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TEACHING OF CLASSIFICATION.
(Teaching in library science. 15).

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Points out that today due to the dynamic developments in the universe of subjects, the Classifier has to play the role of a Classificationist-in-little from time to time, and that the teaching of Classification should be reoriented to give him this capability. Emphasises that the teaching of classification should be designed to blend the study of the theory and practical work. Gives the steps in preparing the student for the work of classifying and for learning the theory of classification. Suggests that the Postulational Method is helpful in learning practical classification and describes the method. Also emphasises that comparative study of two schemes of classification is helpful to the students in grasping the canons and normative principles of classification. Outlines what should preferably be done in the class and in tutorial. Gives a sample list of subjects about which the student should study, an instruction sheet on how to study, and a sample list of subjects for filiatory grouping.

1 INTRODUCTION

11 CLASSIFIER'S FUNCTION

Library Classification as a practical tool for the organisation of documents has been in use much earlier than the development of the theory of classification. Therefore, there has been a tendency to teach practical classification and the theory of classification as if they were two independent subjects. It would appear that the theory of classification has been deemed to be of more academic interest and of little value to the majority of the librarians concerned with the practical aspect of the organisation of documents in a helpful sequence—that is, classifying. Such a divided view of the discipline might not have had any serious impact on the efficiency of library service, say 50 years ago. Today, however, the dynamic development of the universe of subjects has made it necessary for the classifier to play the role of a classificationist-in-little, from time to time. Even if he does not design a new scheme for classification,

he would find it necessary to exploit the capability of the preferred scheme in constructing coextensive class numbers for many newly emerging subjects, not included in the schedule which he uses. For, no scheme can anticipate and provide numbers for all new developments in the universe of subjects. Therefore, the professional competence of a classifier is dependent on not merely his being able to use a ready-made scheme of classification but also on a knowledge of the foundations and the methodology of design and development of the schemes for classification. The recognition of this additional function of the classifier calls for a reorientation of the teaching of classification.

12 BLENDING OF THEORY AND PRACTICE

The teaching of Classification should be so designed that the learning of the theory of classification enriches the learning of practical classification and *vice-versa*. In other words, although in the syllabus, classification (Theory) and classification (Practice) may be indicated as two headings, but for the classifying having to be done by the students in the hours set apart for practical work, the teaching of the two should be so co-ordinated and properly integrated as to bring home to the student that they form two inseparable facets of one and the same personality. In fact, it is more helpful to derive the Principles for Classification through discussion on the basis of the practical work done by the students.

2 PREPARATION

In order that the learning of classification is made productive, the student should be helped to become familiar with all the Basic Subjects and the layout and design of the different schemes of classification to be used for classifying.

21 READING ABOUT SUBJECTS

Determining the subject of a book is the essence as well as a difficult step in classification. The student should be helped to acquire this ability at the early stages of the course. For this purpose, the students may each be given a list of Basic Subjects. The list should also include a number of newly emerging subjects. A specimen of such a list is given in Sec 82. The teacher can prepare similar lists of subjects for different batch of students. The subjects are arranged alphabetically by their names. Along with this, a sheet containing instructions on what to study about each subject should be given. A specimen of this is given in Sec 81.

22 FILIATORY GROUPING OF SUBJECTS

Sensing the filiatory relations among subjects and arranging them in a helpful sequence is the essence of classification. The groundwork for this work should be laid from the beginning.

220 LIST OF ASSORTED SUBJECTS

A list of about 125 assorted subjects is given to the students at the beginning of the course. A specimen of such a list is given in Sec 83. The subjects in the list are arranged alphabetically by their names.

The students are to consider at one time a set of 20 subjects in the list, starting with the first twenty items. Each one is required to

- 1 Identify the relation among the subjects;
- 2 Group them according to the degree of relation recognised; and
- 3 Arrange the subjects in each group according to some principle, which each student considers suitable for the purpose.

