

Education for indexing in North America: course content, emphasis, and approach

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Using earlier work described in The Indexer in April 1977, the author has greatly expanded his directory of American and Canadian courses on indexing. He has been able to discover and to classify no fewer than 160 'topics' related to indexing, and his analysis and correlation of these formed the basis of a questionnaire sent to sponsors of indexing courses. They were asked to say which of the topics were 'major' in their courses (5% or more), which 'minor', and which included learning by doing. The classification and the numerical answers relating to 42 courses constitute Table 1, the pièce de résistance of this article. Tables 2 and 3 compare the results with those of the earlier work mentioned, Table 4 compares the 'major' and 'minor' rankings of 20 topics in 1980 and 1976, and Table 5 presents a summary of 1980's 'major' and 'minor' topics by category. Finally Table 6 shows the 18 topics treated with 'hands-on' practice, with the numbers of courses for each and their rankings. The first part of the article provides concise descriptions of the highly condensed tables, and is followed by a discussion bringing out the salient features and showing how far the 'major' topics in North American indexing courses 'correspond to the emerging needs of the indexing profession'. The chief of these, the author very nearly says, is the application of computer technology, and in fact the discussion is very largely devoted to this. North American readers are invited to supplement or update the present records, and, by implication, all readers are invited to comment on Table 1.

In 1981, The American Society of Indexers (ASI) published its second directory of courses on indexing offered in the United States and Canada.¹ This directory was based on a questionnaire sent in 1980 to as many appropriate schools, professional associations, government agencies and other sponsors of courses, seminars, and workshops as could be identified. The questionnaire requested sponsors to describe the content of their courses in terms of a new Classification of Indexing Concepts and Procedures (see Table 1). Using the 160 topics enumerated in this classification, sponsors

could indicate major topics covered in their courses (5% or more of course content), minor topics (less than 5% of course content), and those topics for which 'hands-on' experiential learning was provided. This summary of North American course content, emphasis, and approach is based on responses describing 42 courses. Forty-eight courses are included in the directory, but six of them were not described by their sponsors in terms of the classification and are therefore omitted from this summary. The number of courses listing each topic as major or minor and/or 'hands-on' is indicated on the left side of Table 1.

Table 2 lists those topics covered as major topics by ten or more courses in the 1980 survey. The far-right column indicates the type or major category of topic. The topic number preceding the brief topic description may be used to refer back to the full topic description in Table 1. In the left-hand columns, the number of courses listing each topic as major is given, together with the topic's rank among topics in the 1980 survey and the rank of comparable topics in the 1976 survey. Topics listed by the same number of courses share the same rank, but subsequent ranks corresponding to the number of additional topics sharing a rank are skipped, so that each rank indicates the number of topics listed more often. For example, since topics 57 and 136 were both ranked 5 in the 1980 survey, rank 6 is skipped. The next rank, 7, indicates that 6 topics were listed more frequently.

The 1976 survey, based on questionnaires used for ASI's first directory of courses,² was described in the April 1977 issue of *The Indexer*.³ The description of courses in 1976 was based on only 20 topics (listed in Table 4), as compared with the 160 topics used in the 1980 survey. Thus it is important to note that numerical ranks in 1976 and 1980 shown in Table 2 cannot be compared directly. Nevertheless, since the 1976 topics ranked 1 to 13 inclusive and the 1980 topics ranked 1 to 24 inclusive cover all topics listed as major by 10 or more courses, the topics in these ranks can be considered the most important (i.e., most frequently taught) major topics in the respective years. The reason for including 1976 ranks is to show what topics were among the most

