

CATALOGUING AND CLASSIFICATION-THE EXPERIENCE AT INSTI-CSIR

Lucy P. Dzandu)

Assistant Librarian, Institute for Scientific and Technological Information
(INSTI) of CSIR

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Abstract

The paper looks at the activities of the various sections of Institute for Scientific and Technological Information (INSTI) Library, with emphasis on the Cataloguing and Classification section.

As an automated Library, the software in use is CDS-ISIS (Computerized Documentation System - Integrated Set of Information Systems). Other cataloguing tools used in the section include the Sears List of Subject Headings – for assigning the appropriate subject headings; and the Universal Decimal Classification (UDC) scheme – for determining the classification number. The holdings of the Library are listed in the Catalogue database.

The paper also highlights pertinent aspects of cataloguing such as original cataloguing, copy cataloguing, descriptive cataloguing, and subject cataloguing. Some of the problems identified with cataloguing and classification have been discussed.

Suggestions have been offered towards improving upon the weaknesses identified in the cataloguing procedure in Institute for Scientific and Technological Information (INSTI) of the Council for Scientific and Industrial Research (CSIR).

Introduction

The Institute for Scientific and Technological Information (INSTI) of the Council for Scientific and Industrial Research (CSIR) has the mandate to develop a national capacity for the efficient and effective provision of scientific and technological information to Ghanaian society through the publication and dissemination of the results of scientific and

technological research in appropriately packaged form.

One of the most vibrant divisions of this Institute is the Library and Documentation Division. This division is responsible for the collection, processing, storage and dissemination of scientific and technological information, including the results of indigenous scientific research and other

relevant scientific and technological information generated elsewhere for the benefit of all.

Organization of INSTI Library

The Library and Documentation Division is sub-divided into five (5) sections namely: Collection Development; Cataloguing and Classification; User Services; Information Technology; and GAINS (Ghana Agricultural Information Network System).

Collection Development Section

The Collection Development section acquires materials for the Library and also manages the library's collection.

The acquisitions comprise monographs, serial titles and theses. These acquisitions come in the form of purchases, donations/gifts, exchanges, and legal deposits. The monographs are most often purchased on the open market or they come as donations. The serial titles are mainly exchanges and donations while the theses come as legal deposits. New titles of serials and theses received are processed and entered into the Serial and Theses databases respectively.

Inter-library loan is also handled by the Collection Development section. Some databases managed in this section are Hilman (High Level Manpower); Respro (On-going Research Projects); Science and Technology Abstracts; and Ghana Science Abstracts (GHASAB).

User Services Section

The User Services section enables information from the library stock to be disseminated to the end-user.

Services rendered in this section include manual information retrieval for research scientists, students, and the general public, which involve the use of tools such as the card catalogue, books and other reference sources. There is also electronic information retrieval such as the use of Internet databases and CD-ROM searches, using The Essential Electronic Agricultural Library (TEEAL). Other local databases for information storage and retrieval are the Ghana Agricultural Research Information (GHAGRI) and the Union List of Serials (ULAS).

Users whose requests cannot be satisfied are referred to other libraries that have the appropriate resources to satisfy their information needs. User education, which involves exposing new users to the stock of the library and how to identify relevant documents and access the information in them, is vigorously practiced.

Cataloguing and Classification Section

In-between these two functions of the library service lies the Herculean task of organizing the library materials, which involves cataloguing, and classification.

One could imagine what would happen if one hundred books, newly acquired for a library, were deposited in a Reference section without any form of organization! It would become a very tedious task retrieving the required information from any of these books. Thus, all materials received into a library are meticulously processed in order to make the information in them easily retrievable.

This section is solely responsible for processing all library materials received into the library.

Other activities undertaken in the section include binding of newspapers and book repair, as well as making of pamphlet boxes for the library's magazines and journal articles.

Information Technology Section

This section is responsible for the maintenance of information technology equipment and ensuring that all the computers work effectively to enhance the activities of the entire Institute. The section also ensures the effective functioning of the Internet services to enhance searching. A cyber café that enables the users to browse the Internet and to send and receive electronic mails is also under the direct control of the Information Technology section.

GAINS Section

The Ghana Agricultural Information Network System (GAINS) aims at revitalizing the library and information system in the agricultural sector. The rationale is to make information more accessible to research scientists, policy makers and extension agents to support sustainable agricultural development.

The activities of the section are organized around strengthening libraries and information centers of the network, providing information on demand, and promoting contact and exchange of experiences.

Purpose of the Study

Generally, the purpose of this study is to assess the activities in the various sections of the Library. Specifically, the basic aim is to create awareness among librarians

and library technicians on how cataloguing and classification is done in INSTI.

Having studied the activities of the section and some of the problems encountered in the execution of the job, the writer felt the need to come out with a paper to document the activities of the section and also share the experience at INSTI with other colleagues.

