Programme-	**BLIS**
Course -	**Library Classification**
Course Code-	**BLIS-113/114**
Sem-	**I sem**
Year-	**2020-21**
Unit-	**1(P-5)**
Faculty-	**Dr. Jyoti**
E-mail-	**hod.ls@monad.edu.in**

Structure:

1. Introduction

   Significance

2. Origin

   History

3. Basic Plan and Structure

   Classification by Discipline

   Division of Main Classes

   Chain structure

   Auxiliary Tables

4. Notation

   Number building practical

5. Hospitality

   Hospitality in Chain

   Hospitality in Array

   Hospitality Through Revisions

6. Use of the Relative Index

7. Various Versions

Abridged Dewey

Electronic versions

8. Revision Machinery and Procedure

9. Use and Popularity

10. Problems

Faulty Structure

11. Future Trends

Future and Status

12. References

13. Glossary

14. Test Questions

1. Introduction

A system of library classification whose technique flashed across the inquiring mind of young Melvil Dewey (1851-1931) on a fine May Sunday morning at a church in 1873 is still the most popular one the world over. Soon after its publication in 1876, its popularity spread across the globe. At present, it is estimated to be used in 2 lakh libraries and information centres in about 135 countries in six continents. Sixty two national or trade bibliographies are arranged by the DDC. The sun never sets on the DDC empire. Now it is trying to find many uses outside the library, in organizing and retrieving information on the Internet and in knowledge networks.

Significance:

Not only this, the invention of the DDC has played a vital role in giving direction and shape to modern librarianship. It is not for nothing that Melvil Dewey is given the title: Father of modern librarianship!

Historically speaking, modern library classification begins with the DDC. It provided a paradigm to all the library classification systems that have come up in its wake. Classification by discipline, ingenious use of decimal notationdepicting hierarchical

relations, and the relative index are its enduring contributions which have been borrowed by all the later library classifications as their very basis.

The puck-like girdle that it put round the world is ever fastening always winning new territories at home and abroadThe sun never sets on its terrains. Though counted among the big three library classification system (the other two being the UDC and the LCC, it has surpassed them in its popularity, simplicity and use. Now it is well entrenched in Europe too where since 2007 “European DDC User Group” (EDUG) has

been officially established. Its official translations exist or are under way in more than thirty major languages of the world. It has found many uses in electronic databases, organising and retrieving information on the web, as an online management tool, supporting collection developments, mapping thesauri and subject schemes. The WorldCat/OCLC, the largest ever bibliographic database, is searchable by the DDC.

2. Origin:

Melvil Dewey, born in1931, was a student of M.A. in Mathematics at the Amherst College, Massachusetts. Coming from a poor family he undertook part-time work in the college library to pay for his studies. In those days books were arranged by what is now known as “fixed location method”. In such methods, a book was given a call number indicating its permanent place on the shelves. Books were divided in to broader subject classes and within that class the arrangement was by accession number. For example, call number 2. 4.6.32 meant thirty second book on the sixth shelf of fourth almirah in the second room of the library. When the space allotted to that subject was filled then books on the subject had to be placed somewhere else. That broke subject grouping. To keep the subject together the books on the next place had to be moved to other place and given new call numbers. So every year the library required reclassification of book which resulted in lot of waste of time and resources. Dewey was upset by this wastage every year, and wanted to find a solution. He thought day and night on the problem. He found the solution in giving numbers to the subject of the book rather than to its physical place on the shelves. For numbering he hit upon the decimal numbers and at the first instance divided knowledge into 10 classes as in the decimal notation only 10 places are available at every division. That idea changed the future of libraries for the better.

History:

The first edition (1876) of the DDC published anonymously from Amherst, Mass. was a thin pamphlet of 44 pages entitled “A Classification and subject index for cataloguing

and arranging the books and pamphlets of a library."The second edition (1885) was seven times as large as that. This obesity went on increasing. The unwieldy size of the 14th edition (1942) became a source of worry for all concerned. The 15th edition (1951) was an exercise to trim the system to a standard edition, which proved a *faux pas by* every account. To cope with the alarmingly increasing size and correct its lopsided growth, the sixteenth edition (1958) was issued in two volumes under a new and capable Editor Benjamin A Custer(1912-1997).The second volume contained the form divisions, areas table and the index.The eighteenth edition (1971) was issued, for the first time, in three volumes.The 20th edition issued for the first volume in 4 volumes was edited by a new scholar editor Dr. John P Comariomi (1937-1991). The Twenty-third edition infour volumes, forming a total of 4,276 pages,is :

Dewey Decimal Classification and the Relative Index/ devised by Melvil **Dewey,23rd** ed./edited by Joan S Mitchell. Dublin,Ohio: The OCLC,2011,4v.