Table 1. Classification of Indexing Concepts and Procedures

No. topic number

M Number of courses listing topic as Major component of course

S Number of courses listing topic as Minor component of course

H Number of courses providing hands-on training in the topic

48 Total number of courses in 1981 list

42 Total number of courses indexed (6 courses were not indexed by their sponsors)

No:	M	S	H	
1:	2	1	1	Indexing of particular types of documents—by type of medium, format, source
2:	15	4	8	Books, monographs
3:	12	2	11	Trade books
4:	6	6	8	Government documents, research reports, technical reports, patents, etc.
5:	3	8	3	Collective works, conference proceedings
6:	0	0	0	Other special types of books, monographs
7:	14	9	13	Periodicals, serials (for analytical indexing, e.g. of periodical articles, see 45—Analytical level indexing)
8:	1	5	0	Newspapers
9:	0	0	0	Other special types of serial documents
10:	4	7	2	Nonbook print documents
11:	3	5	5	Maps
12:	3	4	6	Music
13:	3	6	3	Pictures
14:	0	1	0	Other special types of nonbook print documents
15:	3	10	2	Manuscripts, archival materials
16:	5	7	3	Audiovisual media
17:	3	5	6	Film media
18:	4	4	7	Sound recordings
19:	1	1	2	Other special types of audiovisual media
20:	4	10	6	Microforms
21:	11	8	5	Machine-readable texts, files (see also 22—databases, 24—bibliographic databases)
22:	10	8	3	Reference works, including databases
23:	7	2	2	Abstracts
24:	4	6	1	Bibliographies, catalogues, bibliographic databases
25:	1	8	0	Biographical dictionaries, databases
26:	1	8	0	Directories & analogous databases
27:	1	7	0	Handbooks & analogous databases
28:	2	7	0	Encyclopedias & analogous databases
29:	0	7	0	Statistical compendia, numerical databases
30:	0	2	0	Other special types of reference works, databases
31:	1	0	1	Other types of documents
32:	1	4	3	Indexing in particular subject fields
33:	4	9	4	The Humanities
34:	0	7	0	Particular parts of the humanities
35:	7	9	5	The Social Sciences
36:	1	7	0	Particular parts of the social sciences
37:	7	7	4	The 'Pure' Sciences
38:	0	6	1	Particular parts of the 'pure' sciences
39:	9	5	5	The Applied Sciences/Technology
40:	1	5	1	Particular parts of the applied sciences and technology
41:	0	0	0	Other subject fields
42:	4	1	1	General indexing concepts/Index characteristics (properties of indexes)
43:	12	4	6	Levels or depth/density of indexing
44:	12	9	7	Document-level indexing; Cataloguing; Summarizing
45:	9	6	4	Analytical level indexing (e.g. indexing articles in periodicals)
46:	3	6	2	Exhaustive indexing
47:	0	1	0	Other levels of indexing

Table 1 *cont.*

No:	M	S	H	
48:	9	6	5	Specificity
49:	8	6	3	Specific indexing
50:	8	7	4	Generic indexing; generic posting
51:	0	0	0	Other aspects of specificity
52:	10	8	0	Consistency
				Scattering: see 96—Vocabulary control
53:	5	11	0	Literary warrant
54:	5	12	0	User/searcher warrant, request-oriented indexing
55:	0	2	1	Other general indexing concepts/index characteristics
56:	6	3	1	Indexable matter
57:	18	8	10	Words, word indexing
58:	11	12	9	Names, name indexing
59:	10	14	5	Bibliographic citations, citation indexing
60:	4	9	3	Tables of contents (e.g. 'Current Contents' indexes)
61:	17	5	5	Concepts, concept indexing (indexing ideas represented as distinct from the words or other symbols that represent them)
				Subject indexing: see 92—Subject analysis.
62:	1	0	0	Other indexable matter
63:	6	0	1	Methods of indexing
64:	8	11	4	Automatic, computer-produced indexing
65:	9	8	5	KWIC, KWOC, rotated and permuted keyword indexing
66:	3	8	1	Statistical approaches, including term frequency, co-occurrence, distribution, etc.
67:	1	2	0	Other automatic indexing methods
68:	11	14	3	Computer-assisted indexing
69:	21	5	8	Controlled vocabulary indexing
70:	22	7	9	Pre-coordinated term indexing; subject headings, including Library of Congress, Sears, Medical Subject Headings, etc.
71:	15	7	7	Post-coordinated term indexing; uniterms
72:	11	12	5	Preserved context string indexing methods; e.g. PRECIS
73:	6	7	1	Use of syntactic devices
74:	1	8	0	Links
75:	3	7	1	Role indicators, relational indexing
76:	0	2	0	Other syntactic devices
77:	2	14	2	Use of weights, weighted terms
78:	10	9	4	Use of classification schemes as basis of indexing
79:	10	9	7	Enumerative classification; e.g. Dewey, Library of Congress Classification
80:	3	12	1	Faceted, analytico-synthetic classification
81:	3	9	0	Chain indexing of classified arrays
82:	1	1	0	Other aspects of classification
83:	0	0	0	Other methods of indexing: see also 56—Indexable matter, e.g. 57—Word indexing; 58—Name indexing; 59—Citation indexing; 61—Concept indexing, etc.
84:	5	0	1	Indexing operations
85:	13	5	6	Designing indexes, indexing systems
86:	7	5	2	Defining audience; assessing user needs
87:	6	6	2	Defining scope, domain (sources of indexable matter)
88:	7	6	2	Designing arrangement, access methods
89:	8	5	3	Designing file structure (e.g. for machine-manipulated indexes)
90:	6	4	2	Designing physical layout, output format
91:	1	0	0	Other aspects of designing indexes, indexing systems
92:	25	2	11	Subject analysis, content analysis, document analysis: process of identifying indexable matter, especially indexable concepts (see also 61—concept indexing)
93:	16	0	5	Representation of subjects; content surrogation
94:	14	4	5	Abstracting, extracting, annotating
95:	13	6	5	Formulation of headings, subheadings, modifications
96:	16	3	5	Vocabulary control
97:	20	5	12	Thesaurus construction, maintenance; including lists of subject headings
98:	9	4	7	Establishing syndetic, reference structure
99:	2	1	1	Other aspects of thesaurus construction, maintenance

