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PREPARATION OF AN INDEX TO A BOOK: A CASE STUDY.

(Indexing problems. 1).

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Describes how the organisation and the presentation of the text of the book can facilitate the preparation of the index concurrently with the press copy. Illustrates this with the two books of Ranganathan, the *Prolegomena to library classification*, ed 3, and *Ramanujan—the man and the mathematician*. The choice of the ideas to be indexed has to be largely a matter of judgement and no rigid, objective principles can be formulated for it. The author's approach to index is more exacting than that of the reader's and it should be met. Therefore, the indexer should work in close touch with the author. Gives a set of rules helpful in the choice and rendering of the index term, and in the featuring and arrangement of the entries in the index. Describes the Work analysis, Job analysis, and the Routine involved in the preparation of the index.

0 INTRODUCTION

The preparation of an alphabetical index to the text of a book bristles with problems. Several of these problems relate to the choice of the ideas to be included in the index. Although indexing of a book has been in vogue for quite a long time, we are yet to formulate a set of guiding principles helpful in indexing.

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01 INDEX—A BRIDGE

Apart from name entries (See Sec 6), the index should list all the significant ideas contained in the book. In essence, the index should complement the text by an alphabetical featuring of its contents. The index should also satisfy the reader's approach by helping him to locate easily the idea sought by him. The author's approach too will call for entries of its own. Thus the index is a bridge between the ideas in the book and the reader or the author when he looks up the index at a later time. Therefore an indexer should be an able bridge-builder. For this purpose, the indexer has to know on the one side each of the significant ideas in the text and on the other the psychology of the reader's as well as the author's approach towards them. (Author's approach will be dealt with in Sec 5). Obviously, this requires imagination and judgement. Perhaps, it is for this reason that definite rules cannot be framed for the choice of the ideas to be indexed. The best that can be done is to give guiding principles.

02 READER'S APPROACH — NOT CONSISTENT

Each idea in the text should be weighed in the scale of reader's approach. Reader's approach is not consistent. It differs with different readers and at different times with the same reader. The indexer should be one who has varied experience with the reader's approach to the text and must also have a good knowledge of the subject of the text indexed. The choice of ideas will depend upon the

- 1 Character of the text to be indexed;
- 2 Type of readers likely to use the index; and
- 3 Indexer [2].

03 WORK AT DRTC

This problem is being pursued by the Research Cell of DRTC. Experiments are being made in indexing several of its publications. We are now trying to apply the principle of Facet Analysis of subjects for spotting out kernel ideas, and the canons of cataloguing in choosing sought ideas, so as to make the index as effective a bridge as possible between the text and the reader. But we are yet to get at a complete set of guiding principles for indexing.

04 SCOPE OF THE PAPER

The succeeding sections of this paper deal with the several problems arising in the preparation of an alphabetical index to Ranganathan's books:

- 1 *Prolegomena to library classification*, ed 3; and

2 *Ramanujan — the man and the mathematician.*

These two books are of different kinds. The *Prolegomena* is a technical treatise expounding the theory of classification whereas the *Ramanujan* is a biography written for the generalist reader.

05 STRUCTURE OF THE *Prolegomena*

The structure of the text of Edition 3 of Ranganathan's *Prolegomena to library classification* is as described in the Indian Standard on *Guiding principles for the preparation of the text a book or an article in a learned periodical* [1]. The *Prolegomena* consists of 23 Parts comprehending 187 Chapters. The average number of sections of remove 1, remove 2 and remove 3 in a Chapter is as follows:

Section of	Total Number in the book	Average for a Chapter
Remove 1	1,300	7.0
Remove 2	560	3.0
Remove 3	66	0.4

06 STRUCTURE OF THE *Ramanujan*

The text of the *Ramanujan* is a popular writing studded with biographical details bringing out the personality of Ramanujan in different settings. The text of the *Ramanujan* is spread into 16 Chapters. As it is a small book of about 150 pages, grouping the Chapters into several Parts was not found necessary. The average number of sections of remove 1, remove 2 and remove 3 in a Chapter is as follows:

Section of	Total Number in the book	Average for a Chapter
Remove 1	121	7.6
Remove 2	137	8.6
Remove 3	7	0.4

07 ORGANISATION OF THE TEXT

The formation of sections of different remove, chapters, and parts is based on the Principle of Unity of Idea. It states "Unity" of Idea should be all pervasive in each of the structural elements—the sentence, the paragraph, the sub-section of any order, the section, the chapter, the part, if any, the volume, if any, and the text as a whole. The level of unity of idea in the sentence is of the lowest order. The level of unity of idea in the text as a whole is of the highest order. It is of an appropriate intermediate level in each of the other structural elements" [10]. This principle helps controlling the text and increasing its clarity.

