background and knowledge of library schools in your diverse group was a problem, so I decided to begin at the beginning and risk that it will sound familiar to some of you. I am going to talk particularly about Rosary College’s Graduate School of Library Science and more particularly about my indexing and abstracting course. Basically, this is my approach.

First, we must think about what the student is going to do with this training. Students come into the library school to prepare for various professional activities. Most of the indexing and abstracting group are probably going to a special library or a research library and will abstract and index for (1) internal publications and (2) the card catalogue or computer or other retrieval system. Bibliographic preparation and indexes for retrospective searching are also common. Let me emphasize that most of the output is used internally, not outside the organization. Consequently, it does not have to be as beautiful or as nicely prepared as something published for external consumption.

Many organizations over the years have accumulated in-depth indexes for their particular interest areas. A library in the petroleum field might cover petroleum chemistry, petroleum geology, the economics of petroleum, and so on. I recently visited the library at Standard Oil where a card catalogue index in great depth has been building up for a long time. Another common problem is proprietary materials, e.g. research reports prepared internally, laboratory notebooks, all of which must be indexed and the materials retained within the organization.

Our preparation is geared to this end product. There are a number of basic courses which people take prior to indexing and abstracting. The series of reference courses includes reference and bibliography, literature of the humanities, literature of the social sciences, and literature of the sciences. In all of these, students get involved with indexing and abstracting services, tools used in the literature and in reference. They are taught how to use them, how they are organized, how to evaluate them. When they come to my class, they are familiar with indexes from the wide range of Reader’s Guide to Science Citation Index or Chemical Abstracts.

Most students, by the time they get to indexing and abstracting, have had at least one class in cataloguing and classification. This is basically the traditional Dewey and Library of Congress, but also introduced are how knowledge is organized, something of the history of classification systems, and subject headings which are a form of pre-coordinate indexing. Last of all, the student will probably take computer applications in libraries before he takes indexing and abstracting. This covers how a computer works and its satellite equipment, its capabilities and how to use them for library housekeeping chores and for organization of knowledge. While it does not go into the actual indexing and abstracting aspects of a computer, it does give students a familiarity with the concept.

At this point they come into my class, and I will tell you my policies on training for abstracting and indexing. First, in order to read the literature intelligently, people must understand the past, to see the growth and development of the field of organization of information for retrieval. Second, they must have practical, hands-on experience. You learn to write abstracts by writing abstracts, lots and lots of them; you learn to index by actually doing it. Within organizations where many of you work, I am sure this is the routine: abstracts are written, edited, and sent back, and the writers learn from this criticism; indexing is done, discussed, edited, and returned, and the indexers learn by doing. This is essentially what I am trying to do. We concentrate on the indexing of articles and research reports because this is the type of material which most of our students will handle in real-life situations. The subject of book indexing is touched on lightly.

I start with background theory; what does this include? The history of how knowledge is organised could go back to the Babylonians; we do not go that far, but we consider some of the basic classification schemes, their construction and their faults. One of the original systems is the

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classified catalogue, still found in many libraries in Europe. Chicago has one of the few examples in the United States, the classified catalogue at John Crerar Library. New York has one at the Engineering Societies library, and a third is at Boston University.

Your typical subject-heading list is a pre-coordinate index. This course is concerned with post-coordinate indexing in the sense that we take terms and put them together for retrieval, not set them up ahead of time, because in most cases our people will be going into organizations which use post-coordinate indexes. We look at the history and development of co-ordinate indexing, its concepts, the construction of a thesaurus, and the construction and use of an index. My text is a book by A. C. Foskett called *The subject approach to information*, published by Linnet and in England by Bingley. After three or four years I still have not found anything I like better; it explains the organisation of knowledge and various schemes and it is fairly readable.

The elements included in the course itself are hard to describe in sequence because they do not happen in simple sequence; they mesh together and overlap. With this in mind I shall try to give you some idea of each.

First, we tackle the concept of abstracting. What is an abstract? How do you construct an abstract? How do you write an abstract? The text is a succinct paperback called *Abstracts and abstracting services* by Robert Collison, published by ABC-CLIO. It contains the gist of it all in about eighty pages. The students read articles on how to abstract, and then abstract the articles, several per week. These are edited extensively and returned. In just a few weeks the improvement is pleasing. The person who overflowed two pages with literary style tightens his sentences, simplifies his construction, gets it down to a paragraph and still covers the facts.

The next step is processing natural language. Each student indexes a set of abstracts using the natural language terms found in the abstracts and in the titles. Each person puts his index terms into a computer program which then combines all the entries and prints them out in alphabetical order. The result includes sequences like: information banks, information centre, information retrieval, information science, information scientists, information systems, information technology. Everyone expects this to be easy, but then the problems show up, synonyms, root words with different endings, overlap, inconsistency. They learn first hand the confusion from using natural language in the context of an uncontrolled vocabulary. Each gets a copy of the computer printout and the assignment to edit it.