Table 1 *cont.*

No:	M	S	H	
100:	4	13	2	Classification schemes—compilation
101:	3	6	1	Facet analysis
102:	4	3	1	Arrangement of facets, arrays, categories
103:	3	3	1	Notation
104:	1	1	0	Other aspects of classification
105:	2	0	0	Other aspects of vocabulary control
106:	0	1	0	Other aspects of subject representation
107:	10	13	9	Sorting, alphabetizing, arranging index entries
108:	5	12	2	Editing, proof-reading, correcting indexes
109:	2	2	0	Other indexing operations
110:	4	3	0	Standards, codes, rules of indexing
111:	6	12	2	National standards; e.g. ANSI standards
112:	9	10	6	International standards; e.g. ISO standards, IFLA standards
113:	8	3	7	Anglo-American Cataloguing Rules
114:	1	11	0	Professional standards
115:	0	4	0	American Society of Indexers standards
116:	1	3	2	Other standards, codes, rules
117:	4	3	1	Index use; searching strategies, techniques, practices
118:	11	9	8	Online, interactive searching
119:	9	10	5	Printed index searching
120:	8	4	3	General searching techniques
121:	9	7	4	Logical, Boolean combination of terms
122:	3	6	2	Weighting of terms
123:	4	8	3	Truncation of terms
124:	0	2	1	Other general searching techniques
125:	5	13	1	Full text searching
126:	9	9	2	Keyword, uncontrolled vocabulary searching
127:	9	9	2	Controlled vocabulary searching
128:	7	9	3	Pre-coordinated vocabulary searching
129:	6	10	3	Post-coordinated vocabulary searching
130:	2	10	0	Searching classified arrays
131:	0	3	0	Searching by classification notation
132:	0	2	0	Other aspects of searching classified arrays
133:	5	11	3	Citation searching
134:	1	3	0	Other types of searching
135:	3	2	1	Research and evaluation
136:	18	3	6	Evaluation of indexes, indexing systems
137:	6	8	3	On basis of recall, in terms of relevance, pertinence, utility, etc.
138:	7	5	4	On the basis of precision
139:	3	6	2	Cost analysis
140:	0	2	1	Other methods: Most aspects of indexing listed in other sections of this classification can be used as the basis for evaluation, but they are not repeated here; e.g. 48—Specificity; 52—Consistency; 96—Vocabulary control, etc.
141:	4	10	2	User studies
142:				142: 1 2 0 Other research on indexing
143:	2	2	0	Professional aspects
144:	2	16	0	Professional organizations
145:	2	11	0	Education, training of indexers
146:	4	12	0	Employment
147:	1	7	0	By institutions, organizations, companies
148:	2	4	0	Self-employment; free-lance indexing
149:	1	2	0	Consulting
150:	0	1	0	Other types of employment
151:	0	10	0	Economic aspects
152:	0	7	0	Salaries, wages, fees
153:				153: 0 5 0 Contracts
154:				154: 0 3 0 Other economic aspects
155:				155: 2 7 0 Copyright
156:				156: 1 3 0 Of indexes themselves
157:				157: 1 3 0 Relationship to indexed documents
158:				158: 3 1 0 Of on-line databases
159:				159: 0 0 0 Other aspects of copyright
160:				160: 0 2 0 Other professional aspects
161/				161/ 4 2 1
165:				165: Other aspects of indexing not listed above