221 DEMONSTRATION BY TEACHER

To begin with, in the class, as a demonstration and guidance the teacher helps the students to do each of the items of work mentioned in the successive steps in the preceding section.

222 KINDS OF RELATION AMONG SUBJECTS

Classes are devoted to a discussion of the results of the work done on each set of 20 examples. The kinds of relation recognised among the subjects by each of the students and the basis for the differences in their findings, if any, is elucidated.

223 ARRANGING IN A HELPFUL SEQUENCE

The need for arranging the subjects in a helpful sequence and the possibility of different helpful sequences in different contexts come up in the discussion. Analogies from common experiences help to impress the point clearly in the minds of the students. The students are also made to realise the need for some principles for the arrangement of subjects suitable for different purposes. The existenc of principles for arrangement in a helpful sequence is brought to their notice and reference is made to the relevant sections in the text-books and supplementary reading materials, including periodicals.

224 USE OF CHARACTERISTIC

The different characteristics unconsciously used by the students for the grouping of the subject are brought out during

the discussion on the successive sets of subjects. The method of choice of characteristics is generalised and the help or otherwise of different characteristics in the context of different subjects is elucidated. The principles relating to the choice of characteristics is brought to the notice of the students. They are also made to look up the concerned canons of classification in the books on the theory of classification.

23 LAYOUT OF SCHEMES OF CLASSIFICATION

To familiarise each student with the layout of the schemes of classification to be used in the study, they may be required to prepare Conversion Tables as indicated in the specimens given below. The schemes of classification considered here for this purpose are the Dewey Decimal Classification (= DC) and the Colon Classification (= CC).

24 CONVERSION TABLE

24C CC SEQUENCE

DC		CC		CC		DC	
N	Term	N	Term	N	Term	N	Term
z	Generalia	0	Generalities	4	Journalism	07	Newspaper, Journalism
1	Universe of Knowledge: Struc and development	..		A	Natural sciences	5/6	..
2	Library science	02	Libraries, Librarianship	.		.	
3	Book science	..		Z	Law	34	Jurisprudence Law, Legislation

24D DC SEQUENCE

DC		CC		DC		CC	
N	Term	N	Term	N	Term	N	Term

0 Generalities z Generalia

DC		CC		DC		CC	
N	Term	N	Term	N	Term	N	Term
00	Prolegomena. Fundamentals of knowledge and culture			04	Essays. Pamphlets. Offprints. Vouchers and the like		
01	Bibliography. Catalogues	a	Bibliography				
02	Libraries. Librarianship	2	Library science				
03	Encyclopaedias. Dictionaries. Reference books.	k	Cyclopaedia	990	History of Oceania, Australia and Polar Region		

25 CLASS DISCUSSION

Differences in naming the Basic Subjects, in the sequence of their arrangement and the extension and intention of each of them in each scheme of classification studied, are discussed and the possible reasons for the differences elucidated. Determination of the extension and intention of a term in a schedule by the application of relevant canons — that is, the Canon of Context and the Canon of Enumeration — is demonstrated. The relevant sections in the text-book are referred to.

The teaching of the details of the schemes for classification is conveniently done at a later stage in the course by the Comparative Method applying the relevant postulates and principles. The Conversion Table work is a first step in the Comparative Method.

3 CLASSIFYING

31 LOCATING THE NUMBER USING THE INDEX

Most of the schemes for classification prescribe that in classifying a book one should not pick up the class number of a subject from the alphabetical index. This is a hit or miss affair. It will be particularly unhelpful if the title of the document is not expressive — that is, does not indicate its subject. The schemes also prescribe that the classifier should acquaint himself with the layout, the design of the schedules and rules for building

up Class Numbers. And yet this definite instruction is ignored by many schools while teaching the subject.

32 ANALYSIS

A correct and trustworthy method of classifying includes the analysis of the subject of the document into its facets, determining the kind and the extent of the relation among them, arranging the facets in a helpful sequence, and constructing the Class Number according to the rules of the scheme for classification.

