NATIONAL OPEN UNIVERSITY OF NIGERIA

DAM 207

Indexing and Classification Theory

Module 2

DAM 207 (Indexing and Classification Theory) Module 2

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Unit 1 Dewey decimal classification Scheme (DDC)

1.0 Introduction

The publication in 1876 of a pamphlet entitled a classification and subject index for cataloguing and arranging the books and pamphlets of a library marked the beginning of the Dewey decimal classification which was soon adopted by many libraries in the United States and later by libraries around the world. This unit provides an introduction to the Dewey decimal classification scheme, its main classes, strengths and weaknesses.

2.0 Objectives

At the end of this unit, you should be able to:

- describe the origin of the DDC
- discuss the basic concepts of the scheme
- explain the subjects in the main class of the DDC
- List the weaknesses and strengths of the DDC Scheme.

3.0 Main Content

3.1 Beginnings of DDC

The Dewey decimal classification scheme was the brain child of Melvil Dewey. It is the oldest of the classification schemes in use. Born in 1851 in the USA, Dewey graduated from Amherst College in 1874. As a student; he began to work in the college library and stayed on after graduation.

The first edition of his scheme was published in 1876 under the title: *A classification and subject index for cataloguing and arranging the books and pamphlets of a library*. The name Dewey did not appear on the title page but in the copyright notice of the verso of the title page.

Melvil Dewey introduced the idea of "relative location" as opposed to "fixed location". He assigned decimal numbers (Arabic numerals with decimal fraction notation) to books and not to shelves. Dewey was the first to popularise the idea of mechanisation.
DDC has been translated, with or without abridgement, expansion or adaptation into many languages such as Spanish, Danish, Turkish, Japanese, and Portuguese etc. It is perhaps the most popular classification scheme in libraries all over the world. It is universal and very popular in Africa.

3.2 Introduction and Basic Concepts

The Dewey decimal classification divides the whole spectrum of knowledge as contained in information materials into 10 broad categories. Each of these is called a "class" and is assigned a three-digit number. Each main class can be further divided into 10 sub-classes; each subclass can still be further divided into 10 divisions and each division into 10 subdivisions until all the subject terms have been specified. The primary arrangement of classes is based on disciplines rather than subjects.

000 Generalities

100 Philosophy

200 Religion

300 Social Sciences

400 Language

500 Natural Sciences and Mathematics

600 Technology (Applied Sciences)

700 The Arts

800 Literature

900 Geography and History

- It uses decimal to specify subject terms that are specific which will probably result in digits of long numbers. The use of Arabic numerals and decimal allows it to be expanded indefinitely.
- It uses Arabic numerals only as notation, therefore it has pure notation.
- It has many mnemonic devices, especially in the use of auxiliary tables that can be used throughout the scheme e.g. 03 for dictionaries and encyclopedias. Since the same numbers can be used in the schedule, it is very easy to remember.
- Dewey decimal classification scheme provides a relative index to the diverse materials in the schedules.

3.3 Evaluation of Dewey Decimal Classification Scheme

Much has been written about the merits and weakness of the Dewey decimal classification.

Following is a brief summary of some of the opinions.

Merits

1. It is a practical system. The fact that it has survived many storms in the past hundred and twenty years and is still the most widely used classification scheme in the world today attests to its practical value.
2. Relative location was an innovation introduced by Dewey, even though it is now taken for granted.
3. The relative indeed brings together different aspects of the same subject scattered in different disciplines.
4. The pure notation of Arabic numerals is universally recognizable. People from any cultural or language background can adapt to the system easily.
5. The self-evident numerical sequence facilitates filing and shelving.
6. The hierarchical nature of the notation expresses the relationships between and among the class numbers. This characteristic particularly, facilitates online searching. The searcher can broaden or narrow a search by reducing or adding a digit to the class number.
7. Use of the decimal system enables infinite expansion and subdivision.
8. The mnemonic nature of the notation helps library users to navigate within the system.
9. The continuous revision and publication of the schedules at regular intervals ensure the currency of the scheme.