frequently listed in both years. Half of the frequently listed topics in 1980, however, were not included in the 1976 survey. These are indicated by the 'x' in column 1 of Table 2. The square brackets are used to indicate 1976 topics which encompassed the 1980 topic, but which also included other topics that are separately listed in the 1980 classification, e.g., 'Word and name indexing' in 1976, but 'Word indexing' and 'Name indexing' in 1980. A blank space in the column of 1976 ranks indicates a topic that was included in the 1976 survey but not listed as major by 10 or more courses in 1976.

Table 3 shows those topics listed as minor by ten or more courses in the 1980 survey. The table uses the same format as Table 2, with one addition: those topics listed by ten or more courses as minor topics but by ten or more others as major are indicated by including their major-topic rank following a solidus (/) after their minor-topic rank. Thus, for example, 'Computer-assisted indexing' was ranked 2 as a minor topic in 1980, but it was also a major topic in ten or more courses, with the major-topic rank of 19. It was ranked 5 as a minor topic in 1976 and 13 as a major topic.

As already mentioned, Table 4 lists the 20 topics used in the 1976 survey. The major and minor ranks in 1976 are given in the first and second columns respectively. Following each 1976 rank are the major and minor ranks of corresponding topics in 1980, separated from the 1976 rank by a solidus (/). An asterisk (*) is used to indicate topics not listed by ten or more courses in the 1980 survey. Thus, 'Book indexes' was ranked 11 as a major topic in 1976 and 10 in 1980. It was ranked 11 as a minor topic in 1976, but was not listed by ten or more courses in 1980 as a minor topic and is therefore unranked. It should be noted that 1976 and 1980 topics do not correspond exactly.

Table 5 compares the type or category of topics covered as major and minor by courses in 1980. The asterisk indicates types or categories included among minor but not among major topics, namely those related to the indexing profession and to standards.

Table 6 lists those topics for which the 1980 survey found seven or more courses providing 'hands-on' experiential learning opportunities.

Discussion

Tables 1-6 are based on the indexing of course content by the sponsors or instructors of each course using controlled vocabularies. Since indexers are well aware of the phenomenon of inter-indexer inconsistency, it goes without saying that the accuracy or comparability of this indexing is subject to all the same problems of consistency and interpretation that characterize all human indexing when performed by different indexers or even by the same indexer at different times. Any conclusions based on these tables are thus subject to the same

qualifications as any assessment of content based on human indexing.

With this qualification, the major topics covered in indexing courses may be evaluated in terms of whether they correspond to the emerging needs of the indexing profession. Certainly the application of computer technology is one, if not the principal, emerging need today. How well are courses responding to this need, judged on the basis of their coverage of computer-related topics? Classification categories 64-67 deal specifically with 'Automatic, computer-produced indexing' based on the manipulation of graphic symbols as distinct from the concepts represented by these symbols (see Table 1). None of these topics fell within the top 24 ranks of major topics in the 1980 survey (see Table 2). This may be because of the idea that automatic indexing cannot draw upon human intellectual activity, which is the principal component in the indexing of concepts. If so, it is, I believe, a mistake. Human intellect does not individually specify each operation carried out in automatic indexing, but it is human intellect by which such indexing systems are designed. Who should be better prepared to specify requirements and desiderata, to design and evaluate automatic indexing systems than well-trained and experienced indexers? I believe that indexing educators must put more emphasis on this part of the subject. More and more automatic indexing will be done. It is very cost-effective, and has produced acceptable, usable results in many applications. We should study it more deeply.