33 TRANSLATION INTO CLASSIFICATORY LANGUAGE

To illustrate how classifying is equivalent to translating the name of a subject from a natural language into a classificatory language — that is, a language of ordinal numbers — it is best to begin with Basic Subjects themselves. A fairly expressive title of the document will indicate its subject. The student is to locate the subject in the schedule of Basic Classes. After doing a few examples of this kind, tell-tale titles in which an additional facet occurs, may be given. These exercises will give the student a fuller acquaintance with the layout of the schemes for classification used and the rules thereof for constructing Class Number. In every case, the student should work with the schedules and not from the index.

4 POSTULATIONAL METHOD

In the next stage, subjects with three or more facets may be taken. At this stage the teaching should enable the student to systematise his steps in the work of classifying. For this purpose, it is necessary.

- 1 To demonstrate the sequence of steps involved in classifying in the idea plane, in the verbal plane, and in the notational plane;

- 2 For the student to practise the steps to the point when they would become reflex action; and in this process

- 3 Help the student to use the principles and postulates of classification and cite them in each case.

It is convenient to carry out the translation of the subject from a natural language into a classificatory language in eight graded steps and to verify the result in the final ninth step by reverse translation. This is called the Postulational Method.

In the class, each and every step to be followed in the Postulational Method is demonstrated by the teacher taking a few tell-tale titles. The steps in the Method are enumerated and discussed in Chap N of Ranganathan's *Elements of library*

classification, Ed 3, 1962.

41 METHOD OF RESIDUE

In order to acquaint the student with the several postulates and principles and their use in classifying in a conveniently short period of time, it is helpful to adopt the Method of Residue. In brief, the method consists of enumerating — say in an Instruction Sheet — each and every step in the Postulational Method indicating the directions, definitions, postulates and principles involved in each step. The student is

- 1 To take one step at a time in the sequence given;
- 2 Apply the directions, definitions, postulates and principles relevant to the step to the example on hand for classifying; and
- 3 State whether it is applicable or not.

If applicable, the

- 1 Implication;
- 2 Work to be done; and
- 3 Findings,

are to be written down.

After completion of one or two exercises in the class, it should be followed by a similar demonstration of the Postulational Method by the students themselves in the class, under the guidance of the teacher. Each student may work out one step and the rest of the class will discuss his work. At the beginning, this should be done slowly; not more than two titles may be completely classified in a class of two hours' duration. Concurrently, an assignment is given to the students to classify a new title comparable in complexity with that demonstrated. The students are asked to write down each and every step with all the pros and cons and the citation of the principles and postulates.

42 TUTORIAL

In the tutorial, the work of each trainee is carefully examined and discussed with him. It is necessary to examine whether each step in the successive stages — the application, the implication, the work to be done, and the findings — in the thinking process are recorded, and the relevant Postulates and Principles are quoted correctly at the appropriate points citing the authority.

5 GRADING OF EXERCISES

It has been found from experience that it is helpful if the grading of exercises includes the following in succession:

- 1 Basic facet alone;

- 2 Basic, Space, and Time facets;
- 3 Basic, Matter (Property) facets;
- 4 Basic, Matter (Property), Space, and Time facets;
- 5 Basic, Matter (Property), and Energy facets;
- 6 Basic, Personality, and Matter (Property) facets;
- 7 Basic, Matter (Property), Energy, Space, and Time facets;
- 8 Subjects with more than one Level in Personality, Space, and Time facets (Simple cases);
- 9 Subjects with two Rounds (Simple cases);
- 10 Subjects with three Rounds (Simple cases);
- 11 Subjects with Anteriorising Common Isolates; and
- 12 Subjects with two Phases.

The titles chosen will naturally have ellipses and derived composite terms.