Weaknesses

1. The Anglo-American bias is obvious, particularly in 900 (Geography and history) and 800 (Literature). A heavy bias toward American Protestantism is especially evident in 200 (Religion).
2. Related disciplines are often separated, e.g., 300 (Social sciences) from 900 (Geography and history) and 400 (Languages) from 800 (Literature).
3. The proper placements of certain subjects have also been questioned, e.g., Library science in general works (000s), Psychology as a subdivision under Philosophy (100s), and Sports and Amusements in the Arts (700s).
4. In 800, literary works by the same author are scattered according to literary form when most scholars would prefer to have them grouped together.
5. The base of ten limits the hospitality of the notational system by restricting the capacity for accommodating subjects on the same level of a hierarchy to nine divisions.
6. The different rate of growth in various disciplines has resulted in an uneven structure. Some classes, such as 300 (Social sciences), 500 (Natural sciences), and 600 (Technology), have become overcrowded.
7. Even though an existing subject can be expanded indefinitely by virtue of the decimal system, no new numbers can be inserted between coordinate numbers e.g., between 610 and 620 – even when required for the accommodation of new subjects. The present method of introducing a new subject is to include it as a subdivision under an existing subject.
8. While the capacity for expansion is infinite, it also results in lengthy numbers for specific and minute subjects. The long numbers have been found inconvenient, particularly when the system is used as a shelving device.
9. Relocations and completely revised (i.e., phoenix) schedules, while necessary to keep up with knowledge, create practical problems in terms of reclassification for libraries using the scheme.

Self-Assessment Exercise

Explain the origin and beginning of the Dewy decimal classification scheme.

4.0 Conclusion

In this unit you have learnt about early beginnings of the Dewey decimal classification scheme. You have also learnt about its main classes, the strengths that have kept the scheme throughout the years and also about the issues that has been considered as the scheme's weakness.

5.0 Summary

DDC is the oldest and most widely used scheme of classification. Despite its severe criticism, it has been adopted by a majority of libraries in English speaking and British Commonwealth countries. It has been adopted mainly due to its simple notation, its case in application, the adaptability of its notation to the requirements of libraries of different sizes and nature(and for the fact that it can be expanded with ease), availability in a variety of editions and its use in bibliographies and catalogue.

6.0 Self-Assessment Exercise

Discuss the strength and weaknesses of the Dewey Decimal Classification Scheme.

7.0 References/Further Reading

Aina, L.O. (2004). *Library and Information Science Text for Africa*. Nigeria: Third World Information Services Ltd.

Chan, Lois Mai (1994). *Cataloguing and Classification: An Introduction*. New York: McGraw Hill Inc.

Edoka, B.E. (2000). *Introduction to Library Science*. Nigeria: Palma Publishing & Links Company Ltd

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Unit 2 Library of Congress Classification Scheme (LS)

1.0 Introduction

In the 19th century, the Library of Congress collection was organised according to a system devised by Thomas Jefferson. When the library moved into its new building in 1897, the Jeffersonian system was found to be inadequate for a collection that had grown to over one and a half million pieces. Two other classification systems, the Dewey Decimal Classification (DDC) and Charles A. Cutter's Expansive Classification (EC), had emerged during the last few decades of the century and were in use in many other libraries in the nation, but neither was considered suitable for the Library of Congress. It was decided to construct a new system, to be called the *Library of Congress Classification* (LCC), and work began on its development.

In this unit, we shall examine the history and early beginnings of the Library of Congress classification scheme. We will also consider its basic concepts as well as the strengths and weaknesses of the scheme.

2.0 Objectives

At the end of this unit, you should be able to:

- describe the evolutionary development of the Library of Congress classification scheme
- outline the main classes of the scheme
- explain the basic concepts of the LC scheme
- State the strengths and weakness of the LC Scheme.

3.0 Main Content

3.1 Beginnings of Library of Congress Classification Scheme

Herbert Putnam initiated the Library of Congress (LC) scheme. It evolved between 1899 and 1920 when the scheme was first published. From the beginning, individual classes were developed by different groups of specialists under the direction of J.C.M. Hanson and Charles Martel; the schedules, each of which contains an entire class, a subclass, or a group of subclasses, were published separately. Thus, unlike most other classification systems, LCC was not the product of one master mind. Indeed, it has been called "a coordinated series of special classes."