The paper seeks to study the process of organizing the library materials in order to make them accessible to the library users, the various cataloguing tools or reference books in use, the library catalogue, and the library software being used.

It also attempts to discuss some of the problems identified in relation to the activities of the section, and to make recommendations or suggest solutions for improvement.

Methodology

The methodology used included observation, interviews and documentary sources.

The author studied the input sheets designed for the purpose of cataloguing, and also the card catalogues to observe the various access points and other bibliographic information needed to identify a material. In addition, the various reference tools being used were examined to see how current they are. The library catalogue was observed to see the number of books received into the library; and the catalogue database was accessed to see the number of records entered.

The library staff of the section were interviewed to get information on the state

of activities in the section. The author asked the librarian when the library was automated. This information would help the author to know when the library started using the CDS ISIS software. The library technician was asked about some of the advantages as well as the problems associated with the use of this software. His views were also sought on the appropriateness of the various reference tools used for the cataloguing. Also, the data entry clerk was interviewed on the state of the Catalogue database with reference to updating of the records, as well as the availability of back-ups of the catalogue on diskettes and CD ROMs. The responses to these questions would enable the writer to have more knowledge about the activities in the section.

Finally, documentary sources such as *CSIR Handbook* and *CSIR Annual Reports* were consulted. The information gathered would help the author to know the mandate and objectives of INSTI as well as the extent of activities carried out in the various sections of the Library and Documentation Division over the years.

Cataloguing of Documents

Good cataloguing practices make library operations very efficient. Cataloguing is the process of organizing library materials and making them accessible to library users (Kao, 1995). People use many diverse approaches in retrieving library materials; and a good cataloguer makes it possible for users to find materials easily irrespective of the approach that is applied. The most wonderful collection is useless if the materials are not easily accessible to users. Thus, cataloguing is a major tool in

information management, especially in information organization, bibliographic control, and information retrieval and dissemination. To facilitate the cataloguing process and ensure that uniformity exists from library to library every time an item is catalogued, guidelines and codes have been designed and adopted.

Generally, cataloguing is done in two ways—original cataloguing and copy cataloguing. Original cataloguing means that the cataloguer does all the processes of cataloguing locally. Copy cataloguing on the other hand entails copying the necessary information from a source that contains works already catalogued, which avoids duplicating the cataloguing processes of the same work. Original cataloguing is further divided into two parts – descriptive cataloguing and subject cataloguing.

Descriptive cataloguing is the first step of the cataloguing process and it means describing the material physically, and determining the access points. Subject cataloguing, the second step of the process, comprises assigning subject headings to the materials and then assigning classification numbers.

Automation of INSTI Catalogue

Automation simply refers to the computerization of the library functions such as ordering books, cataloguing books, and checking books out.

INSTI Library is automated; hence computerized cataloguing is what pertains in the section. With advances in Information Technology, several Machine Readable Cataloguing (MARC) formats have been designed. Even though

cataloguing rules are the bases of these formats, computerization has introduced some deviations in the presentation of the cataloguing information (Hevi, 1996).

Several library softwares exist in information management. The software in use at INSTI is CDS-ISIS (Computerized Documentation System – Integrated Set of Information Systems). CDS-ISIS software is structured, generalized database management software. It is a menu-driven system and has been developed for bibliographic information (Sam and Agyeman-Serebo, 2000). To successfully use and manage databases with CDS-ISIS, the structures defined by the software must be strictly adhered to.

A database is a set of machine-readable records that are standardized in format. Each record is made up of fields. A field contains data elements relating to a single unit, for example author, title or imprint. The database that has been designed for the computerized cataloguing in INSTI is the Catalogue database.

Documents are catalogued making reference to the *GHASTINET* (Ghana Scientific and Technological Information Network) *Manual for Bibliographic Description*, and classified using the *Universal Decimal Classification* (UDC) schedule.

The *GHASTINET Manual for Bibliographic Description* is a local manual that provides guidelines for computerized cataloguing using CDS-ISIS software.

Procedure for Data Entry

Input sheets have been designed which are used for manual cataloguing before the data entry into the catalogue database. The art and science of cataloguing enjoins the cataloguer to process the document meticulously. The information in the book could even be said to be dissected in order to come out with every bibliographic description that is required in cataloguing. The elements of a bibliographic record include author, title, imprint, collation, notes, descriptors or keywords among others.

Original cataloguing is what prevails in INSTI. This means that the cataloguer performs all the procedures to completely catalogue the material. In performing the original cataloguing, the cataloguer must determine the information needed by carefully reading the document that is being catalogued. There is the need to find out exactly how the information is organized in order to enter that information into the database.