KWIC (keyword in context) is a form of natural language index. They should know how it works and how to put one together, because in most special libraries it is a practical tool for producing a fast and cheap index to the titles of articles. The titles can be selected, enriched, manipulated to provide a frequent current awareness listing sent to everybody in the organization. The students feed their titles into the computer, then evaluate their printouts to see that the same natural language problems occur in KWIC indexes.

The use of a thesaurus for indexing is covered. Claire Schultz's *Thesaurus of information science terminology*, published by CSC/Pacific, is built for handling material on abstracting and indexing and is easy to use as the control vocabulary. They now start indexing the articles that they have been abstracting. In the cycle of learning they read material which tells them how to do what they are doing to the material they are reading. It works out pretty well.

As the class goes along through this whole procedure I have been outlining, I introduce the basic hand systems because many organizations do not have the facilities or funds for computer terminals. One is uniterm, basically a card which has ten columns. A subject heading is entered at the top of each card and the number of any document indexed with that subject is recorded in the columns. You retrieve by pulling out the pertinent subject cards and finding which documents appear on every one of the cards you pulled. Uniterm is a cheap and easy way to organize information. I generally tie this in with a natural language lesson so they see the problems of natural language and of uniterm simultaneously.

Optical coincidence systems also have one card per subject heading. I discuss the principles behind peek-a-boo and use demonstration materials, but do not assign a problem.

For extensive class work I use edge-notched cards. Each card is a unit record with all the elements present: the citation and abstract typed on the front, index terms listed on the back with their coding, and the coding punched around the edges. The whole thing is right there, and it makes a good teaching tool. Using a hand deck like this, they get an idea of how retrieval works. They needle their own decks and say, ‘Why did
I get this false drop? Why didn’t things co-ordinate properly?’ The students themselves can analyse the process, which is hard to do when the information is in the computer.

Early in the course abstracts are typed on edge-notched cards which are turned in, edited, and returned. Index terms are added on the back and edited. Codings are punched around the edges. The students use the cards over and over throughout the course, slowly building a deck of about twenty-five. That is as many articles as they can comfortably handle in a semester’s time. I find this a practical unit to demonstrate exactly how information gets from hand to machine to computer.

Last, we go into computer systems. They have had the course on automation in libraries, they have put a natural language index and a KWIC index in the computer. What I try to bring home to them now is that the computer systems merely speed up the hand techniques. You feed the information on the edge-notched cards into the computer. Instead of needling the deck to get information you query the computer and get back a printout.

I have developed a couple of data bases for the students to use; in addition we have access to Medline, Systems Development Corporation, and Lockheed. I hope students can have even more hands-on experience with these data bases because it expands their universe to see how the indexes work.

The course is not static, but is adjusted and altered each time I offer it to meet the challenge of changing aspects and improving techniques in the profession of indexing and abstracting.

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The abbreviations of titles of periodicals

In 1970 the British Standards Institution published Part I of its Standard 4148 The abbreviation of titles of periodicals. This gives the principles of abbreviation.

Last November, Part 2 Word-abbreviation list completed the publication. It gives the recommended abbreviations for some 7,000 words, or roots of words, commonly used in the titles of periodicals in many different languages.

The standard agrees with the International list of periodical title word abbreviations produced as the result of an operation sponsored by Unesco and the International Council of Scientific Unions (ICSU); this list has been accepted by various national and international bodies including the American National Standards Institute, the International Centre of the International Serials Data System (ISDS), and the International Organization for Standardization (ISO).

An additional feature of this British Standard is the inclusion of a ‘reverse list’ giving alphabetically the abbreviations followed by the full words or roots of words.

Copies of BS 4148 Part 2 are available from BSI Department, 101 Pentonville Road, London N1 9ND. Price £6.50 including postage.

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Thesaurus of micrographic terms

A third edition (revised by Gordon Harris) of this Thesaurus, compiled by B. J. S. Williams and intended as a component of the National Reprographic Centre for documentation (NRCd) information system, has been published by the Centre.

It is used particularly in presenting the abstracts which appear in each issue of Reprographics Quarterly. It does not generally define terms but includes, where necessary, scope notes to indicate the meanings of terms in the context of the NRCd system.

The Thesaurus has been designed specifically for conducting subject searches into the literature on micrographics that has been abstracted and is held by NRCd.

In the last three years numerous detailed changes have been made to reflect the development of terminology and applications; in total, these result in a significantly different and improved Thesaurus.

Copies are available from the Centre at The Hatfield Polytechnic, Endymion Road Annexe, Hatfield, Hertfordshire, AL10 8AU, England, price £1.25 (NRCd subscribers) and £2.00 (others).