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1. Classification and Purpose of Libraries

Libraries are established to acquire, house, preserve and make available to users books and other documentary heritage of mankind. After selective acquisition the documents have to be organized for retrieval whenever required. Classification is a tool of organization. Books and other information sources are knowledge objects which can be classified and arranged like other physical objects. Since antiquity librarians have 'classified' books to form convenient groupings, and to facilitate their location at the time of need. An unarranged collection is a heap of books, not a library by definition. To find a book from such a library will be like locating a needle from a huge heap of hay. Hence a library is always organized. In earlier times books were grouped and arranged on the basis of their language, size, colour of binding, authorship or broad subject categories. Those methods were perfectly useful in those times as the main aim of libraries was to store and preserve documents rather than to serve them to the scholars. Access to knowledge was the preserve of the privileged few.

Classification of the documents in the library:

As said earlier, classification of documents and other reading materials is indispensable for any library. Various standard and local methods for arranging library materials, ranging from clay tablets, papyrus rolls, monographs and other print documents, AVs, CDs, Multimedia and now Web sources, have been employed from time to time by librarians to organize their collections. Their classification has varied from home-made or *ad hoc* systems to somewhat adapted from some universal knowledge classification systems. Since the late nineteenth century librarians have developed many standard classification systems pioneered by the Dewey Decimal Classification in 1876.

Fixed and relative location systems

Library classification systems of the pre-Dewey era assigned a fixed place to a book on the shelves. The "call number" indicated the shelf ground on which the book was stacked. For example, a call number, say, 2.4.6.25 meant that it was the 25th book on the 6th shelf of 4th Almirah in the 2nd room of the library. Thus a book could be located even by a blind person. Its another advantage was saving of shelf space, as such systems require vacant place only at the end of the shelf or almirah. (Present day systems called Relative Location systems require space for intercalation of new books at every point on the shelves.) In fixed location maintenance of subject grouping was

difficult. New books could be accommodated at the end of the shelf. Whenever the books had to be shifted to another place to make room for the new books, their call number had also to be changed. That involved lot of labour and wastage of time and money. Melvil Dewey (1876-1931) while working in the library of Amherst College (Massachusetts) could not tolerate this wasteful task of reclassification, too often. He invented a relative classification system to solve this problem. His question was : "How to give permanent call numbers to books in a library?"

Modern Library Classification

Dewey's invention was a social need and product of its time. In the then emerging industrial society and burgeoning democracy of the late nineteenth century there was an attitudinal shift in the values of education. Libraries were recognised as instrument of self learning, and treated as People's universities. Importance of literacy was recognized for aware and responsible citizens in a democratic society. Access to education was democratized and opened to all. "Education for all" became the objectives of the welfare state. To meet the needs of the society not only many new libraries were established by law, the doors of libraries were opened to all and sundry - scholars, students, neo-literates, poor, children, housewives, old and handicaps, ethnical minorities and other marginalized sections of the society without any discrimination. Further to maximize their use books were placed in open stacks and users were allowed open and direct access to the books. That open access policy required a novel and systematic arrangement of books for the browsers. Then Melvil Dewey (1851-1931) designed his decimal classification which divided knowledge by academic disciplines of study in higher education. He used decimal notation to denote subjects. Latter provided almost infinite capacity for expansion and easy insertion of new subjects at proper places. Since then the books are being classified predominantly on the basis of their subject content, that is knowledge divided into disciplines and subjects. Thus library classification is knowledge classification as applied in libraries. In other words library classification is applied knowledge classification.

But library classification is lot more than knowledge classification as it has also to take into account the physical aspects of the documents, the way knowledge has been formatted and presented in them, as well as the viewpoint of the author. It includes

other documentary aspects such as language, media, form, format, viewpoint and many more such inherent features of books and other reading material.