In the verbal plane, the language of the books is more or less free from synonym and homonym. Each of these kinds of structural elements has a heading of its own such as part heading, chapter heading, section heading or sub-section heading, and so on. In the notational plane, the digits in the numbers of sections are largely mnemonic; they are expressive of coordination and subordination. Each of the structural elements are fitted with expressive numbers in pure decimal fraction. The Parts are represented by a Roman capital, the Chapters by double Roman capitals and the Sections by Indo-Arabic numerals in the *Prolegomena*. In the *Ramanujan* number of each Chapter is a single Roman capital.

08 ADVANTAGE OF CONCURRENT INDEXING

The provision of numbers to the structural elements — and the use of these numbers instead of the usual page numbers as index numbers — makes it possible to prepare the index even at the stage of presscopy instead of waiting for the page-proof of the printed text. Ranganathan even practises the preparation of the index entries as the writing of the text proceeds. This practice has been of immense help in avoiding casual errors such as

- 1 Gaps in the idea plane;
- 2 Lack of clarity in the verbal plane;
- 3 Unconscious and unintended repetitions;
- 4 Self-contradicting statements; and
- 5 Unconscious use of homonyms and synonyms.

It also helps in providing cross references within the text. In preparing the index in this way, I have found that Ranganathan has been saved of a good deal of load on his memory. In addition, the most helpful factor in using the part *cum* chapter *cum* section number as the index number, instead of the page number, is the

- 1 Elimination of the time usually lost between the printing of the text and of the index; and

2 Index number prescribes the location in the text more precisely than the page number.

1 CHOICE OF IDEAS FOR THE INDEX

As the organisation of the ideas in the text of the above-mentioned two books was carefully done so as to conform to the Principle of Unity of Idea and with the help of the Canon of Seminal Mnemonics [8], the Canon of Decreasing Extension [7], and the Principles for Helpful Sequence [9], the choice of ideas for the index was facilitated. The ideas denoted by

- 1 All Part and Chapter headings;
- 2 Most of the section and sub-section headings, but not all; and
- 3 All the other ideas contained in each section or sub-section likely to be sought by the reader, were chosen for inclusion in the index.

(For examples See Sec 4).

2 CHOICE OF INDEX TERM

After choosing an idea for inclusion in the index, the next problem is to choose the term to denote it. In general, a term chosen to denote an idea in the index should be, in the sequence of preference, the one

- 1 In standard terminology;
- 2 Sought by the majority of the readers;
- 3 Used by the author;
- 4 Expressive;
- 5 Single-worded; or
- 6 Multi-worded.

21 CHOICE OF INDEX TERM FROM THE HEADING OF A STRUCTURAL ELEMENT

In the preparation of the index to the two books mentioned in Sec 05 and 06, the terms forming the headings of the following structural elements were taken as index terms:—

- 1 Each Part;
- 2 Each Chapter;
- 3 Each Section; and
- 4 Each Sub-section etc.

This was possible, as the author himself had taken care to see that the headings of each one of the structural elements conformed to the scale of preference suggested in Sec 2. In some cases when the heading did not conform to the above for some other overwhelming reasons, the index term was chosen from

the structural elements instead of taking the heading as it is, (For examples See Sec 41)

22 CHOICE OF INDEX TERMS FROM THE TEXT WITHIN EACH SECTION OR SUB-SECTION

As already stated in Sec 1, any idea contained in the text of a section or a sub-section may also be a sought-idea. But it might have been expressed in too loose a term to be used as index term. It may not be in a helpful grammatical form to be in a nominative case. In that case, it should be replaced by a term conforming to the scale of preference mentioned in Sec 2 (For examples See Sec 421 and 422).

23 SYNONYMS AND HOMONYMS IN TECHNICAL WRITING

Occasionally, the indexer may come across synonyms and homonyms in the text. The indexer should bring them to the notice of the author. Because, their use should be avoided in a technical writing. Familiarity with the standard terminology used in the schedules of a good scheme for classification may be helpful to the indexer in detecting the homonyms and synonyms. The residual homonyms and synonyms may get detected at the time of consolidation of the entries, as if they were passed through a sieve.