It is thus disappointing that the only topic listed as major by 10 or more courses in 1976 but by fewer than 10 courses in 1980 is 'Computer-produced indexes'. This topic was rephrased as 'Automatic, computer-produced indexing' (topic 64) in the 1980 classification, and it is possible that course sponsors or instructors interpreted the 1976 term to include indexing that makes some use of computers but is not automatically produced by computers.

Six topics related to computer technology are among the 29 topics listed as major by ten or more courses in 1980. They are marked with an asterisk (*) in Table 2. 'Word indexing' (topic 57) may, of course, be performed by human indexers, but no person can do it as well as a computer. I doubt whether any concordances, for example, are still being compiled by human labour. I hope not. Although 'KWIC, KWOC, rotated and permuted keyword indexing' (topic 65) was not among the top-ranked major topics, these are all methods of word indexing and are very much dependent on computer technology, at least in current applications.

'Post-coordinate term indexing' (topic 71) does not imply the use of a computer in the indexing process *per se*, but such indexes are impracticable for non-mechanized searching systems. It is assumed that

Table 2. Most Frequent Major Topics in 1980, with Corresponding 1976 Ranks

1976 Rank	1980 Rank	No. of Courses	Topic No.	Topic (abbreviated)	Category
x	1	25	92	Subject, content, document analysis	<i>Operation</i>
x	2	22	70	Pre-coordinated term indexing	<i>Method</i>
x	3	21	69	Controlled vocabulary indexing	<i>Method</i>
4	4	20	97	Thesaurus construction	<i>Operation</i>
[8]	5	18	*57	Word indexing	<i>Indexable matter</i>
3	5	18	136	Index evaluation	<i>Research</i>
1	7	17	61	Concept indexing	<i>Indexable matter</i>
x	8	16	93	Content surrogation	<i>Operation</i>
1	8	16	96	Vocabulary control	<i>Operation</i>
11	10	15	2	Books	<i>Document type</i>
4	10	15	*71	Post-coordinate term indexing	<i>Method</i>
8	12	14	7	Periodicals	<i>Document type</i>
4	12	14	94	Abstracting	<i>Operation</i>
7	14	13	85	Designing indexes	<i>Operation</i>
x	14	13	95	Formulation of headings	<i>Operation</i>
x	16	12	3	Trade books	<i>Document type</i>
x	16	12	43	Depth of indexing	<i>Property</i>
x	16	12	44	Document-level indexing (cataloguing)	<i>Property (operation)</i>
x	19	11	*21	Machine-readable texts	<i>Document type</i>
[8]	19	11	58	Name indexing	<i>Indexable matter</i>
13	19	11	*68	Computer-assisted indexing	<i>Method</i>
	19	11	72	Contextual, string indexing (e.g. PRECIS)	<i>Method</i>
[12]	19	11	*118	Online searching	<i>Index use</i>
x	24	10	22	Reference works	<i>Document type</i>
x	24	10	52	Consistency	<i>Property</i>
	24	10	*59	Citation indexing	<i>Indexable matter</i>
x	24	10	78	Use of Classification schemes	<i>Method</i>
x	24	10	79	Use of Enumerative classification schemes	<i>Method</i>
x	24	10	107	Sorting, alphabetizing, arranging entries	<i>Operation</i>

1976 versus 1980 ranks: 1976 and 1980 ranks cannot be compared numerically, since the 1980 classification provides for 160 topics, versus only 20 in the 1976 classification. Topics listed as major by 10 or more courses (out of 35 courses) in 1976 are compared with topics listed as major by 10 or more courses (out of 42) in 1980. The 1976 major topics fell into 13 ranks, compared to 24 ranks for major topics in 1980.

[]: 1976 ranks listed within brackets indicate 1976 topics that included the corresponding 1980 topic along with other related topics; e.g. 'Word and name indexing' (1976) versus 'Word indexing' and 'Name indexing' (1980); 'Using indexes' (1976) versus use or searching of various types of indexes in topics 117 to 134 (1980).

x: An 'x' indicates a 1980 topic that was not included in the 1976 classification.

' ': A blank space in the 1976 rank column indicates a topic that, although included in the 1976 classification, did not fall within the top 13 ranks.