Today, the Library of Congress classification consists of **21** classes displayed in over **47** separately published schedules. Its provisions are continually updated, and information on additions and changes is made widely available to the library community.
Although the scheme was originally designed for the Library of Congress, many other libraries all over the world are using it. It is useful in large libraries because it is a detailed classification scheme.

During the 1960s in particular, there was a trend among academic libraries previously using DDC or other systems to switch to LCC. There were several reasons for the trend:

- The basic orientation of LCC toward research libraries
- The economic advantage offered by LC cataloguing services – libraries can simply adopt whole call numbers as they appear on LC cataloguing records
- The increasing ease with many libraries can bring up full LC records online and add them to their own catalogue databases.

Self-Assessment Exercise

Describe the early beginnings of the Library of Congress classification scheme.

3.2 Basic Concepts

The scheme is based on literary warrant, which is the collection of the Library of Congress. Since it is based on existing collection, the scheme is minutely detailed. It is an enumerative scheme and covers all knowledge.
The notation is mixed; it uses single capital letters for its main classes and double letters for sub-classes. It uses Arabic numerals for further sub-divisions. It also uses Cutter numbers to further specify a document.

The format of schedules is the same for each schedule consisting of the following: a preface or prefatory note, a brief synopsis which covers the primary sub-divisions of each volume; an outline and an index which is very detailed.

The field has been divided into **20** classes, with an additional class for general works. The outline is given below:

A. General works
B. Philosophy, Psychology, Religion
C. Auxiliary sciences of history
D. History: General and Old World
E-F. History: America
G. Geography, Maps, Anthropology, Recreation
H. Social sciences
I. Political science
J. Law
K. Education
L. Music and books on music

M. Fine Arts

N. Language and Literature

O. Science

Q. Medicine

R. Agriculture

S. Technology

T. Military science

U. Naval science

V. Bibliography and Library science

3.3 Evaluation of the Library of Congress

The Library of Congress classification has both strong and weak points.

Merits

- It is a practical system that has proved to be satisfactory.
- It is based on the literary warrant of the materials in the Library of Congress classification collection, the nature and the content of which are parallel to those in academic and research libraries.
- It is largely an enumerative system that requires minimal notational synthesis.
- Each schedule was developed by subject specialist rather than by a generalist who cannot be an expert in a field.
- Its notation is compact and hospitable.
- There are frequent additions and changes, and these are made readily available to the cataloguing community.
- The need for reclassification of large blocks of material is kept to a minimum because, to ensure stability of class members, few structural changes have been made over the year.

Weakness

- Its scope notes are inferior to those of DDC
- There is much national bias in emphasis and terminology.
- Too few subjects are seen as compounds. Alphabetical arrangements are often used in place of logical hierarchies.
- There is no clear and predictable theoretical basis for subject analysis.
- As a result of maintaining stability, parts of the classification are obsolete in the sense that structure and collocation do not reflect current conditions.
- It is expensive to keep an up-to-date working collection of schedules, supplements, new announcements of changes, and accumulations of additions and changes.

4.0 Conclusion

In this unit, you have learnt about the Library of Congress classification scheme. You have also learnt the strengths and weaknesses of the LC Scheme.

5.0 Summary

What you have learnt in this unit concerns the Library of Congress classification scheme, its history, classes, strengths and weakness. In the next unit, you shall learn about other classification schemes and the special classification scheme.

6.0 Self-Assessment Exercise

1. Discuss the concept of the Library of Congress classification scheme.
2. State the merits and weakness of the LC scheme.

7.0 References/Further Reading

Aina, L.O. (2004). *Library and Information Science Text for Africa.* Nigeria: Third World Information Services Ltd.

Chan, Lois Mai (1994). *Cataloguing and Classification: An Introduction*. New York: McGraw Hill Inc.

Edoka, B.E. (2000). *Introduction to Library Science.* Nigeria: Palma Publishing & Links Company Ltd.

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Richardson, E.C. (1991). *Classification, Theoretical Practical.* New York: Gower.