2. Definition:

Formally and traditionally, library classification has been defined as the arrangement of books and other reading material on the shelves or entries in a classified catalogue in a way that is helpful to the majority of users. It is a “rational sequence of maximum utility” (Maltby, 1975). Today’s libraries are mostly arranged by disciplines divided into subject though different types of collections are arranged in different ways. For example, government documents, patents or standards are arranged by their own official codes. Current periodicals are arranged alphabetically by title. Maps, CDs, pamphlets, photographs indeed require different and separate arrangements. Making of library classification systems is also classification. Designer of a classification scheme is known as classificationist. Operating a classification system to assign class numbers to documents in a library is also classification ; such a person is called a classifier. Ranganathan has given five meanings of the term classification (*Prolegomena*, pp. 55-60).

2.1 Importance of library classification

Classification is vital to library services. In fact systematic classification is implied in definition of a service library. It supports all library services. Classification is to a library as skeleton is to human body on which all the body organs rest. Classification of a library collection is its content map. In a library, classification serves all the function, namely a tool of management, brings aesthetics and helps knowledge creation. It also helps in collection development. All the Five Laws of Library Science (1931, 1957) formulated by Ranganathan support library classification and have specific implications to design effective classification systems to serve the users. Without classification a library is an unorganized dump of books. Therefore, without it the full value of a library collection cannot be obtained.

3. Classification systems

Earlier classifications to be applied in libraries were home made. It is no more possible now keeping in view the complex needs of the library users and expectation from the classification systems. Moreover, making a workable classification is a daunting task both in terms of intellectual labour and skills and high financial cost. It is no more the necessity even in view of the easily availability of many standard and universal library classification systems since the publication of the DDC in 1876.

Types of Library Classification Systems

Library classification may be general, that is, covering the entire gamut of human knowledge. Such systems are suited to cater to the needs of general libraries both big and small – from national library to village library. Academic libraries also use such systems. On the other hand there are institutions which require in-depth or minute classification to organise micro literature. These are special and research libraries of institutes like the rubber research institutes or petroleum research and development centers, or say the library of a defense research center or even the library of a mathematics department.

General classifications

Since Melvil Dewey, many general classification systems have been developed either to improve upon the defects of the DDC or to provide an alternative to it. Nevertheless the DDC has proved to be the enduring mother of all modern classification systems. Some of the universally known general classification systems are:

1. Dewey Decimal Classification/ Melvil Dewey (1876) now in 23rd edition (2011)
2. Expansive Classification/ C.A. Cutter (1893)
3. Universal Decimal Classification/ FID/ UDCC (1896) now in various editions.
4. Library of Congress Classifications/ Library of Congress USA (1904+)
5. Subject Classification/ J.D. Brown (1906)
6. Colon Classification/ S.R. Ranganathan (1933) 7th edition 1987.
7. Bibliographic Classification/ H.E. Bliss (1940-1953) 2nd edition since 1970 revised J. Mills. (1918-2010)
8. Rider's International Classification/ Fremont A. Rider (1961)
9. Library Bibliographical Classification (BBK in Russian 1960-1968)/VINITI

Of these the DDC, UDC and BBK have their abridged versions to cater to small public and school libraries while LCC's outline is equally useful for this purpose. Among these DDC, UDC and LoC are considered among the big three classifications, while the EC, SC, RIC are dead classification systems. In fact, RIC never lived any life in the bibliographic world. The future of the BBK is not known after the breakup of the USSR. The BC-2 though very systematic, scientific and up-to-date classification system is not fully revised and its use in libraries is negligible. The CC of India is struggling to keep its head above waters and survives on the patriotism of the Indians for teaching it fully in Indian library schools.

Special classification systems

A classification for specific area of knowledge, for example, Economics, even Banking, Occupational safety, Diamond technology, Women studies, Indology, etc is known as a special classification. Some real examples are:

Uniclass: Unified Classification for the Construction Industry (London: RIBA, 1997)

ACM Computing Classification (1998)

London Education Classification, University of London, 1974.