The only 1976 topic falling in the top 13 ranks and not appearing in the top 24 ranks of 1980 is: 'Computer produced indexes', which was ranked 10 in 1976.

*Indicates topics related to the use of computer technology.

courses treating post-coordinate indexing include also the characteristics of the machine-based searching for which they are designed. Similarly, 'machine-readable texts' (topic 21) can be indexed in any number of ways, but the fact that they are designed for computer manipulation should call for the consideration of computer technology.

'Computer-assisted indexing' (topic 68) is a broad topic covering any application of computer technology to any part of the indexing process, including such

matters as sorting, merging, and formatting entries. It was a top-ranked major and minor topic in 1976 and in 1980.

'Online searching' (topic 118) was a top-ranked major topic in 1980, but was not listed as a separate topic in the 1976 questionnaire. Its relation to computer technology is similar to that of 'post-coordinate indexing', already mentioned. It certainly implies study of indexing methods appropriate for computer-based searching systems. And 'citation indexing' (topic 59), a top-ranked

Table 3. Most Frequent Minor Topics in 1980, with Corresponding 1976 Ranks

1976 Rank	1980 Rank	No. of Courses	Topic No.	Topic (abbreviated)	Category
1	1	16	144	Professional organizations	<i>Profession</i>
2	2/24	14	*59	Citation indexing	<i>Indexable matter</i>
5/13	2/19	14	*68	Computer-assisted indexing	<i>Method</i>
x	2	14	77	Weights	<i>Method</i>
x	5	13	100	Compilation of Classification schemes	<i>Operation</i>
x	5/24	13	107	Sorting, alphabetizing, arranging entries	<i>Operation</i>
[12/12]	5	13	*125	Full text searching	<i>Index use</i>
x	8	12	54	User warrant	<i>Property</i>
[10/8]	8/19	12	58	Name indexing	<i>Indexable matter</i>
[4]	8/19	12	72	Contextual, string indexing (e.g. PRECIS)	<i>Method</i>
[4]	8	12	80	Use of Faceted classification	<i>Method</i>
[5]	8	12	108	Editing, etc.	<i>Operation</i>
x	8	12	111	National standards	<i>Standards</i>
7	8	12	146	Employment	<i>Profession</i>
x	15	11	53	Literary warrant	<i>Property</i>
9/10	15	11	*64	Automatic, computer-produced indexing	<i>Method</i>
x	15	11	114	Professional standards	<i>Standards</i>
[12/12]	15	11	133	Citation searching	<i>Index use</i>
x	15	11	145	Education, training	<i>Profession</i>
x	20	10	15	Manuscripts, archival materials	<i>Document type</i>
x	20	10	20	Microforms	<i>Document type</i>
x	20	10	112	International standards	<i>Standards</i>
[12/12]	20	10	119	Printed index searching	<i>Index use</i>
[12/12]	20	10	129	Post-coordinate index searching	<i>Index use</i>
[12/12]	20	10	130	Searching classified arrays	<i>Index use</i>
x	20	10	141	User studies	<i>Research</i>
x	20	10	151	Economic aspects	<i>Profession</i>

1976 versus 1980 ranks: 1976 and 1980 ranks cannot be compared numerically, since the 1980 classification provides for 160 topics, versus only 20 in the 1976 classification. Topics listed as minor by 10 or more courses (out of 35 courses) in 1976 are compared with topics listed as minor by 10 or more courses (out of 42) in 1980. The 1976 minor topics fell into 13 ranks, compared to 20 ranks for minor topics in 1980.

/ Indicates that a topic fell into the top ranks of both major and minor topics. The first rank is its rank as a minor topic; the second is its rank as a major topic.

See also notes following Table 2.

major topic in 1980 but not in 1976, yet one of the highest ranked minor topics in both years, is related to computer technology in the same way as 'word indexing'. Humans can index citations, but machines can do it better. Surely the consideration of citation indexing must include the application of computer technology.

Listed in Table 3 as top-ranked minor topics are two additional computer-related topics that are not also listed in Table 2 as top-ranked major topics. 'Automatic, computer-produced indexing' has already been discussed. The other is 'Full text searching' (topic 125). This, like 'Online searching', brings in computer technology. It also employs techniques of automatic indexing applied at the time of searching.