24 SYNONYMS AND HOMONYMS IN NON-TECHNICAL WRITING

In literary and popular writing the apparent synonyms are used. A truly creative author such as Valmiki, Kalidasa, and Shakespeare uses the apparent synonyms with significant difference in the shades of meaning. The indexer should not interfere with such use. In such cases the indexer should be in very close touch with the author and understand his ideas deeply. Because, in the case of literary works, the subtlety of the ideas is generally hidden. The creative author believes in the saying "There is art in concealing art".

25 CROSS REFERENCES

The approach of some readers may require an entry under a permuted form of a multi-worded term, and for synonyms taken as sought terms. It is not economical to repeat the block of entries under each of the permuted heading or each synonym. It would unnecessarily swell the index. The Law of Parsimony will not permit this. Therefore, the compromise is to provide a cross reference entry — a *See* entry — under the non-preferred term, if there are two or more entries under the equivalent preferred term. However, if there is only one entry under a preferred term, a regular index entry may be given with each of the

sought permuted term or sought synonym as the heading. For, in this case whether it is a *See* entry or a regular entry, one and only one extra entry is necessary. Nothing is gained by making a *See* entry and asking the reader to look up some other entry in the index. (For examples *See* Sec 411 and 412).

26 A PRECAUTION

Consider the following set of entries:—

Ananda Rao
irt Ramanujan ML
rirt Ramanujan's
 conjecture ML7
 food habits ML2
 interests ML5
 life in Cambridge ML2
 mother ML4
 sociability ML3
 unassuming nature ML6

These index entries are for ideas contained in Sec ML of the *Ramanujan*. (As the number of sections in Chap M was more than eight — it was eighteen — Roman capitals were used instead of Indo-Arabic numerals). Let us say that a reader approaches the index with 'Ananda Rao' as sought term. The index number of the first entry in the above set of entries gives the number of the Section — ML. The index number against each of the other entries in the above set gives merely the number of a sub-section of the section ML. The sub-section headings are prominently featured. Therefore, if the reader once gets into Sec ML he will be guided to the ideas in each one of the sub-sections. Therefore, it is felt that the alphabetical featuring of the sub-section headings under the section headings in the index as redundant. On the other hand, there may be need for an index entry under each of the sub-section headings listed above. They should be given as follows:—

Conjectures ML7
 Food habits ML2
 Interests ML5
 Life in Cambridge ML2
 Mother ML4
 Sociability ML3
 Unassuming nature ML6

Each one of the above index entries will be quite apart from one another in the alphabetical index. This will satisfy the reader who may look up the index for, the terms such as 'Conjectures of Ramanujan', 'Food habits of Ramanujan', 'Mother of Ramanujan', etc.

Note: In the above set of entries the term Ramanujan is deliberately omitted. For, unless otherwise indicated, every idea indexed in the book under consideration relates only to Ramanujan. It is only in very few exceptional cases that the term Ramanujan is added.

27 SUPPLY OF AN INDEX TERM BY THE INDEXER

An author may denote an old idea by a term not in current standard terminology, or he may denote an idea by a term not sufficiently expressive. These will create a problem for the indexer. In such a case, the indexer will have to supply the index term himself. Sometimes, he may have to supply a term to denote an idea contained in a paragraph without section heading. But on the other hand, if the indexing is done concurrently with the preparation of the ultimate draft of the presscopy (that is, the copy from which the final presscopy is made), the indexer and the author can consult each other and eliminate such problems or jointly improvise the index term.

3 HEADING OF AN INDEX ENTRY

After the choice of the idea and of its index term, the term should be rendered for use as heading of the index entry.

31 SINGLE WORDED TERM

If the index term is single worded one, it should be written in the heading in the nominative cases, singular form though plural form may be necessary in exceptional cases.

Example:

Consider the sentence

"Ramanujan had a somewhat shy disposition".

The single worded term 'Shy' got by breaking the composite term 'Shy Disposition' is rendered as 'Shyness'.

32 SINGLE WORDED TERM WITH A QUALIFIER

If the index term is a single worded term preceded by a qualifier, the qualifier and the term should be written in the sequence in which they usually occur in the language. Whether a cross reference index entry should be given for the inverted form is a matter of judgement.

Example:

The index term 'Seminal Level' is rendered as 'Seminal Level' only and not as 'Level, Seminal', although a cross reference entry may be made for the latter.

