

Implementation of Various Classification Systems in Library

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Abstract: Organizing library materials cannot be separated from the application of the classification system which is used as a class-based knowledge determination with the aim of facilitating librarians and librarians in retrieval of collections in the library. This study uses the library research method by comparing the classification systems in 5 libraries from 5 different journals. The results of the study indicate that there are different implementation of classification systems depending on the type of library. The classification system used is Dewey Decimal Classification (DDC), Universal Decimal Classification (UDC), Mandala Classification, Classification System Libraries, Department of Orthotics, Prosthetics, Health Polytechnic, Ministry of Health, Jakarta and Archaeological Library Classification System. The conclusion can be used any classification system as long as it still has the same goal, which is to make it easier for librarians and users to find the desired source of information.

Keywords: Dewey Decimal Classification, Universal Decimal Classification, Mandala Classification, Classification System Libraries, Archaeological Library Classification System

1. Introduction

Activities that cannot be separated from organizing library materials are retrieval. The concept of the retrieval system requires the existence of several collections or documents containing information and grouped according to the subject of the collection or document into one and the same group. Information retrieval systems must contain bibliographic data from existing collections so that users can search quickly and accurately. Therefore some information retrieval experts have created tools that can group the subjects of a collection according to the same subject. One of the tools created to classify subjects and maximize information retrieval is the classification system. Choosing the right classification system as a means of retrieval of information on library materials or information is important for libraries. This is useful for users in getting the information needed. In addition, choosing the right classification system also makes it easier for librarians to organize library materials.

There are various types of library material classification systems in Indonesia, such as Dewey Decimal Classification (DDC), Universal Decimal Classification (UDC), Library of Congress Classification, Colon Classification, British Classification Research Group and others [1] whose implementation is tailored to the needs of the type of library. Libraries are growing rapidly from time to time in accordance with the development of people's life patterns, needs, knowledge, and information technology. These developments also have an impact on the "grouping" of libraries based on patterns of life, needs, knowledge, and information technology. The terms "bloated" library become very broad but tend to have a particular specification. Judging from the development of information technology, libraries have developed from traditional, semi-traditional, electronic, digital libraries to "virtual" libraries. Then seen from the development pattern of community life from village libraries, mosque libraries, private libraries, mobile libraries, and so on. Then it is also seen from the development of needs and knowledge that there are currently many emerging terms public libraries, special libraries, children's libraries, school libraries, academic libraries (universities), company libraries, and so on [2]. However, of the many terms and types of libraries, actually based on the nature and class of libraries in general, it is divided into a form of public libraries and special libraries. Where from the two libraries, other terms developed adapted to the way of management, users, objectives, technology used, packaged knowledge, the purpose of the library was established to the processing of different library materials. One of them is the difference in using the classification system.

The class number or library material notation will be the meeting point between the librarian, library users and library materials. The classification system provides the means by which science is organized into easy-to-understand forms. According to Sayers (1918) states that a classification system is said to be good if it meets several conditions, among others, the classification chart is universal, meaning that it covers all areas of science; detailed in dividing scientific fields; systematic, namely dividing the field of knowledge into sub-fields that are part of the sub-organization of the field; the arrangement of the chart is flexible following the development of science; classification chart using simple and easy to remember notation; each has an index which refers to a place;

and has a supervisory body in charge of monitoring and overseeing the development of science [3]. Thus the classification chart is always up to date.

2. Method

The author uses this type of research library research, which is a series of activities relating to the library data collection method [4]. Another definition of the library research method is research that uses methods to obtain information data by placing existing facilities in the library, such as books, magazines, documents, records of historical stories [5]. The author uses a content analysis approach model, namely this research is in-depth discussion of the content of written or printed information in journals, especially regarding the implementation of the classification system in libraries. In a research library, data sources consist of primary data sources and secondary data sources, among others:

1. Primary data sources. Primary data sources, namely data obtained directly from research subjects as the source of information sought. This data is also known as first-hand data or data directly related to the object of research. In this case the data used are journals regarding the implementation of the classification system in various types of libraries.