London Classification of Business Studies, (LondonBusinessSchool, 2000)

Thesaurus of Psychological Index Terms (Washington: American Psychological Association)

Moys Classification and Thesaurus for Legal Material/ Elizabeth M Moys, 1968.4th ed. 2001. Munchen: Bauker- Saur

Special Classifications inevitably are depth classifications used for classifying and indexing micro literature in the form of journal articles, research reports, theses, etc. These are eminently useful for information retrieval in special libraries and information centers. Ranganathan calls them depth classifications.

Kinds of Special Systems

Special classifications usually do not exist alone. Every special library has documents on its special area and also on related subjects. Even a nuclear science library may have books on fiction, sociology, management, etc. A special classification such as classification of business studies may require another general classification for classifying documents in other areas such as political science, sociology, psychology, mathematics. For classifying in related and other areas usually a standard system is adopted. On the other hand a special classification may be a mere extension or detailing of a certain class of a general classification system. For example, in India many local made detailed extensions exist of the DDC class numbers like 954 Indian History, 294 Indic religions, 181.4 Indian philosophy to adequately classify such subjects in Indian libraries.

By Form of Literature

Apart from subject specialization special forms of documents such as, official reports, patents, standards, Maps, CDs and Videos are arranged by different methods.

Some official documents such as reports, patents and standards bear some special code number. These are arranged by that official number. Pamphlets are usually arranged by title. Popular fiction is mostly arranged alphabetically by author. There is also user oriented system termed as Reader's Interest Classification. There are local even *ad hoc* arrangements to place together all books at one place likely to be required by a single group of users. J. Mills has listed the following sections or form of documents which may require a different type of arrangement in a library:

1. Age and grade of the library user.
2. Government documents, Patents, Standards, Reports.
3. Data tables.
4. Current and reserve stock.
5. Size of documents.
6. Media of the document, i.e. Films, Cassettes, CDs , Web documents etc.
7. Fiction
8. Documents for abnormal readers, such as the visually and physically challenged
9. Value of documents, like manuscripts rare materials, special editions, etc.
10. Form of presentation, like bound periodicals etc.
11. Date of printing, incunabula

4. Uses of classification in a library:

Classification is indispensable for libraries. However, its specific uses can be broadly listed as :

- It brings together books on the same subject. Thus a patron gets all the books at one place which is much more convenient to the users.
- It facilitates the browsing function of a library. Browsing is to look at library collections without any specific purpose – a sort of window shopping. Browsing is a habit and past time with the scholars. It is only possible fruitfully in a library organized by subjects. Browsing always leads to incidental discovery of (long needed and) valuable information. This accidental discovery is known as serendipity.
- It shows hierarchical and associative relations, which are essential for retrieval of specific and related subjects available in a library.
- General to specific order of arrangement with some notational maneuvering has been turned into pedagogical order in schemes like the CC. Ranganathan calls it APUPA pattern on the shelves. It is quite helpful for the self-learners. Thus systematic arrangement of books in open access libraries is helpful in self

learning.

- It is a location tool; without classification the library catalogue will not be able to function properly. It is also used for preparing shelflists.
- It helps to replace the books at their correct places when the books are returned to the stacks after the home or inside use.
- Classification is the basis of all information retrieval systems and methods both in manual and electronic systems.
- It has been claimed that a library classification has three functions, namely, cognitive, information retrieval and shelf arrangement. Cognitive function is to represent the structure of knowledge and intra-relation of subjects. That is to draw a map of knowledge. Classification is a map of knowledge. It easily reveals inter-subject and intra-subject relations. Many library classifications, e.g., Ranganathan's CC, Bliss' BC and BSO have emphasized this function.
- Many bibliographies, catalogues etc. are systematically classified for better use. UDC was designed to arrange entries in a universal bibliography. This is bibliographic function which helps in information retrieval. This is to arrange and retrieve micro subjects and documents.
- Being cognitive map of knowledge, classification is at the root of all indexing systems such as thesauri, subject heading lists, taxonomies and anthologies. Thesauro-facet, an efficient tool in knowledge organization and retrieval is based on facet classification methods (more of it has been discussed in Module ID: LIS/KOP-C/16).
- Third of course is shelf arrangement for which schemes like the DDC were originally designed, now all the library classification perform this basic function.
- It has been found useful in reference service for facet-analysis of user's questions in reference interviews.
- It is useful for arrangement of circulation record.
- It helps in building a balanced collection of documents in a library by revealing gaps and redundancy in collection.
- It helps in editing and weeding the collection to keep it fit for service.