33 MULTI-WORDED TERM

If the index term admits of two or more words in the nominative form, the heading will be a multiple heading. Each component heading of the multiple heading should be written in accordance with Sec 41 and 42. The only problem left over is the sequence of the headings. It is helpful to use the chain procedure, and arrange the constituent terms in the sequence of decreasing concreteness as in the feature heading of a classified catalogue [3]. As already stated in Sec 25 the reverse sequence may be used for cross reference entries. The extent to which the other permutation of the constituent terms is to be used as heading of a cross reference index entry is a matter of judgement. Whether any constituent term should be preceded or succeeded by an auxiliary word is also a matter of judgement provided that wherever possible the auxiliary word be avoided.

Example:

- 1 'Constituent of milk' is rendered as 'Milk, Constituent'.
- 2 'Classification of Subjects' is rendered as 'Classification, Subject'.

34 RELATIVE INDEX

Each heading in the index should have one and only one index number. If the heading calls for more than one index number, sub-headings should be added to the main heading so as to get to "One heading One-index number". The addition of sub-heading should be continued until we get "one heading one-index number" in an entry of the index. Such an index is called Relative Index.

Example:

Array
 Coalesced EN6
 Collateral CE34, CA511
 Extrapolation in LC

35 BLOCK INDEX

If, on the other hand, sub-headings are not used and all the index numbers are shown successively against the main heading itself, the index is called a Block Index.

Example:

Array CA511, CE34, EN6, LC
Relative index is far more helpful than the Block Index.

36 EXPRESSIVE INDEX

Even in a relative index, a heading may gather two or more index numbers against it. For example, this may happen when a term is defined in one place, described in another place and

merely mentioned in a still another place. Again it may be merely mentioned in several places — in each place in relation to different ideas. To be helpful to the user, such a block entry should be broken. The following example illustrates Ranganathan's method of indexing:—

Array
 Coalesced EN6
 Collateral
 def CE34
 irt Diagram CA511
 Extrapolation in LC

37 STYLE OF WRITING

371 CAPITALISATION IN HEADING

The first letter of each of the following should be in capital:—

- 1 Each main heading in the index;
- 2 Each word in the name of a corporate body should be in capital in all places it occurs in the index (*See* Sec 6);
- 3 Sub-heading to be read before the main heading while forming the full term to express the idea;
- 4 Sub-heading starting with a name of a person, a corporate body, or a place (*See* Sec 6); and
- 5 Heading coming after an abbreviated descriptive term such as *def*, *irt*, *irt*.

372 PUNCTUATION MARKS AND ITALICIZATION

1 The individualising elements in the name of a person, corporate body, or place should be in circular brackets.

Example: Sayers (W C B)
 National Library (India)
 Salem (India)

2 When written in one line, a comma should separate the secondary element and the entry element, wherever the secondary elementary should be read before the entry element while forming the full term. The first letter of the first word in the secondary element should be in capital.

Example: Book, Ultimate class of a

3 All the abbreviated descriptive terms such as *desc*, *irt*, and the directing elements *See* and *See also* are to be in italics.

38 INDEX NUMBER

The index number is the number giving the location of the idea denoted by the heading. It may be a page number, or a section or sub-section number taken along with the Part and Chapter number. The latter is possible only if the Parts, Chapters, and Sections of different removes are numbered (*See* Sec 08).

There should be three letter space blank between the index heading and the index number.

4 ILLUSTRATION

41 STRUCTURAL ELEMENT

411 *Prolegomena*

Heading of Structural Elements	Index Entries
C Basic concept in classification	Basic concepts in classification C Classification, Basic concepts in (Cross reference)
J Basic canons for notation	Basic canons for notation J Notation, Basic canons for (Cross reference) Canons for notation, Basic (Cross reference)
K Canons for mnemonics	Canons for menmonics K Mnemonics, Canons for (Cross reference)
M Planes of work	Planes of work M Work, Planes of (Cross reference)
XG Abstract classification	Abstract classification XG Classification, Abstract (Cross reference)
NE Alphabetical device	Alphabetical device NE Device, Alphabetical (Cross reference)
TD1 Approach document	Approach document TD1 Document, Approach (Cross reference)
CN23 Universe of points in a plane	Universe of points in a plane CN23 Points in a plane, Universe of (Cross reference)

412 *Ramanujan*

Heading of Structural Elements	Index Entries
H Precipitation of honours E University setting B5 Posthumous phenomenon	Honours, Precipitation of H University setting E Phenomenon. Posthumous B5 Posthumous phenomenon (Cross reference)
D8 Ramanujan archives	Archives, Ramanujan D8 Ramanujan archives (Cross reference)

42 TEXT WITHIN A SECTION OR A SUB-SECTION

421 FROM THE *Prolegomena**Text*

R Analytico-Synthetic Classification (Idea Plane)

RA Work Near Seminal Level

RA3 Descent Towards the Seminal Level

Millions and millions of isolate ideas, facets, and subjects confuse and taunt us at the phenomenal level. Several millions of immediate-neighbourhood relations put in their claim to be kept invariant in the mapping of the subjects on a line. Some other millions put in their claim for neighbourhood relation of remove 2. And so on. We must escape from this situation. A suitable method of escape would be to descend from the phenomenal level nearer and nearer to seminal level.