2. Secondary data sources. The secondary data source is data obtained through other parties, not directly obtained by the researcher from the research subject. In this case, the secondary data sources are in the form of library research methods books, classic classification books, and classification theories.

Data collection techniques are the most important step in research, because the main purpose of research is to get data. Without knowing data collection techniques, researchers will not get data that meets the established data standards [6]. In this study, the data collected are primary data in the form of journals whose libraries adopt the DDC classification system, UDC, mandala, the library classification system for orthotic prosthetic polytechnic health department of the Health Ministry of Jakarta and the archeology library classification system.

In order to understand these data, certain techniques can be used, namely the most commonly used technique is content analysis, there are several definitions of the concept of content analysis, namely: 1) Barelson in [7] defines content review as research techniques for the purpose of describing objectively, systematically and quantitatively about communication manifestations, 2) Krippendorf (1993) explained that content review is a research technique that is used to draw replicative and authentic conclusions from data on the basis of its context [8], and 3) Holsti in [9] states that content review is any technique used to draw conclusions through an attempt to find the characteristics of the message, and it is carried out objectively and systematically. In this study, content analysis is according to the last meaning used [10].

3. Result & Discussion

1) Dewey Decimal Classification

Generally, libraries in Indonesia use the DDC (Dewey Decimal Classification) classification system as a role model in classifying library collection materials. DDC includes the entire knowledge made in a systematic and orderly manner. The division of knowledge starts from general to specific, thus the DDC consists of 10 disciplines, 100 divisions, 1000 sections, and 10,000 subsections. Classification of collections at the Office of Library and Archives of Central Aceh Regency is carried out by librarians who are assigned to the service section of the Development and Development of Library Materials in the Collection Development, Processing and Conservation Section of Library Materials. The collection classification system at the Office of Library and Archives of Central Aceh Regency uses the DDC classification system [11].

The DDC classification system is a library classification system created by Melvil Louis Kossuth Dewey in 1873 and first published in 1976, namely a pamphlet entitled *A Classification and Subject Index for Cataloging and Arranging the Books and Pamphlets of a Library*. The first edition was published with introductory words, charts for the 10 main classes divided decimally into 1000 categories numbered 000-900, as well as an alphabetized subject index, and since then it has been heavily modified and continuously developed until the appearance of DDC Edition 23. According to [12], the Dewey Decimal Classifications (DDC) classification system is a classification based on disciplines, not just a grouping of collections by subject. The division of main and sub-classes based on academic discipline or field of study, not by subject. The result is that it is possible for the same subject to obtain a class place from one. For example, the subject of family may be classified into sociology, religion, ethics, law, and so on.

DDC is divided into 10 main classes (The Ten Main Classes) or First Summary using title numbers, but in practice it is always written in notation form with three numbers and cannot be less.

Table 1. Dewey Decimal Classification

000-099	Generalities
100-199	Philosophy & Psychology
200-299	Religion
300-399	Social Science
400-499	Language
500-599	Natural Sciences and Mathematics
600-699	Technology and Applied Science
700-799	The Art, Fine and Sport
800-899	Literature and Rhetoric
900-999	Geography and History

Another feature of DDC notation is its hierarchical structure, meaning that DDC notation reflects a hierarchical arrangement of classifications. Notation reflects the relationship between each unit of knowledge as well as the elements of its subordination. Each main class is divided into 10 divisions. The second position of the notation uses the concept of division. In this position, 0 is used for general works for the whole main class, while 1-9 for subclasses. Thus 300 are used for general works from the social sciences and 310-390 for the social sciences division, for example 330 economics. Each division is further divided into 10 sections. This section is indicated by a third digit that changes from three digit notation, for example:

- 370 Educations
- 371 General educations
- 372 Primary educations
- 373 Secondary educations
- 374 Adult educations

The Dewey system allows for more specific and detailed division of subdivisions by adding a decimal notation. The decimal point is always affixed to the third digit, while there is no need to add a dot after it. After the period, the extension of the notation can be done; the Dewey notation never ends with a zero after the decimal point, because the terminal zero after the decimal point has no arithmetic value. The following is an example of a hierarchical structure in classification notation and categories:

- 500 Pure Sciences
- 510 Mathematics
- 516 Geometry
- 516.3 Geometry of analysis
- 516.37 Metric differential geometry
- 516.372 Euclid

The development of the classification from general to specific is indicated by the addition of a new digit at each division level.

2) Universal Decimal Classification

UDC is a general classification scheme covering all branches of science. In the subdivisions of the subject, the breakdown goes from general to specific. Divisions within UDC are created on the principle of mutual exclusive class. UDC also attempted to organize and collect all the related classes. Due to its original conceptual purpose and user demands and other developments, UDC differs from DDC in several aspects. As a means of indexing UDC have many advantages over just a shelving scheme for storing books. At UDC the details leading to the division of the subject are much more numerous than that of DDC

The UDC is implemented at the Center for Library and Dissemination of Agricultural Technology, Ministry of Agriculture, Bogor. They also made a special guidebook for the agricultural library development series number 20 with the title Technical Guidelines for the Use of UDC Charts which aims to complement technical guidelines made in the context of library resource management activities [13].

Table 2. Universal Decimal Classification

0	Science and Knowledge. Organization. Computer Science. Information Science. Documentation. Librarianship. Institutions. Publications
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1	Philosophy. Psychology
2	Religion. Theology
3	Social Sciences
5	Mathematics. Natural Sciences
6	Applied Sciences. Medicine, Technology
7	The Arts. Entertainment. Sport
8	Linguistics. Literature
9	Geography. History

Knowledge organization within UDC is discipline-based. This means that concepts are entered and placed in the field in which they are studied. Certain features are usually implemented in UDC by re-using the same concept in various combinations with the main subject, for example codes for common language auxiliary languages are used to obtain numbers for ethnic groupings, individual languages in linguistics and individual literature. Alternatively, codes of place helpers, for example (410) England, uniquely representing a British concept can be used to express 911 (410) the geography of the British Region and 94 (410) History of Great Britain. UDC only uses one number for the main subject without an additional 0 as is the case with DDC. So in UDC, social science gets the notation 3 while in DDC it is 300. The divisions and subdivisions of the main class are formed with the additional digit, for example 63 agriculture, 633 perennials. All numbers are read in decimal. A decimal point is added after the third number (digit), for example 633.1 cereals, corn, grain. Here is an example of a hierarchy in UDC.

5	Math. Natural Science
53	Physics
539	Physical properties of matter
539.1	Nuclear physics. Atomic physics. Molecular physics
539.12	Elementary and simple particles
539.120	Theoretical problems of elementary particle physics
539.120.8	Strong interactions, including experiments
539.120.81	Quantum chromo dynamics
539.120.811	Lattice QCD

UDC is a faceted classification so that it is able to combine various subjects and perform syntheses and concepts with various additional signs.

3) Mandala Classification

The application of a local classification system is used in the *Gelaran Indonesia Buku Yogyakarta* Library. *Gelaran Indonesia Buku* Library is a community library based library consisting of individuals who have an interest in writing, arts and literature in Yogyakarta. In 2006, the Indonesian Book Library used the Youth Pledge classification system. The Youth Pledge classification system is based on the contents of the Youth Pledge so that there are three main classes, namely language, nation and homeland. The application of this classification system aims to make it easier for managers to manage collections at the *Gelaran Indonesia Buku* Library [14].