Uses in Electronic Environment

Traditional classifications can be easily used to arrange and retrieve records in electronic databases. Online Public Access Catalogues (OPACs) function far better when class numbers are provided as another access point. In fact, in the electronic information era it has found so many new uses that it is rightly said that we are witnessing the second golden age of classification. Conventional classification systems

such as the DDC, UDC, LCC have been used to organize and search information on the world wide web (WWW) search engines. Search engines like Yahoo, Google, AltaVista use broader classification methods for organizing their information. Eccellio(<http://science.eccellio.com>) is a search engine which uses faceted classification which returns precise information. It uses Google database but adds an extra level of classification to refine search. It is termed as Google⁺⁺. In the web environment at least seven functions of classification have been identified by Professor Lois Mai Chan. These are location, browsing, hierarchical searching, retrieval, identification, sub-grouping (partitioning) and profiling. It has aptly been called mathematics of librarianship. (More of it has been discussed in Module ID: KO:LIS/KOP-C/17).

Classification is Indispensable:

There are many day to day routine uses of classification in a library so much so that it will be impossible for a library to function properly and achieve its objectives without a sound classification. There are many opponents of classification, too, who project it as a weak and defective instrument, and a costly process in more than one ways. Alternatives they suggest are much more costlier and cumbersome. These alternative experiments prove that there is no substitute to library classification. It has aptly been said that a book is the foundation of a library but classification is foundation of librarianship. Indeed there is no escape from nor any substitute to it in libraries, or life.

5. Limitations of classification

Classification was described as mathematics of librarianship, yet like the value of π (pi) it is never exact. Classification, especially the library classification has many limitations and problems. Classifications are social, not natural. These do not satisfy the needs of *all the* library users. Only majority are served while some users with specialized needs may require different arrangement. It is a costly process and subjective, too. Despite lengthy class numbers, no classification can comprehensively represent the total subjects dealt in a book. Even a monograph may deal with more than one subject at a time. In classification only the dominant subject is represented. A textbook on algebra and geometry is either placed at algebra, or geometry, not both. Further, let us say a textbook in cataloguing may have a very valuable chapter on history of cataloguing or on the life of C A Cutter. These buried topics will not be represented by the class number, and may remain hidden from needy users. Classification by discipline also scatters subjects. For example, a books on "Family life" may be placed in different main classes such as Ethics, Sociology, Anthropology, Social Welfare, and Medicine. Hence the scattering. Systematic arrangement in itself is very

difficult to use even by the trained librarians or subject experts. Therefore a classification system invariably needs an alphabetical index to work as a key to the classified arrangement. In libraries it may be difficult to locate books without a subject catalogue. Hence a classified arrangement is not sufficient alone to serve the users. It is not incorrect to say that classification suppresses and scatters more than it reveals and collocates. Many information retrieval experiments have proved that no classification is able to retrieve more than 60% of the material available on a topic in a library. A classification may not satisfy all the users as they have individual needs. Classifications are not based on the survey of the needs of library users. An inherent defect in all library classification systems is that these are biased towards the culture and time of their origin. No classification is really universal, neutral or value free. The DDC is notorious for its WASPish bias. As a result it lacks in non-western non-American subjects. It is a known fact that the DDC has to be extended, modified and adapted in countries of Asia and Africa. Such extensions and adaptations have their own problems – their treatment may be worse than the disease. Knowledge is growing and changing its structure. Thus, classification systems have to be revised from time to time. Applying revised classification is costly and cumbersome. Librarians are always scared of reclassifying their collections. Designing a scientific and qualitative classification is one thing. Applying it correctly and as intended by the designers is another. Often the same system is applied differently by different classifiers or in different libraries. Two classifiers may genuinely differ widely on the correct classification of a given book, and both may be correct. Not only this a classifier may class a given book differently at different times. These differences may be due to different perceptions on the subject of the document or due to different interpretations of a class in the classification system. This is known as inter-indexer inconsistency. To reduce this general schemes like the DDC have issued separate policy manuals for correct interpretations of the schedules. Keeping all this in view a nineteenth century English philosopher W.S. Jevons (1835-1882) had criticized library classification as a logical absurdity. But there is no better substitute to it. We have to work with imperfect tools till we create better ones?