Index Entries (Cross references are not shown)

Analytico-synthetic classification, Idea Plane R

Work near seminal level RA

Descent towards seminal level. RA3

Large number in the universe of ideas RA3

Work in phenomenal level RA3

Immediate-neighbourhood relation RA3

Invariant RA3

Mapping of the universe of subjects on a line RA3

Neighbourhood relation of remove 2 RA3

Method of escape RA3

Diving into seminal level RA3

Annotation

The above index terms denote the significant kernel ideas forming the essence of the text of the section concerned. Therefore, each one of them is likely to be sought by the readers or at least by the author himself, whenever they want to locate a particular idea in the book. Probably, one may doubt whether the idea denoted by the term 'Method of escape' will be sought by anybody. But the author may be satisfied. Actually, even while Ranganathan was three-fourths of the way in writing the book, he suddenly wanted to know where and in what context he had expressed this idea. Two factors helped him in this situation. Firstly, I had been indexing the book concurrently with his writing of it. Secondly, I had included this idea in the index. Thus, it may be seen that no rigid, objective principles are available to guide the indexer in the choice of such ideas. It has to be entirely a matter of judgement.

422 FROM THE RAMANUJAN

Text

- M Reminiscences of Friends
- MN Reminiscences of Mahalanobis
- MN6 Ramanujan's Personality

Ramanujan had a somewhat shy and quiet disposition, a dignified bearing and pleasant manners. He would listen carefully to what other people were saying but would usually remain silent. If he was asked any question, or on rare occasions, if he joined in any general conversation, he would speak in a frank and open way but briefly. In speaking to a friend or in very small groups, he would however, expound his own ideas with great enthusiasm, not only on philosophical questions but occasionally also on other subjects in which he was seriously interested. Although I could not follow his mathematics, he left a lasting impression on my mind. His bright eyes and gentle face with a friendly smile are still vivid in my mind.

The above text describes the personality of Ramanujan as seen by Prof Mahalanobis. The book contains Reminiscences of Ramanujan written by several persons who had come into contact with him at several stages in his life. The index should bring together the special qualities in Ramanujan's personality referred to by several persons. Therefore, very close indexing is necessary and almost every quality in his personality claims to

be an indexable idea. Therefore, the following ideas are chosen for inclusion in the index:—

Index Entries (Cross reference entries are not shown)

Reminiscences of friends M	Conversationalist MN6
Mahalanobis, Reminiscences of MN	Frankness MN6
Ramanujan's personality MN6	Open-mindedness MN6
Shyness MN6	Brevity in speech MN6
Quietness MN6	Friendliness MN6
Disposition MN6	Enthusiasm MN6
Dignified bearing MN6	Intellectual interest MN6
Pleasantness MN6	Impression MN6
Manners MN6	Eyes MN6
Listening quality MN6	Face MN6
Silence MN6	Smile MN6

Annotation

It may be thought that the indexing of some of the above terms is erring in excess — for example, "Quietness". But care has been taken to see that each term included in the index forms a focus of a significant account of Ramanujan's Personality. Although ideas such as "Philosophical questions", "Mathematics", are potent ideas they cannot be taken as sought ideas in the above context. In broad indexing it may be sufficient to dispose of this section with the single index entry 'Personality'. But such an indexing will not give adequate help to readers.

5 AUTHOR'S APPROACH

While choosing the idea to be indexed, it must be remembered that the author is likely to look up the index at later times to locate in the text any minute idea he had expressed. The author looks for ideas and terms which ordinary readers may not look for. Working with Ranganathan, who began to write books each year from as far back as 1931, I often experience his finding the index to his books inadequate while looking the idea expressed by him in his books. He insists that the index should be as helpful to the author as it is to the reader.