In 2017, there were additional types of collections at the *Gelaran Indonesia Buku* Library. This changed the Youth Pledge classification system to the Mandala classification system. The founders of the Indonesian Book Library, Gus Muh and Taufik Rehzan, pioneered the application of the Mandala classification system. Based on this, the Indonesian Book Library does not use the classification system that is usually used by other libraries. The Mandala classification system consists of four main classes, namely *basa, rasa, yasa and masa*. The application of the Mandala classification system is used to facilitate collection management by volunteers.

The *Gelaran Buku Indonesia Mandala* Library is based on the thoughts of *Danghyang Nirartha* in *Babad Dwijendra Tattwa*. According to [15] *Babad Dwijendra Tattwa* contains activities, trips made by *Danghyang Nirartha* from Majapahit to Bali, Lombok and Sumbawa, family tree, and *Danghyang Nirartha's* role as author and royal priest. On the journey from Majapahit to Bali, *Danghyang Nirarta* spread the teachings of Hinduism, built temples and created a community. *Danghyang Nirartha* in creating a community also shares knowledge with the community, one of which is about *Mandala*. The Mandala classification system consists of four main classes, namely *basa, rasa and masa*. The four main classes are given a letter notation which represents the subject of the collection and consists of three letters. The following is a table of the division of subjects into four main classes in the *Mandala* classification system.

Table 3. *Mandala* Classification

1	Basa	Language (BAH) Internet (NET) Dictionary (KAM) Pers/Media (MED) Guide (PAN) Ideology / Philosophy (FIL) Mantra (MAN) Science & Mathematics (SNM) Programming Language (PRO) Law (HUK)
2	Masa	Biography Period (BIO) Chronic (KRO) History (SEJ) Region (REG) Politics (POL) Economics (EKO) Social (SOS)
3	Rasa	Religion (AG) Culture (BUD) Aesthetics (EST) Psychology (PSI) Fine Arts (SRP) Spiritual (SPI) Culinary (KUL) Literature (SAS)
4	Yasa	Archeology (ARK) Architecture (ARS) Environment (LKG) Sports (OR) Education (PND) Agriculture/Animal Husbandry (PRT) Technology (TEK) Military (MIL)

The main class of bases contains subjects related to the text being read and contains the truth value, namely *basa*. The main class of the *masa* contains subjects related to past events, present times and future times and contains the sacred value of *kala*. The taste class in the Mandala classification system contains subjects related to imagination, creativity and religiosity of the value. The main *yasa* class contains subjects which are a form of the result of culture. Subjects belonging to the *yasa* class have immortality value.

The application of a combination of letter notations to indicate a dial number. The notation in the Mandala classification system contains the main class, the location of the shelf, the language used in the book, the year of publication, the first three letters of the author's name, the first two letters of the book title. As for foreign languages, the translation uses a letter notation, namely GLOB (global). While the collection is in Indonesian, the regions use letter notation, namely LOK (local). Examples of the use of notation in the Mandala classification system in the complete *Gelaran Indonesia Buku* Library.

Title of Book : *Api Paderi*

The year : 2010

Author : Moh. Solihin

Subject : Literature

Then the classification notation is

RAS/SAS/SEW LOK 2010 MAP M

Information

RAS : Taste (First class)

SAS : Literature (shelf category)

SEW: Sewon (Warehouse)

LOK: Local Indonesian / Regional

MAP : (M) first name of the author, (AP) book title

The notation that is in accordance with the Mandala classification system in the above collection indicates the subject of the collection, the location of the collection and a brief representative of the identity of the book collection. Notations in the Mandala classification system are made without adding numeric notations as in the Dewey Decimal Classification. Notation using the Mandala classification system is formed simply to make it easier for managers to classify collections in the *Gelaran Indonesia Buku Library*.

4) Classification System Libraries

The Library of the Department of Orthotics and Prosthetics, the Health Polytechnic of the Ministry of Health, Jakarta, is a special library that has a large collection of orthotic prosthetics and sciences related to the service, manufacture, measurement and fitting of aids and organs of the human body. With this collection of library materials, the library tries to make a scientific grouping system independently so that it is easily found by students [16].