As well as the simpler automatic procedures, leading to KWIC, KWOC, and rotated and permuted keyword indexes, and used in some post-coordinate term and full text searching, indexers must become more cognizant of more complex 'Statistical approaches, including term

frequency, co-occurrence, distribution, etc.' (topic 66). Indexers asked to index books or other documents presented in machine-readable form will surely begin to use some of these techniques for at least preliminary indexing and identification of promising headings, which they can then edit for terminological style and to express conceptual relationships. Some indexers must be doing it already!

The emphasis in this discussion does not imply that other topics are not equally important. I applaud the fact, for example, that 'Thesaurus construction, maintenance' (topic 97) was one of the highest-ranked major topics both in 1976 and 1980. As more and more automatic indexing is done by computer, thesauri will become more and more useful as aids in searching, since they will facilitate the relating of uncontrolled natural-language text terms by indicating semantic relations among them (e.g., synonymy, genus/species, whole/part, agent/action/object, etc.). I believe that the future

Table 4. 1976 Classification

1976/1980 ranks		
major	minor	
11/10	11*	a. Book indexes (closed-end indexes)
8/12	13*	b. Periodical indexes (open-ended indexes)
	8*	c. Indexing of nonprint materials
8/5	10/8	d. Word & name indexing
1/7		e. Concept indexing
	3*	f. Chain indexing
	4/8	g. Faceted indexing
/24	2/2	h. Citation indexing
4/10		i. Co-ordinate indexing (post-coordinate systems)
1/8		j. Vocabulary control (syndetics, thesauri)
4/4		k. Thesaurus construction
7/14		l. Index design & specifications
4/12		m. Abstracting
10*	9/15	n. Computer-produced indexes
13/19	5/2	o. Computer-assisted indexing
3/5		p. Index evaluation (relevance, recall, standards)
	5/8	q. Publishing indexes (physical make-up)
12/19	12/5	r. How to use indexes effectively
	1/1	s. Professional organizations concerned with indexing
	7/8	t. Employment opportunities

*Topics not included in corresponding 1980 top ranks.

of indexing will lie more with indexing the vocabulary of subject fields to produce comprehensive thesauri than with the indexing of particular documents. These thesauri will be used more and more to facilitate the searching of automatically produced indexes, and less as tools

Table 5. Summary of 1980 Major and Minor Topics by Type or Category

1980 Major Topics	
No.	Category
9	<i>Operation</i>
7	<i>Method</i>
5	<i>Document type</i>
4	<i>Indexable matter</i>
3	<i>Property</i>
1	<i>Index use</i>
1	<i>Research</i>
1980 Minor Topics	
No.	Category
5	<i>Method</i>
5	<i>Index use</i>
4	<i>*Profession</i>
3	<i>Operation</i>
3	<i>*Standard</i>
2	<i>Indexable matter</i>
2	<i>Property</i>
2	<i>Document type</i>
1	<i>Research</i>

*Categories unique to major or minor topics

for regulating the selection of index terms by human indexers.

ASI's indexing courses database

The American Society of Indexers' 'Indexing Courses Database' is now maintained in machine-readable form at the School of Communication, Information & Library Studies of Rutgers, The State University of New Jersey. Any sponsor or instructor of indexing courses (including workshops, seminars, etc.) whose courses are not now included in the database, or who has revised a course, is urged to write for a questionnaire to be used to create or

Table 6. 1980 Topics Presented with Hands-on Practice

Rank	No. of Courses	Topic No.	Topic (abbreviated)
1	13	7	Indexing periodicals, serials
2	12	97	Thesaurus construction, maintenance
3	11	3	Indexing trade books
3	11	92	Subject analysis, content analysis, document analysis
5	10	57	Word indexing
6	9	58	Name indexing
6	9	70	Pre-coordinated term indexing
6	9	107	Sorting, alphabetizing, arranging index entries
9	8	2	Indexing books, monographs
9	8	4	Indexing government documents, research reports, technical reports, patents, etc.
9	8	69	Controlled vocabulary indexing
9	8	118	Online, interactive searching
13	7	18	Indexing sound recordings
13	7	44	Document-level indexing; cataloguing; summarizing
13	7	71	Post-coordinate term indexing; uniterms
13	7	79	Use of Enumerative classification
13	7	98	Establishing syndetic, reference structure
13	7	113	Anglo-American Cataloguing Rules

update a course record. Please write to: James D. Anderson, SCILS, Rutgers University, 185 College Avenue, New Brunswick, NJ 08903, USA.