6 CLASSIFICATION OF ACTUAL BOOKS

In about three-fourths of the course, the students would have acquired the ability to classify with the help of titles only, books with nearly expressive titles. After this ability is well fixed, the students must be given training in classifying actual books given to them whether the title is expressive or not. The books should preferably be currently published ones. The purpose is to accustom the student to the determination of the specific subject of the book by reading the contents page, introduction, parts of the text etc. The experience gained in the translation of expressive titles into corresponding class numbers will be of help to the student in picking out the Basic Facet and all the isolate ideas covered by the book with some ease and flair. It is for this reason that actual books are given for practical classification at a later stage only.

7 METHOD OF BLENDING THEORY AND PRACTICE

71 BASIC SUBJECT, ITS SCOPE AND THE SCHEDULES GOING WITH IT

Side by side with the demonstration and exercises, the student should be helped to understand the highways and byways of Compound Subjects going with each Basic Subject, and the schedules given for them in the scheme for classification. Sound teaching technique requires that this kind of study and practical classification done in a week should centre round one and the same Basic Subject or sets of Basic Subjects. It has been found that on an average a main subject needs at least three days to cover its scope and the schedules going with it.

72 SOURCE MATERIALS FOR THE STUDY OF SCOPE

For each of the sets of exercises, the student should read about the subject concerned and its subdivisions. The kinds of source books useful for the purpose are given in Sec 81 Category 2.

73 COMPARATIVE STUDY OF TWO SCHEMES

To grasp the importance of the Canons and Normative Principles for the guidance of classification and to develop sensitiveness to the usefulness of a scheme, a comparative study of two schemes is essential. Comparison of DC and CC has been found rewarding in this respect. The Conversion Table method given in Sec 23 would have introduced the student to the two schemes in a general way.

731 STEPS IN PRACTICAL CLASSIFICATION

In teaching classifying by the Postulational Method it should be brought home to the students that in Steps 0 to 4 inclusive, that is the work involved in the idea plane for the analysis of the subject embodied in the books, is the same irrespective of the scheme for classification that may be used for constructing the class number. This would help the student to recognise the essential differentia between schemes for classification.

732 CANONS AND PRINCIPLES OF CLASSIFICATION

Throughout the work in practical classification and in the study of the scope of the Basic Subject and the schedules going with it, the relevant canons and principles should be brought to the notice of the students whenever warranted. They should read about them in the books on the theory of classification. For example, the students should be helped to make a comparative study of the Canons of Classification formulated by E C Richardson, W C B Sayers, H E Bliss, and S R Ranganathan. The major part of the teaching should be done by discussion of the use and helpfulness of the canons and principles. In this way, the different canons and principles would gradually become part of the apperception of the students. This is a necessary preparation for the formal study of the theory of classification.

74 NEGLECT OF COMPARATIVE STUDY

In some library schools the above-mentioned essential educational purpose of prescribing the comparative study of two schemes of classification appears to be lost sight of. With the result, different persons are asked to teach the different schemes.

This merely adds to the curricular load. This should not happen.

75 FORMAL THEORY OF CLASSIFICATION

A formal theory of classification is best taken up towards the end of the B Lib Sc course. At that stage the student's experience in classifying would have become ripe. He would have also seen that schedules of classification for the subjects going with a Basic Subject conform to the result of blending the *a priori* analysis on the one side and the pragmatic approach from the documents on the other. A formal systematic development of the theory of classification — General Normative Principles, Laws of Library Science, Canons of Classification, Principles for Sequence of Isolates in Array, Principles for the Sequence of Facets, Book Number and Collection Number — would then be meaningful to the students. The subject can also be developed rapidly. This will enable them to see the whole corpus of the theory in a short mental sweep and to tie-up together the various canons and principles they had learnt pragmatically during the year. They will then see the coherence and the unity of the theory of classification.

8 APPENDIX

81 READING OF MAJOR SUBJECT FIELDS (See Sec 21 and 72)

1 Documents on each of the subjects mentioned in the attached list may be prescribed to be read.

2 The following kinds of documents may be prescribed to be looked up or studied:

- 1 Standard dictionaries;
- 2 Articles in encyclopaedias;
- 3 Orientation books;
- 4 Books on the history of the subject;
- 5 Treatises; and
- 6 Good review articles and trend reports.