51 EXAMPLE FROM THE PROLEGOMENA

For example, let us take the *Prolegomena*, ed 2 (1957). Ranganathan recalled certain ideas which he knew that he had denoted in the book, by the following terms:—

- Consummation
- Curriculum *irt* Classification
- Danger spots in scientific method

DDT

Divya Indriya

Transcendental sense

But to his dismay, he could not find these terms in the index. Imagine the plight of an author wanting to recollect his own ideas and unable to locate them in his own book. It often leads to despair. The rhythm and the tempo of his thinking gets destroyed. But, if, on the other hand, the index had included these terms, they would have helped the author in time and he would go unhampered in his thinking. Therefore, we found that the inclusion of ideas and terms which are likely to be referred to by the author at a later time in the index is very essential. On the same principle, Edition 3 of the *Prolegomena* adds (in addition to what is given above) the following terms:—

Ebulliousness of the verbal plane MD2

Kilvalur SM3

Lion sign board PD4

Midas HA7

"One good custom" WA5

Saree analogy XA61

Sluggishness of language MB11

Swan sign board PD4

Trunk of an elephant MC6

Zodiacal signs FD43

52 EXAMPLE FROM THE *Ramanujan*

The following index terms are included in the index to the book *Ramanujan* to meet the author's approach to the index.

Drashta C6

Kundalini-sakti MF62

Driver's pride MS1

Psycho-genetic force B6

Funny anecdotes MJ4

Purva-janma-wasana B6

Gangasnanam MF4

Seer C6

Human frog MF6

Vastu-tantra N4

6 NAME OF THE AUTHOR AND TITLE OF THE DOCUMENT

Ranganathan does not include names of authors or titles of books in the index. In his practice they appear in the alphabetical bibliography. Each entry of the bibliography gives the section of the text in which it is referred to. This avoids the repetition of the names of authors and of the title in the index as well as the bibliography. This satisfies the Law of Parsimony. Occasionally, a title may be referred to in more than one section, then it will be equivalent to a block index. This block must be broken up and the bibliographical references be made expressive.

This is secured in the same way as in the index, with the help of an abbreviated descriptive term such as *irt*, *qirt*, or *rirt*.

Example:

157 Sec CU3 Rider (F). International classification.
Prelim ed. 1961. P xv. *qirt* Enumerative
classification.

Sec MC6 do. *qirt* Bibliographical classification.

61 OTHER NAMES

Generally, the names of persons, corporate bodies, and geographical entities referred to in the text are included in the alphabetical index. For rendering the name, the rules of a good catalogue code are helpful. We use the rules in Ranganathan's *Classified catalogue code* [4]. The practice of expressive index is followed for the names also. For example,

Blake *irt* Intuition XC11

Bliss *r by*

Ranganathan ABI

Sayers AA2

Dewey *rirt* His

letter on CC DG4

open mind WA7

7 FEATURING AND ARRANGEMENT

71 FEATURING OF AN ENTRY-GROUP

The form of an entry-group in an Expressive Index may be either of the following:—

Book—*def* UA1; Multi-volumed UA21; number UB2;

rirt Five laws DB6; Ultimate class of a UB1

OR

Book

def UA1

Multi-volumed UA21

number UB2

rirt Five laws DB6

Ultimate class of a UB1

The first form is called the Continuous Form. In it the main heading is put first and all the sub-headings, the abbreviated descriptive terms such as *def*, *irt*, *rirt*, etc and the combinations of these two follow the main heading continuously in one line or set of lines.

The second form is called the Display Form. In it the main heading is put on the first line. Each of the sub-headings of remove 1, abbreviated descriptive terms, etc begin on the second

line, indented by a unit to the right from the first letter of the main heading. Similarly, with sub-headings of remove 2.

The helpfulness of the Entry-group in Display Form over the Continuous Form is obvious. It breaks the entry-group into smaller ones which can be easily picked up by the eye. It comes within a single sweep of the eye.

The index to books of Ranganathan, the DRTC Seminar Volumes, and the *Library science with a slant to documentation* have their entry-group in the Display Form. The index of each publication is taken as a step in the experiment. And each index is critically studied to find methods for further improvement. The Relative Index of Ed 17 of *Decimal classification* is also in Display Form.

72 ARRANGEMENT OF ENTRIES

The following three kinds of arrangement of the entries of the alphabetical index to a book are possible.

- 1 Although Arrangement;
- 2 Arrangement by the Principle of Nothing before Something; and
- 3 Gestalt.

In the Although Arrangement, even a word-group or a succession of words is treated as if it were a single word.

In the Nothing before Something Arrangement the space between two consecutive words is given as ordinal value less than that of A.

In the Gestalt Arrangement even the punctuation marks are given ordinal values. So also the capitals, lower case letters, and letters in italics get their ordinal values [5].

For an expressive index having its entry-group in Display Form, Nothing before Something Principle for alphabetisation is preferred.