Wynar, Bohdan S. (1992). *Introduction to Cataloging and Classification*. (8th ed.). Englewood, Colorado: Libraries Unlimited.

Unit 3 Brief Summary of Other Classification Scheme

1.0 Introduction

In this unit, we shall examine other classification schemes. We shall also consider the special classification scheme and the reasons for making a special classification scheme.

2.0 Objectives

At the end of this unit, you should be able to:

- describe the feature of the other modern classification schemes
- distinguish between a special and general classification schemes
- outline the reasons for a special classification scheme
- List and explain the other types of classification schemes.

3.0 Main Content

3.1 Universal Decimal Classification Scheme

The origins of UDC lie in Europe. The UDC was produced by two Belgian Lawyers, Paul Otlet and Paul Henry La Fontaine, who were much more interested in analysis of ideas rather than on general theory of knowledge (DDC) or literary ideas of knowledge (Library of Congress classification scheme). The first edition was published in French in 1905. Subsequent editions, some of which have been abridged versions have appeared in various languages.

Its creation was a conscious attempt to develop with permission and redesign Dewey classification to meet the needs of precise classification for highly specific themes, such as might be the subject matter of periodical articles and general literature. It developed from DC, but in a very different way, and in some respects pointed the way forward to colon and synthetic classifications.

UDC uses ten Arabic numerals with decimal fraction notation. The decimal point in the beginning is omitted. A decimal point is usually places after every three digits, merely to serve as a visual aid.
It is generally used by special libraries. In view of the high level of precision which can be achieved by its use, specialized information centres in industrial and technological establishment apply the scheme.

3.2 The Colon Classification

The Colon Classification (CC) was developed by S.R. Ranganathan, a prominent librarian from India who is considered by many to be the foremost theorist in the field of

classification because of his contributions to the theory of facet analysis and synthesis. The colon classification is a manifestation of Ranganathan's theory, which has had a major influence on all currently used classification and indexing systems.

In the colon classification, knowledge is divided into more or less traditional main classes. Each class is broken down into its basic concepts or elements according to certain characteristics, called facets. In isolating these component elements, Ranganathan has identified five fundamental categories, often referred to as PMEST: Personality (entity in question), Matter (materials, substances, properties, etc.), Energy (operations, processes, activities, etc.), Space (geographic areas and features), and Time (periods, dates, seasons, etc.). When classifying a document, the classifier identifies component parts that reflect every aspect and element of the subject content and puts them together according to a structural procedure, called a facet formula, which has been individually designed for each main class.

Thus, unlike enumerative classification schemes, Colon Classification does not list complete ready-made numbers in its schedules. A combination, or synthesis, of notation is tailored for each work in hand. Notation for the colon classification is extremely mixed and complex. It combines Arabic numerals, capital and lower case letters, some Greek letters, brackets, and certain punctuation marks.

The *Generalia* classes are represented by Arabic numerals. Main classes are shown by capital letters of the Roman alphabet and certain Greek letters. Basic concepts and elements under each main class are represented mainly by Arabic numerals. Colon Classification itself, however, has not been widely used.

3.3 The Bibliographic Classification (BC)

Henry Evelyn Bliss (1870-1955) believed for many years that libraries needed a more erudite system than Decimal classification to win more intellectual respectability of subject specialist and education.

From the beginning, several principles guided Bliss's work. These are consensus, collocation of related subjects, subordination of special to general, graduation in specialty, and the opportunity for alternative locations and treatments.

Bibliographic classification uses the decimal fraction notation. It uses mixed notation, consisting of 26 roman capital letters, 26 Roman smalls alphabet and nine Arabic numerals (excluding zero). It also uses punctuation marks, mathematical symbols and improved digits. Its notation is largely non-hierarchical. Bliss was obsessed with achieving the possible shortest class number.

BC special features include alternative location for certain themes where expert views might differ, short notation, and some selective thinking of pure and applied sciences. BC has been mainly used in Britain and the commonwealth countries.

Self-Assessment Exercise

From the above description, state the differences between the UDC, CC and BC Schemes.

