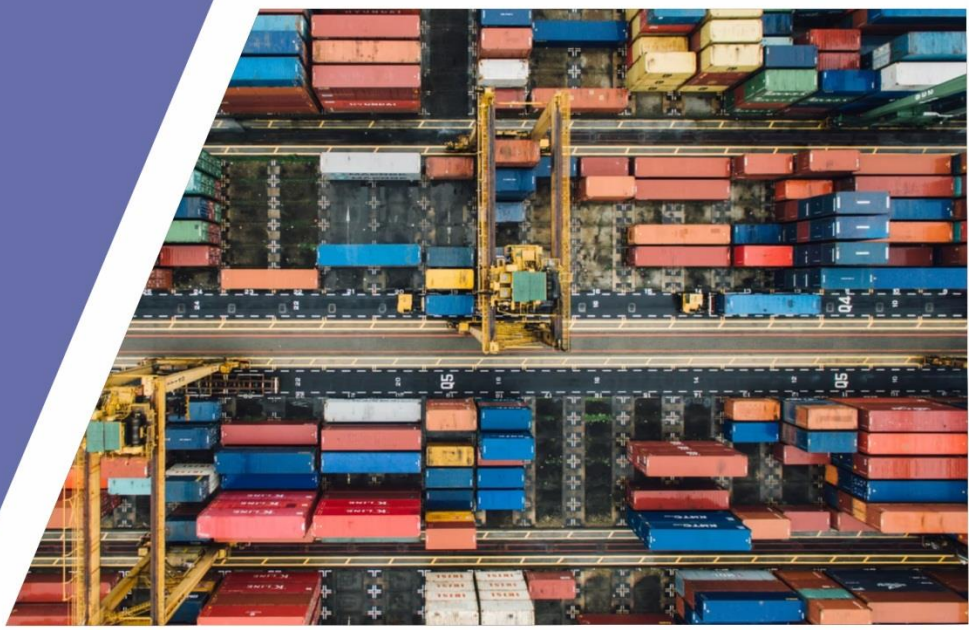
NATIONAL OPEN UNIVERSITY OF NIGERIA

DAM 207



Indexing and Classification Theory

Module 1

DAM 207 (Indexing and Classification Theory) Module 1

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Unit 1 Early History, Definition and Purpose of Classification

1.0 Introduction

Classification pervades all activities of our life. Those who are orderly in life make a greater use of classification, though unconsciously. Most of us are unaware that we classify to a large extent in our daily lives. Without classification, human progress could be impossible. This process helps convert unorganized thought and impressions into recognisable patterns. Since inception, efforts have been made to classify information based on certain criteria such as order of acquisition, size of documents, title, and subject. The most successful attribute so far for classifying documents is by subject. This unit will discuss the history and origin of classification and shed light on the definition and purpose of classification in an information environment.

2.0 Objectives

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

- explain the historical antecedent of classification
- define and explain the term classification
- identify the purposes of classification in an information organization.

3.0 Main Content

3.1 History of Classification

Earlier attempts at classification were to organise human thought: they were designed to aid the mental plotting of the universe of thought and objects, rather than serve as practical methods of document arrangement or library systems. These can be traced, somewhat tentatively, from Plato's Republic to the late 19th century classifications, via Aristotle, Pliny and others. Libraries, too, have a history of developing schemes. The clay tablets in the Assyrian library of Asur-ban-i-pal were divided into two main classes; those dealing with knowledge of the earth and those dealing with the heavens.

Aristotle is said to have taught the Kings of Egypt how to arrange a library. The earliest recorded scheme was that designed by Callimachus for the library of the Pharaohs at Alexandria (260-240 BC).

The term classification is derived from the Latin word ***classis,* which** is used to distinguish any one of the six groups of the Romans according to their wealth and social status. In the early times, library materials were arranged in one or a combination of one of the following ways: size, title, broad subject, author, chronology, binding and colour.

The traditional ideas of library classification were borrowed from the logical or philosophical principles of classification. Classification began with the universe of knowledge as a whole

and divided into successive stages of classes and subclasses, with a chosen characteristic as the basis for each stage. On the whole, the progression is from the general to the specific, forming a hierarchical, or "tree," structure, each class being a *species* of the class on the preceding level and a *genus* to the one below it. The classes on each level, usually mutually exclusive and totally exhaustive categories, form a coordinate relationship to one another and are collocated according to the affinity of their relationships. Classification according to hierarchical principles, with biological taxonomy as the prevailing model, was in a particularly active stage of development during the latter part of the 19th century.

The first modern scheme devised specifically for the arrangement of books in a library was designed in 1498 by Aldus Manutius in France. It developed into what was called *The French System* or *The System of the Paris Booksellers,* which became the most influential and widely used of all bibliographic schemes, especially in Europe.