Table 4. Classification System Libraries Department of Orthotics, Prosthetics, Health Polytechnic, Ministry of Health, Jakarta

I	Anatomy
II	Assesment
III	Biomechanics
IV	Refrence
V	Engeneering
VI	General
VII	Neurology/Pathology
VIII	Orthopedics
IX	Orthotics
X	Prostetics
XI	Rehabilitations

In addition to the different classification charts, further determination of the serial number code in the main book consisting of code A (the book can only be read in the library), code B (the book can be borrowed for a maximum of two days), code C (the book can be borrowed for a maximum only three days). As an example:

Spinal Orthotics with classification number IX.11.C.02

IX : Orthotics

11 : Orders in the Master Book

C : book is a maximum of 3 days

02 : library only has 2 copies

The library only determines the main subject, so that the subject is less in-depth and does not vary. This classification system has not met the criteria of a good classification system [3], such as not universal, not detailed, not flexible, does not have an index and does not have a supervisory body.

5) Archaeological Library Classification System

Librarians at the Yogyakarta D.I Archaeological Center in the period 1980 to 1993 have tried to use the DDC Edition 18 classification system published in 1971. The class number on the 18th edition of DDC has not yet accommodated classification subjects in existing historical fields. Some of the obstacles experienced by librarians in using DDC 18th Edition in classifying the archeology field, for example the classification in history and archeology is still general in class 900, there is no specific classification in the field of archaeological specifications, for example the fields of epigraphy, archeometry, ethnoarcheology, which are still correlated with science. archeology, the existence of archaeological research reports published cannot be specifically accommodated in

class 000, and the classification of a collection of papers published by the Indonesian Archaeological Association, for example Archaeological Scientific Week, Archaeological Scientific Discussion, Archaeological Research Result Evaluation if classified by DDC classification will not become one group. This is because every year the holding of an archaeological scientific meeting will be a different subject of the main study at the meeting [17].

At the Archaeological Research Results Evaluation forum in Palembang on 11-16 October 1994, the Archaeological Library Classification System which consists of 14 (fourteen) main classes was explained.

Table 5. Archaeological Library Classification System (SKPA)

01	Prehistoric archeology
02	Classical Archeology
03	Islamic Archeology
04	Archeometry
05	Ethnoarcheology
06	Case Study
07	Method / Theory
08	Culture
09	Publishing Periodically
10	References
11	Collection of Papers
12	History
13	Reports
14	Officials

Source: Collection of Papers of EHPA Palembang, 11 - 16 October 1994 in [17,20]

Examples of implementing SKPA are:

10 References

10.5 Archaeological Research Report

The application of the Archaeological Library Classification System (SKPA) at the Archeology Center of DI Yogyakarta has several obstacles, including overlapping main class divisions, incorrect sub-class division, classification inconsistencies, and the emergence of new classification numbers, incorrect change of main class subjects, and the loss of several subclasses in the application of SKPA. With the development of the archaeological discipline, it is necessary to change or add to the main and sub-class classes in the SKPA chart in accordance with the development of archeology.

4. Conclusions

Classification has an important role for librarians and users. Classification in the library aims to facilitate the arrangement, tracking of collections and statistics of circulation services. In the classification, there are science subjects and collection shelf locations that can be a guide for users to search for collections. Independent or special classification systems have actually been widely used in various libraries. For example, the United States Library of Congress uses letter notation or better known as the Library of Congress System, and the Library of the Agency for the Study and Application of Technology which adopts the National Technical Information Services (NTIS) classification system applied in the U.S Department of Commerce Library. In fact, most of the application of the independent classification system is in the processing of the thesis collection, thesis, dissertations, or research reports in the university library. This is commonly used by libraries, due to the type of collection that requires special treatment in organizing collections.

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