

# **A Framework for Developing Depth Classification Schedule**

**Based on Analytico-Synthetic Model**

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# What is a Depth Classification ?

- ‘Depth’ relates to intension of the subject content of a document.
- Micro subjects have greater intension than that of macro subjects.
- In the context of classification ‘depth’ refers to intension of greater degree.
- ‘Depth classification’ means classification of micro documents i.e. micro-subjects.
- A schedule for such classification is known as the ‘Depth Classification Schedule’.

## Depth Classification : Why?

- Depth Classification of a micro-document helps in representing the thought-contents extensively which is not possible in General Classification Schemes.
- As the depth classification allows to accommodate maximum number of isolates associated with a micro-document, searching and locating that particular document becomes easier than ever.
- It is expected that depth classification would be much useful in scientific research institutes as the researchers are mostly in need/search of micro-documents of their interests.
- Construction of a Depth Classification Schedule helps too in revision of existing schedules in a regular interval as per their policy.

# Depth Classification : How ?

- We know, the thought-contents of micro-documents are of greater intension and do not conform to traditional subjects.
- A micro-document may deal with inter-disciplinary studies or a minute part of a traditional subject and thus, often the contents are multi-faceted.
- Designing of depth classification schedule, therefore, becomes inevitable that requires a lot of seriousness and skills.
- Ranganathan with his associates in DRTC have developed and implemented an efficient depth schedule designing methodology based on general theory of classification and guidelines in the form of postulates, canons and principles.
- Design of Depth Classification involves different stages of work as per the methodology evolved for it.

*Ref: RANGANATHAN (S R). Design of depth classification : Methodology. Library Science with a slant to Documentation. 1,1;1964. Paper A.*

# Methodology : Stages of Work

- Stage of Preparatory Works
- Stage of Works in Idea Plane
- Stage of Works in Verbal Plane
- Stage of Works in Notational Plane
- Stage of Final Compilation of the Report

# Stage of Preparatory Works

Delineating the actual development work the performing some preliminary functions as listed below:

- Selection of Subject i.e. Micro-subject
- Study of Subject
- Assessment of users' needs
- Determining the scope
- Choice of Model
- Identifying the Basic Subject

# Selection of the Micro-Subject

- The first stage is the selection of the subject.
- It should be a micro-subject with greater intension and may be an emerging area any field of study.
- A micro-subject which is in need of detail classification but fails to find its place in existing General Classification Schemes.
- Scientific/Research institutes are dealing with specialised subjects but facing trouble in information organisation and dissemination due to non-supportive classification schemes. Thus such micro-subjects need to have special classification schemes of their own.
- It is necessary at this stage to identify the micro-subject to step into the next stage.

# Study of Subject

- We should have sufficient knowledge of the subject on which we are going to develop the classification scheme.
- This is to know the highways and bye-ways of the subject which would help us to select isolate terms and to determine relationships existing between them.
- We study the subject primarily to know its divisions and subdivisions.
- The aim of such study should be acquiring the ability to do the above work efficiently and not to become a subject expert.

## Study of Subject (Contd.)

G Bhattacharyya had developed a methodology in DRTC which involves collection of following information to gather knowledge about the subject under study :

- 1 Definition of the subject (at least three)
- 2 Terminological Development of the subject
- 3 Scope of the subject as recognized by different authorities
- 4 Divisions and subdivisions of the subject with meanings and scope of the terms representing them
- 5 APUPA and Penumbral subjects
- 6 Treatment of the subject in special classification schemes/ thesauri in the related areas
- 7 Landmarks and trends in education & research
- 8 Sources of Information (Important documentary, institutional and personal information sources)
- 9 Information Transfer Process
- 10 Any specialities or peculiarities

# Study of Subject (Contd.)

The various sources that may be consulted for study of the subject are :

- 1 Dictionaries, Encyclopaedias, technical glossaries
- 2 Books on history, scope and development of the subject
- 3 Textbooks/ monographs/ treatises
- 4 Periodicals on subject/ abstracting periodicals
- 5 Review articles/ review periodicals
- 6 Trend reports/ state-of-the-art reports
- 7 Conference proceedings
- 8 Existing classification schemes/ thesauri
- 9 Subject specialists

# Assessment of Users' Needs

- Need varies from user to user, no scheme can be completely tailor-made to the needs of each user, but it should be able to cater to a spectrum of users' interest.
- An idea of the needs of various types of users intended to be served with the help of the scheme thus may be helpful for the classificationist to make his tool more efficient.

# Determining the Scope

- The subject chosen for designing a schedule may have different aspects or facets, but it may not be necessary to cover all the aspects.
- The scope may be determined on the basis of users' needs and the composition of the collection to be classified.

# Choice of Model

- Designing of a scheme becomes systematic if a particular model is kept in view Selection of model should be based on :
  - ✓ Soundness of theory on which the model scheme is based
  - ✓ Degree of hospitality to change and new development
  - ✓ Capability of producing co-extensive class numbers

## Choice of Model (Contd.)

- For classifying micro-documents, an analytico-synthetic model is more suitable.
- Colon Classification, which is based on postulates, canons and principles, is the best example of analytico-synthetic classification.
- We select this analytico-synthetic model for designing the classification scheme.