3 The objective of the reading is to sense the landmarks in the evolution of each subject, its scope and divisions, and its umbral and penumbral areas.

4 Proforma for the students to record information while reading the books.

- 1 Meaning of the term
 - 11
 - 12
 - 13
- 2 Terminology (with remarks, if any)
- 3 Scope (General)

- 4 Main divisions and subdivisions with their meaning and scope
- 5 Special classification, if any
- 6 Penumbral areas
- 7 Applications
- 8 Remarks: Special points
- 91 Important reference works
- 92 Bibliography of documents from which the information was collected with indication of location (library etc) against each document.
- 5 The record of work is to be submitted once a week, for the perusal of a number of the teaching staff.

82 LIST OF SUBJECTS TO BE COVERED (See SEC 21):

SN	Term	SN	Term
1	Adult education	27	Biology
2	Aerobiology	28	Bionomics
3	Aeronautical engineering	29	Biophysics
4	Aesthetics	30	Biosciences
5	Agricultural chemistry	31	Book science
6	Agriculture	32	Botany
7	Air-conditioning	33	Chemical engineering
8	Algebra	34	Chemistry
9	Analysis (in Mathematics)	35	Civil engineering
10	Anatomy	36	Commerce
11	Animal husbandry	37	Communicable disease
12	Anthropology	38	Communication engineering
13	Anthropometry	39	Communication theory
14	Archaeology	40	Control engineering
15	Architecture	41	Co-operative economics
16	Arithmetic	42	Criminal law
17	Astronautics	43	Crystallography
18	Astronomy	44	Cybernetics
19	Automation	45	Cytology
20	Automobile	46	Demography
21	Aviation	47	Documentation
22	Ayurveda	48	Dynamic geology
23	Banking	49	Earth sciences
24	Biochemistry	50	Ecology
25	Bioenergetics	51	Econometrics
26	Bioengineering	52	Economic geology

SN	Term	SN	Term
53	Economics	93	Light
54	Education	94	Linguistics
55	Educational psychology	95	Logic
56	Electrical engineering	96	Logistics
57	Electricity	97	Machine tool production
58	Electromagnetic theory	98	Macromolecular chemistry
59	Electronic engineering	99	Magnetism
60	Engineering	100	Magnetohydrodynamics
61	Entomology	101	Management science
62	Epidemiology	102	Marine biology
63	Epistemology	103	Materials science
64	Ergonomics	104	Mathematics
65	Ethics	105	Mechanical engineering
66	Experimental psychology	106	Mechanics
67	Folklore	107	Medicine
68	Forestry	108	Metabolism
69	Fuel technology	109	Metallurgy
70	General semantics	110	Meteorology
71	Genetics	111	Microbiology
72	Geography	112	Military sciences
73	Geology	113	Mineralogy
74	Geometry	114	Molecular biology
75	Geopolitics	115	Montessori school
76	Geosciences	116	Museology
77	Glass and Ceramics technology	117	Mysticism
78	Gnotobiotics	118	Nuclear engineering
79	Heat	119	Nuclear medicine
80	Heredity	120	Nuclear physics
81	Highway engineering	121	Nutrition
82	Historiography	122	Oceanography
83	History	123	Operations research
84	Hydraulic engineering	124	Paediatrics
85	Industrial economics	125	Palaeomicrobiology
86	Instrumentation	126	Palaeontology
87	International law	127	Personnel management
88	International relation	128	Petrology
89	Irrigation engineering	129	Pets
90	Journalism	130	Pharmacognosy
91	Law	131	Philosophy
92	Library science	132	Physics
		133	Physiology