8 PROCEDURE FOR INDEXING

The succeeding sections of this paper describe the procedure — Work analysis, Job analysis, and Routine — for indexing. This procedure was originated by Ranganathan some years ago. Its first description was given by B C Tewari [11]. This is being continuously refined at DRTC during the last four years in the course of preparing the indexes for books — simple and composite — and periodicals.

80 PRESENTATION

The presentation of the text of this section follows the model set and illustrated in Ranganathan's *Library administration*

[8]. For convenience, I repeat the following two definitions from that book:

A job is an ultimate piece of work, which is best done at a single stretch and whose duration is ordinarily short.

A number of related jobs constitute an item of work.

81 WORK ANALYSIS

Indexing of a book consists of the following items of work.

- 1 Choice of Index Entry Work;
- 2 Slips Preparing Work; and
- 3 Presscopy Work.

82 JOB ANALYSIS

82:1 Choice of Index Entry Work

The Choice of Index Entry Work consists of the following jobs:—

- 1 Reading of the text;
- 2 Consulting the author (1);
- 3 Choice of the idea and of the term for the index;
- 4 Consulting the author (2); and
- 5 Rendering for an Index Heading.

82:2 Slips Preparing Work

The slips preparing consists of the following jobs:—

- 1 Slips typing;
- 2 Slips verifying;
- 3 Slips arranging; and
- 4 Slips consolidating.

82:3 Presscopy Work

The Presscopy Work consists of the following jobs:—

- 1 Presscopy writing;
- 2 Presscopy draft typing;
- 3 Consulting the author (3);
- 4 Verification of the draft;
- 5 Final presscopy typing; and
- 6 Verification of the final presscopy.

83 ROUTINE

831 Choice of Index Entry Work

831:1 READING OF THE TEXT

Read thoroughly the text of the Chapter or, if the Chapters are short, a group of chapters forming a unit of idea. This can be done with the penultimate draft of the presscopy of the Chapter or the Part. This is necessary to grasp the ethos of the book. The section number of the text lacking in clarity may be noted

in a notebook with details of points to be discussed with the author.

831:2 CONSULTING THE AUTHOR (1)

On an appointed day of the week, consult the author about the doubtful ideas. Get it clarified and remove the doubt. After this, score off the respective section numbers with a stroke in the notebook.

831:3 CHOICE OF THE IDEA AND ITS TERM FOR THE INDEX

Choose from the text the idea to be included in the index. In the penultimate draft of the presscopy underline, with pencil, the term denoting the chosen idea. If the choice of the idea and/or its term is doubtful, note it down on the slip along with its index number. Keep the slips in a work box in the sequence of the occurrence of the idea in the text.

831:4 CONSULTING THE AUTHOR (2)

On an appointed day of the week, consult the author about the choice of ideas and the terms denoting them. Rectify the doubtful cases. It may be possible that the author chooses some more index terms for his own later reference. Underline these new terms also.

831:5 RENDERING OF THE INDEX TERM

Reduce the underlined term to its nominative case and singular form, wherever possible. Render it so as to form the heading of an entry (See Sec 3). Write in pencil, on the left margin of the text, the rendered form if it differs from that of the underlined term. Write also the permutation and synonyms of it, likely to be sought by the reader or the author.

Indicate the context of the rendered index terms using sub-headings, abbreviated descriptive terms such as *def*, *desc*, *irt*, and the combination of these, wherever necessary.

At the superficial level, it may look that writing the rendered form of the index term and its permutations and synonyms on the ultimate draft of the presscopy as unnecessary and could be straight away written on the slip. But the latter would take the job to the stage of slips typing. However, in actual practice, it was found helpful to render the index term and its permutations and synonyms immediately after choosing it. This conserves the mental energy and the time of the indexer; and the slips can be typed later by a typist on the slips in the Slips Preparing Work.

832 Slips Preparing Work

832:1 SLIPS TYPING

On the basis of what is marked in the ultimate draft,

type (or write in library hand) the rendered index term and its index number on a 125×75 mm slip. Three-letter space should be left blank between the index heading and the index number. In the case of a Cross Reference Index Entry, the directing element "See" should be underlined. (See Sec 37 for Style of Writing).

While typing the slips follow consistently the Principle "One entry — One slip".

The context in which the term occurs (See Sec 831 : 5) should be typed in the second line indented by three-letter space from the first letter of the first line. This is helpful in the Slips Consolidating Work.