V.1. Introduction &Tables V.2-3.Schedules.V.4.Relative Index

3. Basic Plan and Structure

The DDC is a general classification system which aims to classify documents of all kinds falling in any area of knowledge. The entire human knowledge has been divided into three disciplines based on the Francis Bacon's theory of the three faculties of the human mind,

1. Memory (History,etc.),
2. Imagination (Art and Literature), and
3. Reasoning (Sciences).

These three great divisions are divided into nine main areas of knowledge that are themselves divided into disciplines or sub-disciplines. This division into the nine main classes mirrors the educational consensus of the late nineteenth century Western academic world, and is influenced by the collection of the Amherst College library.

Classification by Discipline:

The DDC scatters subjects by discipline, and the subjects are subordinated to discipline --a subject may occur in almost any discipline. For example, the subject *metals* may turn up in metaphysics, religion, the social sciences, the natural or physical sciences, technology, and the arts, and may appear several times within the same discipline. Thus there is theoretically no single class number for a concept/ subject.

Division of Main Classes

The nine main classes preceded by the 10th Generelia class are notationally transcribed as:

000 Generalia

100 Philosophy and psychology

200 Religion

300 Social sciences

400 Language

500 Pure sciences

600 Technology (Applied sciences)

700 The arts

800 Literature (Belles-lettres)

900 General geography and history,etc.

The order of the main classes represents a mix of Baconian(Francis Bacon(1561-1626)) philosophy actuated by the practical needs of organizing a collection of books. Practicality enters the structure of the DDC even at this the earliest of levels: philosophical systems do not require a Generalia class, but library classification systems do need such a classto account for works and form classes that treat all subjects or are applicable to all subjects, such as systems, computer science, bibliography, manuscripts, general organizations. In addition to theGeneralia class denoted by 001 to 099, the system requires book/author numbers for sub arranging documents having the same subject. This is how it differs from any pure knowledge classification system.

Each of the ten main classes isfurther divided decimally into ten Divisions. Thus, there are 100 Divisions in all. This is called Second Summary of Knowledge in the DDC.

600 Technology (Applied sciences)

610 Medical sciences

620 Engineering and allied operation s

630 Agriculture and related technologies

640 Home economics and family living

650 Management and auxiliary services

660 Chemical and related technologies

670 Manufactures

680 Manufacture for specific uses

690 Buildings

Each of the 100 Divisions has been further divided into 10 Sections. Thus there are 1000 sections called Third Summary of knowledge. For example, 610 Medical sciences, Medicine has been divided as

610 Medical Sciences, Medicine

611 Human anatomy, cytology, tissues

612 Human Physiology

613 General and personal hygiene

614 Public health and related topics

615 Pharmacology and therapeutics

616 Diseases

617 Surgery and related topics

618 Other branches of medicine

619 Experimental medicine

Continuing the decimal pattern, each section can be divided into what we may call Subsections, all being four-digit numbers.

614.1Forensic medicine (Medical jurisprudence)

.4Incidence, distribution, control of disease

Incidence, distribution, control of specific diseases

.*5* Disposal of dead

It may be noted that a dot is put after the third digit when a number exceeds beyond three digits. It may also be noted that it is a dot, not a decimal point. Thus there are Ten Main classes (First Summary),100 Divisions Second Summary) and 1000 Sections (Third Summary) in all in which the entire knowledge has been divided hierarchically.

Chain structure:

As noted above, the scheme is hierarchical in nature. It not only collocates the related material but also depicts through its notation the whole-part or semantic relations of subjects. It can be argued that the hierarchical pattern that the DDC so finely and easily depicts would stem from the notation Dewey chose. Whatever the case, it is an asset of the DDC which later classification ists have admitted borrowing from the pioneering system. Progressive specificity is made visible by the lengthening chain of digits. Every progressive step of the unpeeling of a topic is accompanied by the addition of at least one digit to the immediately superior number. For example:

300	Social sciences
330	Economics
332	Financial economics
332.1	Banks and banking
332.11	Central banks
332.110954	Reserve Bank of India (RBI)

The subjects denoted from 300 to 332.110954 build a chain of concepts, as they are in progressive subordination.