## Choice of Sub-model

- A large number of depth classification schedules based on CC have been designed by DRTC and in other institutes/universities.
- They are grouped into different categories on the basis of the pattern of occurrence and arrangement of quasi-isolates under different facets :
  - ❖ Commodity Production Engineering (e.g. Motor Vehicle Production Engineering)
  - ❖ Commodity Production Technology (e.g. Glass Production Technology)
  - ❖ Medicine (e.g. Disease in Medicine)
  - ❖ Combination of (2) and (3) (e.g. Water Pollution)
  - ❖ Generalia Bibliography
- Any of these schemes may be chosen as sub-model on the basis of subject affinity and the nature of quasi-isolates.

# Identifying Basic Subject

- After selection of the Micro-subject, it is necessary to specify the basic subject with which the subject of the new scheme is deemed to go.
- The study of subject made earlier and the Postulate of Basic Facet can help in this work.
- If the basic subject is not enumerated in the model scheme, the basic subject may be derived using guiding principles.
- It is also necessary at this stage to identify the related areas of the subject in question.

# Stage of Works in Idea Plane and Verbal Plane

- The work in the idea plane and that in the verbal plane are different but often go on simultaneously.
- It includes the following :
  - Collection of terms
  - Sorting of isolates
  - Arrangement of facets, quasi isolates, isolates and speciators
  - Preparation of draft

# Collection of Candidate Terms

- The terms representing basic concepts or isolates of the micro-subject concerned should be collected with meticulous care.
- It has to be ensured that no area of the subject goes unrepresented.
- The terms collected should be exhaustive as far as possible.
- One should stop only when all the possible sources are thoroughly examined and no new terms are found.
- A discussion with the subject specialist may be helpful in arriving at the decision to stop.

## Collection of Candidate Terms (Contd.)

- Any type of documentary, institutional and/or personal source, which is relevant for the subject concerned may be consulted for collection of terms.
- Since the terms are collected from various sources, there is a possibility of collecting synonyms, but only one term should be selected for inclusion in the schedule and others may be used for cross reference in index.

## Collection of Candidate Terms (Contd.)

Preferred documentary sources that will help in collecting candidate terms related to the micro subject are :

- 1 Periodical publications – primary, secondary, tertiary
- 2 Conference papers/proceedings
- 3 Textbooks/ monographs and their indexes
- 4 Subject Dictionaries
- 5 Technical glossaries
- 6 Encyclopaedias,
- 7 Handbooks
- 8 Thesauri

# Criteria for Selecting Terms

- Terms representing the concepts of Space ( S) and Time (T) need not to be recorded as these are available in CC7.
- Similarly, terms pertaining to common isolates like ACI need not to be recorded.
- The criteria for selection of the terms may be :
  - Relevancy of the term in the context of the subject of the scheme
  - Acceptability of the term for usage
  - Currency of the term for usage
  - Frequency of the use of the term
  - Anticipatable Usability in retrieval queries
  - Terms just emerging in the literature
  - The selected terms should be in a standard form

## Standardisation of Terms

- For this purpose any existing manual may be followed, or the method followed in the analytico-synthetic model may be adopted or new rules may be framed, if necessary.
- Some guidelines must be framed on the basis of the following issues to standardise the candidate terms.
  - Whether the term should be in noun form, adjectival form, adverbial form or verb form?
  - Whether the term should be in singular form or plural form?
  - What should be the spelling of the term if it can be spelt in different ways?
  - What should be the order of components of multi-worded terms?

# Recording of Terms

- Two types of records are needed to be prepared while collecting the terms
  - Master Reference Entry
  - Individual Term profile
- The master reference entry of each source, from which terms are collected, should be made following some standard practice or code. The entry should include :
  - Serial Reference No.
  - Author and Title
  - Locus of the Article
  - Abstract
  - Sources of abstract
  - Facet Analysis (kernel terms with FC )

# Master Reference Entry

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BHATTACHARYYA (G). Role of Classification and indexing. DRTC Annual Seminar, 20<sup>th</sup>, DRTC,ISI, Bangalore. Feb 21-25, 1983; Bangalore. 1983. Paper AA

Delineates the scope of 'Information Retrieval' and demonstrates the logic which equates 'Classification' and 'Indexing' specially in the context of information retrieval. .... Explains the deep structure of subject indexing language (SIL) emphasizing the development of different systems for subject indexing system....Concludes by drawing attention to the new mode of thinking about classification and indexing meant to meet the requirement of depth indexing of micro subjects for need based information service at the local level.