Other schemes of interest appeared in the 18th and 19th centuries. The beginning of classification as it is today took place in the 19th century in America with the growth of the Congress Library.

Self-Assessment Exercise 1

Discuss the history and origin of classification.

3.2 Definition of Classification

Classification is the act of organizing the universe of knowledge into some systematic order. It has been considered the most fundamental activity of the human mind. The essential act of classification is the multi-stage process of deciding on a property or characteristic of interest, distinguishing things or objects that possess certain properties from those that lack it, and grouping things or objects that have the property or characteristic into a class. Other essential aspects of classification are establishing relationship among classes and making distinctions within classes to arrive at subclasses and finer divisions. The classification of library materials follows the same pattern

; it is thus a special application of a much more general human intellectual activity. Library classification in particular has been defined as the systematic arrangement by subject of books and other material on shelves or of catalogue and index entries in the manner which is most useful to those who read or seek a definite piece of information. In other words, library classification serves a dual function: to arrange items in a logical order on library shelves and to provide a systematic display of bibliographic entries in printed catalogues, bibliographies, and indexes. Today, in some online catalogues, classification also serves a direct retrieval function.

Classification is the formal process by which a mechanism is established to translate these similarities and dissimilarities into a place in a physical sequence. Documents display a number of attributes which can be used to determine likeness.

The four attributes that documents possess are:

Author: the person or persons intellectually responsible for the creation of the work.
Title: the title of the individual work
Form: the physical form in which the document appears

Subject: by the content of the work, the subject matter which it contains.

In any collection, the most appropriate basis for determining groups varies according to the needs of the collection, for example, library materials may be grouped by author, physical form, size, date of publication, or subject. In modern library classification systems, subject is the predominant characteristic for grouping.

3.3 Purpose of Classification

Classification in the sense of grouping things together (either literally or mentally) goes back to ancient civilizations. In this widest sense, it remains an activity which we all practice in everyday life: we have a mental map or 'classification' in which we associate or dissociate the objects, ideas and impressions that are our experience of the world. Classification systems seek to provide a structure for the organization of materials so that an item may be retrieved according to some aspect of its character.

Classification is thus seen as organizing stock for effective service, a collection is an amorphous and unrevealing entity without the guiding light of classification. The ultimate aim of the classification sequence is to provide a physical arrangement where similar materials are closely located on the shelf and, within subject groupings of like subjects, an order of general to specific subjects is observed.

Classification is not only the grouping of things for location or identification purposes; it is also their display in some sort of rational, progressive (usually subject) order so that their chief relationships may be ascertained. Relative location of subjects is a great time saver; it is the purpose of classification systems to collate subjects and allows the subject to be preserved.

Classification provides insight to the generally accepted divisions of knowledge. It splits entire knowledge and provides opportunities for limiting a subject and for proceeding from a general subject to the smaller specialized areas of that subject. A close look at any classification scheme reveals in considerable detail the components of that subject.

As a shelving device, library classification has two objectives:

- To help the user identify and locate a work through a call number and to group all works of a kind together. In order to fulfill the first objective, any method of numbering or marking would be sufficient as long as there is a correspondence between the number or mark on the document and that on the cataloguing entry.
- It represents a collocating function and requires the grouping of like materials together on the basis of chosen characteristics. Thus, in its function as a retrieval tool, classification may help to identify and retrieve a group of related items as well as a specific known item.

Self-Assessment Exercise 2

Briefly explain the purposes of classification.

4.0 Conclusion

In this unit, you have learnt about the historical perspective of classification of information and several views of definition of classification have been discussed. You also learnt about the purposes and rationale of classification.

5.0 Summary

Classification is a major device for organizing resources for effective use. What you have learnt in this unit concerns the origin of classification and shed light on a proper understanding and purpose of the concept of classification. The units that follow shall build upon issues discussed in this unit.

6.0 Self-Assessment Exercise

1. Explain the term classification.
2. Discuss the purpose of classification in an information organization.

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.

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Unit 2 Theory of Classification

1.0 Introduction

A theory refers to an organized body of principles. These principles provide guidance to practitioners of the concerned subject. Any theory, like any subject, goes through a process of growth and development. Therefore, a theory might be elementary or advanced, depending upon its stage of growth. In this unit, you will learn about the theory of classification and its basic concepts.

2.0 Objectives

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

- describe the theories of classification
- explain the systematic study of classification as it concerns growth and development.

3.0 Main Content

3.1 Theory of Classification

Any theory of a subject undergoes a process of evolution and the same goes for theory of library classification. The theories of classification which existed till the early 50s are referred to as the descriptive theories of library classification because they more or less, described as the practices in use at that time.