Auxiliary Tables:

There are 6 additionaltables to add aspects to the numbers from the schedules

T1 Standard sub-divisions

T2 Area Table

T3 Table for Individual Literatures – further divided into T3A, T3B, T3C.

T4 Subdivisions(Grammatical) for Languages

T5 National and Ethnic groups

T6 List of Languages of the world

In DDC Table 1 is used without instructions whereas T2-6 can be used only according to instruction.

4. Notation:

Though the DDC uses decimal numbers, but in practice, for ready comprehension and simplicity of notation the first zero and the decimal point are not given.Theseare understood to be always there. 0.1 Philosophy is denoted as 100. Instead a point is put after the first three digits e.g. 332.11 Banks and banking. This is mathematical nonsense, of course; such a point is never placed between the digits of a decimal fraction. Further, it is mandated that no class number will be of less that 3 digits. Therefore, e.g. Natural Sciences instead of 5 or 0.5 is denoted by 500, and Mathematics as 510, and Algebra 512. Zeroes in 500 and 510 are filler zeroes to make the digits three. Mathematically, it is non sense.

Number Building Practical

Though the DDC started purely as an enumerative system but over the years to keep pace with turbulently growing knowledge and to make uses of the advances in classification research the DDC has developed many methods for number building Synthesisthrough “Add to...." instructions from the schedules.

- Add to from 001 to 999
- Add to from a designated base number taken from some other small portion of the schedules.
- Add to from the same division/section.
- Add to through special provisions (facet indicator) including the 04 General special
- Add to from any of the Tables 1-6

5. Hospitality

Hospitality of a classification is defined as its ability to accommodate the emerging topics at their proper places without dislocating the already existing ones. The longevity of a classification system is directly proportional to the efficiency of the hospitality devices employed.

Hospitality in Chain

Hierarchical notation provides infinite hospitality upon the given base and deterred onlyby practical realities: theoretically there is no limit to the further elongation of a

class number to any point demanded by the co-extensiveness of the subject. A newly-emerged independent topic hitherto forming an indistinguishable part of an already existing one may be easily accommodated at the end of the chain by adding another digit to the class number of the parent topic. It is as easy as to stretch an elastic cord. Hierarchy also makes it possible to adapt the DDC in any library, whether small, medium, or large. The chain can be truncated at any point from the right end to give broader numbers to subjects in small libraries. In electronic databases browsing/navigation can be done by moving up or down the hierarchy.

Hospitality in Array

One disadvantage of the purity of notation inherent in the DDC's decimal fractions is that the accommodation of a new subject in an array is not easily done. If a new, independent subject emerges in-between and coordinate with a class, say 510 Mathematics and 520 Astronomy, it is impossible to allot an appropriate place for such a subject. To avoid such a situation, one course of action is to leave some gaps in the notation that describes an array. For example, in the array 511-519 of Mathematics, 517 andinthearray of 541-549 Chemistry sections 544-545have been left unassigned. If ever a new branch of mathematics or chemistry is developed, space is available (if the branch falls logically there). In the Third Summary of the DDC23 there remain about 80 unused classes; these are shown in the schedules by having their three-digit figures enclosed in square brackets.For example [136] [unassigned].Some of these gaps may be filledin the future. And gaps exist in all the arrays onward at any level --the more remote the array the greater the possibility of a home for a subject. The leaving of gaps is not a science; it is an art for its day. And the day may come when all the gaps are gone, but new subjects will continue to emerge: Gaps are few in main class 600

Appliedsciences (Technology), where subjects still emerge dynamically. Moreover, the chain there has already been elongated to the limit of tolerance.

Hospitality ThroughRevisions:

Another way to account for emerging fields is to redo several contiguous divisions, as has been done for 350-354 Public administration, 560-590 Life sciences in DDC-21 (1996).This trend started with the DDC-16(1958). This method ofdrastic revision not only accommodates new subjects but also relocates the wrongly placed ones to their proper places.