832:2 VERIFYING THE INDEX SLIPS

1 Keep the entries arranged in a sequence parallel to the occurrence of the ideas in the text.

2 File cross reference index entries with their respective main entries.

3 Verify the index term and the index number or referred to heading in the case of a cross reference entry of each entry, by checking it with the text.

It is convenient if two persons do this work jointly. In our practice, the indexer takes the help of the typist in checking the index numbers. The obvious advantage is, that the time spent by the typist in looking the text for checking the index number can be profitably used by the indexer to rethink and revise the index entry and make changes, if required, without any difficulty.

823:3 SLIPS ARRANGING

After checking the index number with the text, sort out the slips alphabetically according to the Nothing Before Something Principle (See Sec 72). In alphabetisation, group the entries first according to the first letter of the first word in the index term. Arrange each group of entries in their respective positions as indicated by the letter of the group — Group A, Group B ... Group Z. Take Group A, group the entries according to the second letter of the first word in the index term. Form sub-groups AA, AB ... AZ as in the first grouping. Take sub-group AA. Group it into sub-groups AAA ... AAZ. Continue like this until all the entries under Group A get arranged in the respective position in the alphabetical sequence. Repeat the same with each one of the Groups B, C ... Z. Keep all the entries arranged in one alphabetical sequence in a Work box.

832:4 SLIPS CONSOLIDATING

Make a separate bunch of all the slips having the same entry element. A rubber band or a gem clip may be of use in this. Where necessary, a consolidated entry on a slip may be prepared in the display form for the expressive index.

833 Presscopy Work**833:1 PRESSCOPY WRITING**

After consolidating the entries write all the entries in succession in the Display Form (See Sec 71). The ruled sheets with vertical lines to suit different units of indentation may be used. In writing the entries follow the rules for Style of Writing (See Sec 37).

833:2 PRESSCOPY DRAFT TYPING

Type the draft of the presscopy on unruled sheets in single column with uniform indentions. If one and the same typist is available to type the indexes of several books, the typing can be done directly from the slips without the need for preparing a manuscript original.

833:3 CONSULTING THE AUTHOR (3)

After the final draft of the presscopy is made, consult the author for final touch up and refer any doubtful cases to the author and incorporate his suggestion.

833:4 VERIFYING THE DRAFT OF THE PRESSCOPY

After consulting the author, the Indexer and the Typist should verify the index number of the index term and cross references with the slips.

833:5 FINAL PRESSCOPY

After verifying the draft presscopy, the final presscopy is typed.

833:6 VERIFICATION OF THE FINAL PRESSCOPY

Verify the Final Presscopy of the index with its draft. To ensure cent per cent accuracy, it is necessary that the index number for each index heading is checked directly with the text at this stage. Even though it may take sometime and may be apparently repetitive, this step is found very necessary as it saves time at the printing stage.

84 ELIMINATION OF WASTE

The quick pace at which the indexing should go and the profitable use of it in improving the text requires a staff of different

kinds. The indexing is best done by an indexer in close collaboration with the author and the typist.

Much of the wastage of time and energy could be avoided by a careful choice of idea and its index term. In order to avoid unwanted entries right from the beginning the indexer should be familiar with the subject.

A close touch with the author, and a thorough grasp of the ideas in the text, a clear analysis of the reader's mind will enable the indexer to make the correct choice of index entries and thereby eliminate waste. On the secretarial side, the indexer should route his entries, at a uniform speed in correct quantum. The indexer should carefully watch that unnecessary duplication of slips is not made. He should keep a diary of the quantum of work done each day.

85 DIARY FOR SLIPS

A diary showing the number of different kinds of slips should be maintained with the following headings:—

SN	Item of Work	Number
1	Primary index slips prepared	
2	Consolidated slips prepared	
3	Primary slips weeded out	
4	Cross reference index slips	
5	Total number of slips used in the preparation of the index	

86 MAN-HOURS DIARY

The time required for preparing an adequate expressive index to a book is seldom realised. For this reason, Ranganathan insists on the inclusion at the end of the index a statement of man-hours spent in the preparation of the index. To make such a statement possible the indexer should maintain diary of the time taken for each of the jobs involved in the preparation of the index.

The table in the next page gives the man-hours spent in the preparation of the index to the book *Ramanujan — the man and the mathematician*.

SN	Stage	Hours
1	Reading of the text (140 typed pages)	6
2	Choice and rendering of the Index Terms	28
3	Preparation of slips. Individual entries (819)	16
4	Verification with the text	12
5	Alphabetisation	6
6	Consolidation of entries (360)	12
7	Presscopy Work	10
	Total	90

91 ACKNOWLEDGEMENT

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