In the earliest applications of classification, when for the first time the shelves were open to the public, classification practice forged ahead of theory. In many respects, perhaps of necessity, it was like this so for a long time. The description of theory which follows is a concise overview of a process which developed very gradually at first. During the period of descriptive theory, theory followed practice. Thus, theory had little power to influence practice; it was manipulated to fit into practice.

During that period, schemes were largely designed with the flair or natural aptitude of the classificationist. The classificationist received occasional help from intuition. This period lacked to a large extent, guidance from a theory of library classification. Often, there was lack of scientific approach; as a result there was no objectivity in the approach.

The beginning of another stage in the evolution of library classification theory should be considered as an important landmark. This has led to tremendous development in the field of library classification. From about the middle of the early century there was acceleration; Ranganathan in particular, and later his disciples, began to perceive how a fully developed theory could be put together.

The dynamic theory was able to provide a sound methodology for the designing of a scheme for library classification. Various special schemes were produced, some clearly intended for use and based on user's needs, others more experimental in outline. In the United Kingdom

for instance, classification research group was set up. By the time a British enthusiast, Jack Mills, produced a textbook in 1960; it was possible to present principles which had been thought through. This later theory is quite different from the early years when some enthusiasts had looked to the history of science, philosophical principles and logic for inspirational guidance.

In more recent years, the pace of theoretical innovation has slowed; much of what could be argued and demonstrated had so been done by the late 1960s. The theories developed have been accepted much more enthusiastically by some people than by others and, generally speaking, much more enthusiastically in some countries than in others.

Self-Assessment Exercise

Explain the developmental growth of the theory of classification.

4.0 Conclusion

Since the existence of libraries in ancient times, effort have been made to classify books based on certain criteria such as order of acquisition, size of documents, title, colour chronology and subject. The most successful attribute for classifying documents is by subject. This has been proven by the different theories of classification that has emerged.

5.0 Summary

In this unit, you have learnt about the theory of classification. You have also learnt about the progression of the classification theory from the descriptive theory to the dynamic theory. Finally, you learnt about the developmental phases of the classification theory.

6.0 Self-Assessment Exercise

Discuss the theory of classification

7.0 References/Further Reading

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

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Unit 3 Classification Schemes and Its Basic Components

1.0 Introduction

There are several general classification schemes in use. There are also specialized schemes that are used for special collections with in-depth stock but in a specific subject area. It is therefore needful to have a general overview of major classification schemes in order to know the different context to which they can be applied.

This unit will explain classification schemes. It will also discuss the main component of a classification scheme. You will learn about schedule, notation, index as well as its features and qualities. In the subsequent unit, you will be taught about special classification schemes.

2.0 Objectives

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

- explain the general classification schemes
- identify the components of a classification scheme
- discuss the schedule as a main component of a classification scheme
- explain the features and qualities of a notation
- describe the importance of an index to a classification scheme.

3.0 Main Content

3.1 Classification Schemes

The general classification scheme is one which is designed to cover all the subjects. Classification schemes must first list and arrange the principal disciplines of knowledge. It will be useful to consider the manner that subjects are treated in various classification schemes. Three types of subjects exist: simple, compound and complex subjects.

Simple subject deals with the whole main class or with a single aspect of a class. 'Surgery' as a subject treated as part of the 'medical sciences' would be a simple subject. Other examples might be 'politics' or 'the democratic party' or 'political campaigns.'

A **compound subject** is one where two or more simple subjects are combined, or treated equally in a text; an example might be 'cats and dogs' or 'painting and drawing'. Compound subjects are often described as interactions of two or more simple subjects from the same main class. Although in the examples above the simple subjects which are combined come from the same subdivision of their class, compound subjects may also be multi-faceted, such as 'monetary economics in France' or 'campaigning in the democratic party'.

A **complex subject** is one where the combined simple subjects emanate from two or more main classes. Again there are limitless possibilities, but examples might include 'market research in book publishing' or 'surveys and their impact on political campaigning'. With

complex subjects, the two or more subjects which are brought together may not be equal in treatment; they may rather have a relationship to each other, as in 'the impact of income tax changes on the life style of old age pensioners'.

3.2 Components of a Classification Scheme

A classification scheme consists of three main components. These are: the schedule, the notation and the index.

3.2.1 The Schedule

The schedule is perhaps the most important part of a classification scheme. In a schedule, the terms representing the subject content of documents are arranged systematically showing their relationships. A schedule must meet certain criteria and some of them are:

- All major disciplines should be represented if the classification is supposed to cover all subject knowledge.
- The space allocated to each discipline should be approximately proportional to the literature of the field.
- The order of classes should bring all related subjects to close proximity. This is why botany and agriculture should be together because they are related. Similarly, language and literature are in close proximity.
- The schedule must provide space for new knowledge, especially since the frontiers of knowledge are being continually extended.
- In order for the schedule to cover all subject terms, it is necessary to provide a place for each subject term whether simple or complex.
- The two main methods for constructing a classification schedule are the enumerative and faceted methods.