6. Use of the Relative Index

The Relative Index has always been an integral part of the DDC system. In the DDC-23 it has 965 pages contained in the fourth volume.The Index is called relative as it reverses the main pattern of collocation of subjects in the schedules. In the schedules the first division of the knowledge is by broader disciplines; a subject may occur in different disciplines, e.g. the subject *child* occurs in psychology, education, sociology, literature, medicines, and many more.Hence subjects are scattered by discipline. In the index all aspects of a subject dispersed by discipline in the schedules have been converged under one entry. Thus one can see at a glance the different aspects and ramifications of a subject. It is relative as it also depicts the relation of one aspect of a subject to another and brings together the distributed relatives of the subject.

It is an alphabetical index to every key term occurring in the schedules and all the tables. In addition to the explicit terms, some terms/concepts implied or obtainable through number building process, and popular synonymous terms have also been included. Similarly in the 23rd edition the total number of more than index100,000 entries is far more than the total of 50,000 enumerated entries in the Schedules and Tables combined. The Index whichalso offers another approach to knowledge organizations is lauded as another enduring contribution of the DDC to the science of classification and indexing.

7. Various Versions

Abridged Dewey

Since 1884, an abridged version is available. It is always in one volume, comprisingof an Introduction, Schedules, only four tables (namely 1, 2, 3 and 6) and Index. It has shorter numbers (normally up to two digits beyond the dot) which are easy to remember and can be easily written on the spine of the document for shelving. Beside this, it is very useful for teaching the basics and number building in the DDC.Currently it is in its 15th edition published in 2012.

Electronic versions

In 1996, the DDC was made available on a CD-ROM called *Electronic Dewey*. Later it was named as *Dewey for Windows*.The annually updated Dewey for Windows on CD ceased publication in 2001. Since its 22ndedition its electronic versions are WebDewey (2003) and Abridged WebDewey (2004) now available only on the Internet to the licensed users and it is known as WebDewey 2.0. Web Dewey versions available both for full and abridged editions are released simultaneously with the new edition but Web Dewey is updated constantly and released annually. These versions are much more enhanced with data and have many features and facilities for keyword or

systematic searching or browsing of the schedules, and number building facilities. The class numbers are also mapped to Subject Headings.It is an easy-to-navigate, simple user interface that is suitable for all level of users.

8. Revision Machinery and Procedure

It has permanent machinery and a sound mechanism for its regular revision. Its new and revised editions are published regularly after somewhat fixed intervals. Latest edition is 23rd published in 2011.Next edition is expected in 2019. The Dewey Section is the executive organ which prepares draft proposals for amendments and revisions in its office at the Library of Congress. The Editorial office is located in the Dewey Section of the Library of Congress, Washington, D.C., USA since 1953. Not only does the Section draft the proposals and amend schedules, it is also its single largest user. Here the Dewey assistant editor under the supervision of the Section chief classify more than 1,10,000 titles every year in all subjects and languages for use in MARC records and CIP data. Time to time userssurvey may be conducted to get feedback,and some newly designed and amended classes are tested in some special library before their finalization. Nowadays the editors search the Internet and databases to discover current trends and literary warrant in areas of revision,Other knowledge organisation tools are consulted in that area.They also get clues from the weekly list of Library of Congress Subject Headings. Editors offer suggestions on the classifications on the new books and new topics on the Dewey Blog.To carry out the revision there is a full time additional team headed by the (chief) editor of the DDC. Some drastic revisions are outsourced as was donein the caseof 780 Music in 1980. All revisions are ultimately approved by the DCEPC before implementation. . The present Editor- in- Chief is Michael Panzer who took over in January 2013.

9. Use and Popularity:

In addition to its use in 2 lacs libraries all over the world, it is the most popular system in the USA where about 95% of School and Public libraries, 20% of Special libraries, 25% of the academic librariesuse it. It is also the most popular classification system in India. DDC numbers are available in CIP data and MARC record for copy cataloguing. In MARC format the DDC call number is always entered in the field with a tag number 082. Hindi edition of the Abridged Dewey was released in 1976.Now it is well entrenched in Europe too where since 2007 “European DDC User Group” (EDUG) has been officially Established. EDUG http://www.slainte.org.uk/edug/index.htm.The WorldCat/OCLC, the largest ever bibliographic Database, is searchable by the DDC.It

has found many uses in electronic databases, organizing and retrieving Information on the web, as an online management tool, supporting collection developments, mapping thesauri and subject schemes.The BUBL LINK http://bubl.ac.uk/link/.Catalogue of selected Internet resources covering all academic subject areas, uses the Dewey Decimal Classification system as the primary organization structure for its catalogue.With the increasing use of online catalogues it has been recognized that searching a DDC classified sequence is an important complement to searching by keywords or subject headings, especially for generic searches up and down a hierarchy. For this purpose too long notation far from being a hindrance becomes useful in pinpointing specified subjects. Dewey Survives supported by widespread use, familiarity, reasonable revision and basically very clear notation.