The American Society of Indexers and its Committee on Indexer Education are also anxious to receive comments, criticisms, or suggestions regarding the Classification of Indexing Concepts and Procedures (Table 1). Send these also to Anderson at the above address.

CIP

Librarians know, and others may have wondered, why cataloguing data are printed on the verso of the title leaf of some recent books. The idea of presenting librarians with a single, complete, authoritative catalogue entry, to hand with and inseparable from the book itself, was mooted in the 1950s. The Library of Congress set up an experiment to test the practicability of the idea. The original result was discouraging, because publishers' information provided before the date of publication was necessarily subject to change, and the new procedures devised for the experiment disrupted normal working schedules, both in the Library and in publishing houses.

The idea was revived, however, this time limiting the data to information less likely to change before publication, and also making additional use of the data. Besides indicating catalogue headings and other access points, such as additional personal and subject entries, in the book itself, where they will be read together with the publisher's imprint, certain national cataloguing agencies are using the pre-publication data to supply advance particulars in publications such as the *British national bibliography* about books to come, which will be fully catalogued after receipt by the national agencies.

From 1971 the Library of Congress and from 1977 the British Library have been preparing data for this Cataloguing in Publication (CIP).

There is still debate about what should be included in the catalogue entry and about its presentation in printed lists and on magnetic tapes, and also about its value to publishers, booksellers, and librarians, as was shown at a seminar on Cataloguing in Publication arranged by the Library Association last autumn. The papers have been published as a special double issue of *Catalogue & index*, nos. 63/64, winter 1981/spring 1982.

Pre-publication cataloguing is practised not only in the United States and the United Kingdom. Brazil began a service at the same time as the Library of Congress, and many other countries have followed suit. An International CIP meeting has been arranged for August 1982, in Ottawa, where publishers and CIP agencies from different countries will attempt to produce authoritative international standards for all matters concerning Cataloguing in Publication.

M.P.

References

1. Anderson, James D. *Education and Training in Indexing for Document and Information Retrieval*. New York: American Society of Indexers, 1981. 147 pp.
2. Anderson, James D. *Directory of Courses on Indexing in Canada and the United States*. New York: American Society of Indexers, 1976. 37 pp.
3. Anderson, James D. 'The education of indexers: current courses and opinions from the field'. *The Indexer* 10 (3) April 1977, 131-7.

User-friendlier LISA

LISA (Library and information science abstracts) appears monthly from January 1982, instead of every two months as previously. *LISA* covers periodicals, conference proceedings, and some monographs and theses, in most European languages. Its coverage has been increased over the past two years to a current yearly total of about 6000 abstracts. In addition to those produced by its own staff, abstracts are contributed by Aslib, the US National Technical Information Service (NTIS) for US government reports, the Educational Resources Information Center (ERIC), and the Printing Industry Research Association (PIRA), which houses the International Electronic Publishing Research Centre, for material on electronic publishing, videotex, and word processing.

A recent issue that I examined contained entries under Abstracting and indexing services, Subject indexing, Subject heading schemes, and several relating to computerized storage and retrieval and word processing.

Each issue now contains full Name and Subject indexes. The name index replaces the Author index, and incorporates all proper names of organizations and systems, which had previously been included in the Subject index. The twelve monthly issues, with the cumulated yearly indexes, are available from the Library Association for a subscription of £100. Current and retrospective issues are available also on microfiche and magnetic tape. Online searching is available through DIALOG and ORBIT.

Most of the documents analysed may be seen in the British Library (Library Association Library), to which members of the Society of Indexers have free access. Photocopies may also be obtained.

M.P.

You can usually expect an animated conversation with an indexer. At a cocktail party, he or she is likely to be the person with the truly indefatigable store of trivia.

—Margaret Carroll, 'Indexer's art is subject to anonymity', *Chicago Tribune* 21.9.78