SN	Term	SN	Term
134	Political science	154	Sericulture
135	Power engineering	155	Ship building
136	Psychoanalysis	156	Shorthand
137	Psychology	157	Social sciences
138	Psychometry	158	Space sciences
139	Public administration	159	Standardisation
140	Public finance	160	Statistics
141	Public health	161	Stratigraphy
142	Quantum mechanics	162	Structural engineering
143	Radar	163	Surface science
144	Radiation	164	Surgery
145	Radioactivity	165	Textile
146	Rayon manufacture	166	Thermodynamics
147	Relativity theory	167	Transistor
148	Religion	168	Transport
149	Renaissance	169	Trigonometry
150	Rocket engine	170	Veterinary science
151	Sanitary engineering	171	Vital statistics
152	Semantics	172	Zoology
153	Semiconductor technology		

83 LIST OF SUBJECTS FOR FILIATORY GROUPING (See Sec 220)

1	Adult education in India in 1964	16	British law for drunkards
2	Agricultural economics	17	British law of contracts
3	Agriculture	18	Cartography
4	Algae	19	Ceramics technology
5	American criminal law	20	Chemical technology
6	Anatomy of horse	21	Child psychology
7	Anger of children	22	Christian law
8	Animal husbandry	23	Comet
9	Astronomy	24	Commerce
10	Audio-visual method of teaching	25	Concept of number
11	Banking	26	Constitutional theory
12	Basic education	27	Continued function
13	Bengali literature	28	Co-operative economics
14	Bengali poetry	29	Criticism of Macbeth
15	Botany	30	Cultivation of cinchona
		31	Dairying
		32	Democracy

33	Dentistry	71	Land-lord and tenant law of India
34	Dermatology		
35	Design of experiment	72	Law
36	Determinant	73	Life insurance
37	Discussion method of teaching	74	Life of Kalidasa
		75	Life of Tulasidas
38	Diseases of cow	76	Literature
39	Diseases of wheat	77	Macbeth
40	Economics	78	Management of life insurance
41	Education		
42	Elementary arithmetical method	79	Manufacture of cosmetics
		80	Mathematics
43	English drama	81	Medicine
44	Examination	82	Metallurgy
45	Fungi	83	Morphology of flowering plants
46	Fungus diseases of tobacco		
47	Geodetic astronomy	84	Movement of the sun
48	Geography	85	National geographic (periodical)
49	Geography of India		
50	Geopolitics	86	Obstetrics
51	Gitanjali	87	Old age habit
52	Green manuring for cabbage	88	Permutation and combination
		89	Philosophy
53	Heat		
54	Hilbert space	90	Physiology of heart
55	Hindu law	91	Physics
56	Hindu philosophy	92	Plant physiology
57	Homeopathy	93	Poetic criticism
58	Human body	94	Political science
59	Indian divorce law	95	Private international law of Great Britain
60	Indian law		
61	Indian philosophy	96	Psychoanalysis
62	Indian weather	97	Psychoanalysis of emotion of woman
63	Industrial economics		
64	Insurance	98	Psychoanalysis of woman
65	Intelligence of Americans	99	Psychology
66	Intelligence test	100	Public enterprise
67	Jute ecology	101	Public finance
68	Labour problems in agricultural industries	102-103	Radiation of heat Radiotherapy in lung disease
69	Labour problems in agricultural industries in India	104	Rice yield
70	Labour problems in agricultural industries in India	105	Rice yield in India
		106	Rice yield in India in 1960's
		107	Rousseau's school

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| 108 | Rubber plantation | 116 | Temperament of man |
| 109 | Science abstracts,
A: Physics | 117 | Theory of communism |
| 110 | Secondary education in
India | 118 | Theory of probability |
| 111 | Soap manufacture | 119 | Thermodynamics |
| 112 | Socialism system of
economics | 120 | Thermometry |
| 113 | Storage of milk | 121 | Typhoid |
| 114 | Study of eclipse | 122 | University education |
| 115 | Systems of geometry | 123 | Vedanta |
| | | 124 | Vedanta in Bhagavad Gita |
| | | 125 | X-ray therapy |