6. Summary

Classification can be made of all entities under the sun. Philosophers, scientists, librarians, shopkeepers, postmen, housewives all do classification for different purposes. The four broader uses of classification are organization, economy, aesthetics and productivity. Many philosophers right from Aristotle have done classification of the entire universe of knowledge. Scientists have produced taxonomies of plants, animals and chemical substances. In libraries we apply knowledge classification to organize our

books, databases and other reading material both in print and electronic form to serve our users. In fact in computerized databases and network information searches classification has found new but powerful uses. Classification is so much the basis of all library services that it has been described as foundation study of librarianship. Yet classification has its own many problems, difficulties and limitations. At best it is an imperfect tool of organization and retrieval. Using classification in libraries may be costly, but it is much less so in using unorganised libraries. "... despite the difficulties, classification is a good servant" writes Maltby (1976)

7. Glossary

Browsing: Browsing is to look at library collections without any specific purpose – a sort of window shopping. Browsing results in incidental discoveries in the library stacks.

Class: A set of entities having at least one characteristic in common; a group of like entities, or having at least one similarity in common. All the 1.2 billion Indians are a class. The only one similarity among them is "Indianness".

Classifier : A person who classifies books in a library by operating a classification system.

Classificationist:A person who designs a classification system.

Classification:It is a process of grouping entities on the basis of their likeness or some underlying relation or separating dissimilar entities from the group. Ultimately, classification is organization and co-relation. It is grouping, selecting, sorting, ordering, indexing, tabulating, ranking, co-relating, mapping, preparing classification schedules and operating classification systems.

Dichotomy: Dividing entities into two groups at every step, e.g. all the entities in the world are divided into two groups of living and non-living.

Genus and Species: Genus is any original universe to be divided into species by adding some characteristic to the genus. These are relative terms. A father is a genus for the children; when children become father/mother they will be genus for their own children. In the trio Grandfather (G)-Father(F)-Children(C) F is species for G but Genus for C.

Jevons, W.S.: W.S. Jevons (1835-1882) was a British economic thinker, philosopher and logician. In economics, he is known for his Law of Marginal Utility. He did much investigations on the "Laws of Thought". His textbooks on logic were widely used. Of

his works on logic and scientific methods, the most important is his *Principles of Science* (1874).

Knowledge Classification: The process of outlining, structuring and mapping the entire knowledge in abstract or some part of it. It helps to study the nature and growth of knowledge. It is also the basis of modern library classification.

Library Classification : Systematic arrangement of books and other reading material of a library or entries in a catalogue in a way useful to the users. Modern library classification is knowledge classification as applied to books and other packages of information.

Micro documents: Compared to macro documents such as books, monographs, micro documents are small packages of information and knowledge such as journal articles, conference papers, or brief research reports. Micro subjects have more intension and less extension. They require depth classification for their organisation and retrieval.

Porphyry Tree: Dichotomous method of classification invented by the Greek philosopher Porphyry (232-304AD). It divides the universe into two antithetical groups at every step of division, e.g., Male, Female; Metals, Non-metals; Organic, Inorganic.

WASPish bias: Western, Anglo-Saxon Protestant bias in the DDC and other western library classifications.

8. Further Readings

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