( *Source* : Original document)

Information Retrieval(MP), Classification(MP), Indexing(MP),  
Pre coordinate indexing (MP), POPSI(MP)

# Individual Term Profile

The following term profile format may be used for all candidate terms obtained from the different sources as recorded in the Main Reference Entry

- |          |                              |           |                                  |
|----------|------------------------------|-----------|----------------------------------|
| <b>1</b> | <b>Serial Number</b>         | <b>8</b>  | <b>Quasi isolate</b>             |
| <b>2</b> | <b>Reference Number</b>      | <b>9</b>  | <b>Boarder Term</b>              |
| <b>3</b> | <b>Term</b>                  | <b>10</b> | <b>Narrower Terms</b>            |
| <b>4</b> | <b>Definition</b>            | <b>11</b> | <b>Related Terms</b>             |
| <b>5</b> | <b>Sources of Definition</b> | <b>12</b> | <b>Synonyms</b>                  |
| <b>6</b> | <b>Context</b>               | <b>13</b> | <b>Standard / Preferred Term</b> |
| <b>7</b> | <b>Role i.e. FC</b>          | <b>14</b> | <b>Recorded by</b>               |
|          |                              | <b>15</b> | <b>Checked by</b>                |

## Individual Term Profile

- 1 *Serial Number* : 25
- 2 *Reference Number* : 11
- 3 *Term* : Pre-coordinate Indexing
- 4 *Definition* : The indexing system in which coordination of terms representing the subject is done at the indexing stage
- 5 *Sources of Definition* : Chatterjee (A). Elements of information organisation and dissemination. 2017.Elsevier; Amsterdam.p173
- 7 *Context* : Information Storage and Retrieval
- 8 *Role i.e. FC* : Matter Property
- 9 *Quasi isolate* : By stage of co-ordination of terms
- 10 *Boarder Term* : Assigned Indexing
- 11 *Narrower Terms* : Chain indexing, POPSI, PRECIS
- 12 *Related Terms* : Uniterm, Edge-notched card
- 13 *Synonyms* :
- 14 *Standard / Preferred Term* : Pre-coordinate Indexing
- 15 *Recorded by* : Y
- 16 *Checked by* : Z

# Sorting of Isolates

- The terms/isolates may now be sorted out on the basis of role / FCs: Personality, Matter-Property, Matter-Material , Matter Method and Energy.
- Of these FCs, if common isolates are identified, they need to be added to update the existing lists of common isolates.
- Careful examination of terms may result in identifying some speciators too.
- If the roles/FCs of some terms could not be identified initially, role of such terms may be determined by comparing them with the groups of isolates while sorting.

# Arrangement

- The question of arranging facets, or the groups of isolates does not arise if CC model is followed, as there is already an existing order of facets in CC7.
- In case of many rounds and levels of facets, their sequence may be determined on the basis of Principles for Dependency Sequence.
- The term records belonging to each facet may be carefully scrutinized and the terms compared for their likeness and unlikeness, as this helps in determining the characteristics or quasi isolates by which they can be grouped.

## Arrangement (Contd.)

- The sequence of quasi-isolates may be determined by Wall-Picture Principle and its corrolaries.
- The isolates belonging to each group may be arranged following any suitable principle of helpful sequence.
- The speciators of each facet may be arranged in similar manner.

# Preparation of Draft

- A draft of the schedule can now be prepared which will clearly show all the arrays and chains under each facet.
- In cases where some speciators go with only some particular isolates, they may be enumerated along with the isolates concerned.
- The draft so prepared should be subjected to critical review.
- Any error or defect noticed should be rectified.

## Work In Notational Plane

- The work in the notational plane will involve selection, planning and fitting of notation.
- The work should be guided by the Canons of Notational Plane enunciated by Ranganathan.
- The notational system selected for the scheme should:
  - Be able to implement the decisions of the idea plane,
  - Be capable providing unique class number,
  - Be capable of coextensively represent each and every component idea of subject content of every document and the exact kind of interrelationships among the components of a subject,

## Notational Plane (Contd..)

- Have a base with universally familiar digits,
- Have a faceted structure and different indicator digits to indicate various types of relationships,
- Have digits with explicitly defined ordinal value,
- Have devices to provide autonomy to the classifier in constructing class numbers, and
- Have an optimum combination of brevity, simplicity and hospitality.

# Final Compilation of the Report

- The work at this stage involves:
  - Drafting of rules
  - Preparation of index
  - Final testing
  - Finalization of the scheme

# Conclusion

- Hands on practice on developing a depth classification helps library professionals in understanding a subject for performing secondary information activities for rendering secondary information services effectively and efficiently.
- It is necessary to revise a classification scheme so constructed at regular intervals, as no subject field is static and no classification scheme can be a static document. Depth classification plays a vital role in bringing the new edition of any scheme.

## *For Further Readings*

- 1 BHATTACHARYYA(G). Project on study of subject. *Library Science with a slant to Documentation*. 12,1; 175. Paper G
- 2 CHATTERJEE (A). Elements of information organisation and dissemination. 2017. Elsevier; Amsterdam. 592P
- 3 GOPINATH(MA). Construction of depth version of colon classification : a manual. 1986. Wiley Eastern; New Delhi. 162P
- 4 RANGANATHAN (S R). Design of depth classification : Methodology. *Library Science with a slant to Documentation*. 1,1;1964.Paper A