3.4 Special Classification

The special classification scheme is the one designed to cover the field of specialization which may be astronomy, astrophysics, microbiology, forestry, philosophy, international relations, English poetry, plant anatomy, human nervous system, political thought etc. In this case the field of specialization may be referred to as a host class

There are many reasons claimed for making a special classification. Some of these reasons are:

Lack of co-extensiveness: most general schemes do not provide enough details required for dealing with micro-documents in documentation.

Lengthy class numbers: most general schemes provide lengthy class numbers for complex subjects to be dealt with.

Special requirements or special point of view: general schemes are designed to take into consideration the majority point of view. Therefore, these are not able to fully meet the special requirements of a particular special library or information centre.

Lack of flexibility (provision for new subjects without disturbance of the preferred sequence): very often, general schemes lack flexibility to a certain extent.

Lack of helpful sequence: very often, a general scheme may not be able to achieve optimum helpfulness in the arrangement of documents or entries.

There are three different approaches to special classification schemes. These are given below:

1. The approach to a fully autonomous special classification**.** Such a scheme may be independent of any general scheme.
2. The special classification scheme may be prepared so that it is autonomous for special subject(s), and dependent upon general classification for allied subjects. Such a scheme is not fully autonomous.
3. The special classification scheme may be designed in such a way that it is dependent upon a general classification. It may be an extension of the general scheme. Such an approach may be called the do-all classification approach.

4.0 Conclusion

In this unit, you have been introduced to other modern classification scheme. You have also learnt about the special classification scheme. Finally, you have been able to learn about the reasons for a special classification scheme in an information unit.

5.0 Summary

What you have learnt in this unit is focused on other types of modern classification scheme, the special classification scheme and the reason for its establishment.

6.0 Self-Assessment Exercise

1. List and explain the UDC, CC and BC classification Schemes
2. What are special classification scheme? Explain the reasons for making a special classification scheme.

7.0 References/Further Reading

Chan, Lois Mai (1994). *Cataloguing and Classification: An Introduction*. New York: McGraw Hill Inc.

Edoka, B.E. (2000). *Introduction to Library Science*. Nigeria: Palma Publishing & Links Company Ltd.

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Unit 4 General Principles of Classifying a Document

1.0 Introduction

The first important step to classify document is to have an overview of the classification scheme in use. The mastery of the scheme will normally come with ease and the summary of the classes can easily be learnt. This will enable you to appreciate how the overall knowledge is grouped by the scheme.

2.0 Objectives

At the end of this unit, you should be able to:

- identify the features of a workable classification scheme
- list and explain the criteria of a workable classification scheme.

3.0 Main Content

3.1 Criteria for a Workable Classification Scheme

A good universal classification scheme, apart from having a schedule, notation and index, must have certain features that would make it useable. A good classification scheme must:

- Cover the whole knowledge as reflected in the literature. Thus, single-concept and multi-concept documents must be taken care of.
- Be systematic, that is related subjects must be brought together as close as possible. All aspects of a subject must be brought together in a systematic manner.
- Be regularly revised. Thus, it must have an organizational support that will ensure constant revision. The need to be up to date is important as new subjects appear and existing subjects sometimes need to be expanded because of the growth of the literature. The scheme must be able to accommodate such subjects. The accommodation of new subjects and expansion of existing subjects, however, should not disrupt the entire arrangement of the scheme in between revisions. The organization might produce updates which are called additional changes.
- Ensure that the terminology used in the scheme is unambiguous. It must be clear and precise to the users and the classifiers.

4.0 Conclusion

The nature of the universe of subjects is multi-dimensional, with the development of knowledge; these subjects have to be incorporated in the classification scheme. Thus, a scheme has to keep pace with the developments in the universe to remain relevant and workable.

5.0 Summary

What you have learnt in this unit is focused on the different criteria of a workable classification scheme.

6.0 Self-Assessment Exercise

List and explain the criteria of a classification scheme.

7.0 References/Further Reading

Aina, L.O. (2004). *Library and Information Science Text for Africa.* Nigeria: Third World Information Services Ltd.

Edoka, B.E. (2000). *Introduction to Library Science*. Nigeria: Palma Publishing & Links Company Ltd.