3.2.2 Notation

In order to retrieve documents from the shelves, there is always a notation which is assigned to the subject headings of the document. The notation is a shorthand code representing the various subject headings used in describing the subject content of documents in a collection. The notation is usually made up of letters, numerals, or a combination of both. This is the code assigned to subject terms, which is used in an index or catalogue. It helps in achieving the orderly arrangement as expressed in the schedules.
A notation is an important requirement in a classification scheme, as a poor notation would lead to a complete breakdown of the arrangement of documents. A good notation must be able to accommodate new subjects, be flexible and simple to use.

There are two types of notation – pure and mixed. Generally, a notation uses alphabetical letters and Arabic numerals. Pure notation uses only one type of symbols, either Arabic numerals or alphabetic letters. Dewey decimal classification schedule uses only Arabic numerals for example. Mixed notation on the other hand uses both Arabic numerals and alphabetic letters.

An example of mixed notation is the Library of Congress Classification scheme. The notation is the link between the subject terms in the schedules, which are arranged systematically, and subject terms in the index, which are arranged alphabetically.

Features of a Good Notation

There are certain features a notation must possess in order to perform its functions. These are:

1. A notation must be constructed in such a way that it will be easy to use. A good notation must be:
    - easy for users to write, remember, or type
    - simple
    - brief and
    - mnemonic, that is there should be aids that will make it easy for users to remember, e.g. in Dewey decimal classification – **6** always stands for Africa – **03** for dictionaries. In LC, T stands for technology and G for geography.
2. A notation must be hospitable; it should be able to accommodate new subjects.
3. A notation must leave gaps that are unassigned, which can be used in future, or it could be decimal which would ensure that the notation can be expanded by the use of decimal sub-division.
4. A notation must possess a device for synthesis as this enables the classifier to specify a document.

3.2.3 Index

This is the last component of a classification scheme which lists all the subject terms that have been systematically arranged in the schedules in an alphabetical order. The index enables a user to locate topics, which have been systematically arranged, and also displays the related aspects of a subject, which have been scattered in the schedule.
There are two main types of index. These are **specific** index and **relative** index.

Specific Index lists all subject terms in a straightforward alphabetical order without a regard to the various aspect of a subject term. This type of index is useful when there is a specific entry for each subject term in the classification.

Relative Index on the other hand, gathers together all the aspects of a subject term which are likely to have been scattered in the schedules.

Every classification scheme needs an index as a guide to the place of subjects in the schedules themselves. This is in addition to any subject index which might be provided in a library as a guide to its collection on the shelves. The index to the classification scheme is essentially a guide for the classifier to find the appropriate section(s) of the schedules where the subject concerned may be found. It lists topics, locates them and includes all necessary synonyms. Essentially, index does two things:

- It locates subjects within the systematically arranged classification, and

- It shows related aspects of a subject which are distributed beyond a single class, often due to the problems noted earlier, that were caused from classification by discipline.

The index is an essential tool for the classifier; it shows these relationships and guides the classifier in choosing of possible locations for a work. The published index to a classification scheme is not intended as an index for library users or client; it is intended to be a key or guide to the schedules, rather than to the works on the shelf of the library. It will of course contain entries for all subjects dealt with by the classification scheme; possibly all knowledge will be represented in the schedules to a general scheme and in its index and this is likely to include a significant amount of material that would not be held in any but the very largest of libraries.

4.0 Conclusion

In this unit, you have learnt about the classification scheme and the main components of a classification scheme which are:
Schedule - the subject terms are listed systematically in the schedule.
Notation - this contains the codes assigned to the different subject terms listed in the schedules.
Index - this is an alphabetical arrangement of all the subject terms listed in the schedule. The notation assigned to each subject term is listed against the subject term in the index.

5.0 Summary

What you have learnt in this unit concerns the different subject in classification schemes and the components of a classification scheme.

6.0 Self-Assessment Exercise

List and explain the three main components 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.

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

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Unit 4 Criteria for Workable Classification Scheme

1.0 Introduction

All classification schemes are made up of *classes* or categories. If we browse through any of the widely used general schemes, they appear to be gigantic maps of knowledge. They begin with general works in what is called *a generalia class*. This class is designed to accommodate general collections of essays, multi-topical encyclopedias and other works too wide in scope to be linked with any one discipline; these are works which deal with, or attempt to deal with, all knowledge.

Not all classification schemes can be agreed to be workable or efficient. The ultimate test of all schemes lies in their practical application and in their responsiveness to the most common approach of users. In this unit, we shall therefore discuss the criteria for a workable classification 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 organisation 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.