10. Problems

Popularity begets criticism. DDC is no exception to it. Though very popular and first choice of new and general libraries it gets a fair share of criticism.

- It has its roots in 19th century knowledge. Structurally it does not draw the modern map of knowledge.Its structure is unsystematic, defective and fractured one. Structure gets warped with every new edition trying to accommodate new subjects.
- Its notation is very weak but easy due to simplicity and familiarity of Indo-Arabic numerals.Puritymakes decimal notation not effective for synthesis and hospitality. There is no hospitality except in decimal and gap devices. At times,the scheme becomes warped and cramped. Knowledge is multi-dimensional but its notation is uni-dimensional.
- The DDC started with a scheme of notation then tailored its principles to fit the rule of ten.The division by 10 is only artificial and destructive like the Procrustean bed. Knowledge does not grow at only 10 levels. Natural growth or division of knowledge is never decimal.
- Allocation of notation to subjects is faulty and is not judicious or differential. Schedules are deformed. Classes 621-629 Engineering aretotally cramped. Due to this, class numbers in such classes have become too lengthy.Melvil Dewey gave equal space to all ten classes irrespective of their requirements. Ranganathan gave half space to science subjects and half to social sciences and humanities.Melvil Dewey gave only 2/10 space to science and technology.
- Due to its WASPISH bias, it caters mostly to the needs of White races, Anglo Saxon, Protestant Christian Subjects. In many libraries outside the US, it is locally

extended and adapted to classify local subjects.However, now it is understood by the DDC editors that "Sensitivity to cultural and social issues outside the US increases the international usefulness of the classification."

Faulty Structure:

Arrangement of Main Classes is not a very logical one due to its 19th century origin.400 Linguistics and 800 Literature are unnecessarily separated, so are 300 social sciences and 900 History.Within social sciences 320Political science is separated from 350 Public administration. 327 International Relations is separated from 341 International Law. Sciences 500have been separated from their applications and put into a separate main class 600. Many system alternate theory and practice of the subject and collocate sciences and their technology together.In 900 Geography, Biography, History are clubbed together because there was no space left in the original plan of 1876.

In brief there are many points which are to be criticized.

11. Future Trends:

The next edition i.e. DDC-24 is likely to be published in 2018 to continue the changes hinted in DDC-23. As evinced by the two previous editions, the DDC is moving towards internationalization by gradually removing White, Anglo-Saxon and Protestant (WASP) bias. Though able to classify in complex situation it is getting simple to operate. Facet structure is becoming transparent with a capability to hold together many facets in a single class number.Since the acquisition of the Forest Press by the OCLC Online Computer Library Center, Dublin, Ohio, in 1988 many innovative efforts have been made to design and market many Dewey products, such as bookmarks, Dewey rap music, AV teaching kit, Guides to the full, abridged and electronic versions of the DDC, and Dewey posters and exclusive publication of three main summaries. OCLC has sponsored pioneering and successful research to study the use of classification in online databases. Most important of all, research is going on to find wider applications of the DDC in all sorts of information management. Three Summaries of the DDC are already being used to organise information on the Internet. For example, a browser based on the DDC has been developed for NetFirst, an OCLC database of source accessible on the Internet.

Future and Status:

The DDC is not the same as it was when created a century and four decades ago. It has undergone constant changes; opened itself to latest developments in classification theory and information science and information technology and initiated research in

theory and use of classification in the digital environment. During its existence it has shown its mettle in the arena of bibliographic classification theory. What has remained stable is its basic plan, its notation, and its desire to serve librarianship by developing and adapting itself to the new demands of knowledge organization.It is geared to become a powerful and reliable subject access system of the 21st century digital environment. Its ongoing popularity, its increasing applications in the digital information environment, and its innovative marketing and smart revision machinery keep the system at the top.

12. References

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