Descriptive Cataloguing

The fields considered during cataloguing and data entry in INSTI include the following:

- a. **Accession number** – this is a unique number given to each document received into the library.
- b. **Types of record** – all documents are classified under Monographs, Serial articles, or Reports. The cataloguer has to identify which of these is applicable to the document in hand.
- c. **Literary indicator** – this is used to determine the literary form of the

documentary unit being described; and it includes Conference, Dictionary, Numerical data, Thesis/ Dissertation, Summary/Abstracts, Maps, and Bibliography / References.

- d. Authorship** – this field considers the name, the role, and the affiliation (for personal authorship); and then the main body, sub-body, and place / country (for corporate authorship). A circumflex sign is used. An example of data entry into this field is:

^aPersonal author^brole^caffiliation.
For example:

^aMILLS, F.^bed.^cUniversity of Ghana^legon. Or:

^aMain body^bSub-body^cPlace, Country. For example:

^aCSIR^bINSTI^cAccra, Ghana.

A percentage sign (%) is used where there is more than one author.

An example is:

^aDONKOR, L.^bed.^cINSTI, Accra % ^aMILLS, F.^bed.^cUniversity of Ghana, Legon.

(It must be noted that surnames are entered first followed by a comma, and then the other names).

No spaces are left before or after the sub field delimiters ^a^b^c and the % sign (Akinyosoye, 2002).

- e. Title** – the title is entered as it appears on the document

- f. Imprint** – this field is entered as:
^cCity^pPublisher^dDate. An example of this is:

^cNew York^pJohn Wiley^d1998.

- g. Collation** – this field describes the physical extent of the document such as pagination, the number of volumes, presence of illustrative material etc

- h. Descriptors** – this field considers the use of the thesaurus to determine keywords to help in the information retrieval. The thesauruses used are Agrovoc (for agriculture related documents), Spines (for science related documents), and Macrothesaurus (for social sciences related documents). The descriptors are written in upper cases and enclosed in tags. Examples of these are <SCIENCE><INSECT>.

Other fields simply copied from the documents are sub title, country of origin, ISBN, and edition statement.

Subject Cataloguing

Subject cataloguing is divided into two parts. One is to assign subject headings to the materials by using either *Sears List of Subject Headings* or *Library of Congress Subject Headings*. The other part is to assign a classification number to the material using an appropriate classification schedule. The reference tools used for subject cataloguing in INSTI are *Sears List of Subject Headings and Universal Decimal Classification Schedules (UDC)*.

Subject Headings

The purpose of assigning subject headings is to list all the materials on a given subject under a uniformed term, so that users will

be able to identify not only all materials on a topic in the library, but also find them side by side on the shelves. In determining what subject headings to assign, the cataloguer has to first determine what the material is all about by studying the table of contents and the material in general.

Use of the Sears List of Subject Headings

After the subject has been determined, the *Sears List of Subject Heading* is consulted to find the uniform term, which then becomes the Subject Heading. Besides the terms, different kinds of references are given to guide users for more related materials. These include "USE" reference, which instructs the users to the chosen terms; "SA" (See Also) reference, which lists more related terms; "BT" (Broader Topics); "NT" (Narrower Topics); "RT" (Related Topics); and "UF" (Used For) reference, which is the opposite of the "USE" reference.

Classification at INSTI

Classification refers to assigning class numbers to documents so that materials pertaining to the same subject are put side by side on the shelves, making it more convenient for the users to get the materials when searching the stacks.

To classify a document, one has to know exactly to what subject field the material belongs by carefully examining the table of contents, preface, or even the text of the material. Unlike the fact that several subject headings can be assigned to one document, only one classification number is given to a document. If an item deals with several subjects, the dominant one is used. After the subject matter is determined,

one then consults the classification schedule to pick the number or notation that describes the subject matter. Different classification systems have been designed for adoption by different libraries.

Use of the Universal Decimal Classification scheme

The *Universal Decimal Classification* (UDC) scheme has hierarchical divisions; and by this principle, knowledge is divided into 10 classes. Each of the 10 theoretical classes or 9 occupied classes is in turn subdivided and each sub-division is further divided until the minutest detail is obtained. Thus, the more detailed the sub-division, the longer the number that represents it, this being made possible by decimal notations.

The 10 main classes are:

- 0 - Generalities
 - 1 - Philosophy, Psychology
 - 2 - Religion, Theology
 - 3 - Social Sciences
 - 4 - vacant
 - 5 - Mathematics and Natural Sciences
 - 6 - Applied Science, Medicine, Technology
 - 7 - The Arts, Recreation, Entertainment
 - 8 - Language, Linguistics, Literature
 - 9 - Geography, Biography, History.
- (Class 4 {vacant} was cancelled in 1963 to make room for future developments. Its subject - Linguistics was merged into class 8 with Literature).
- Using Class 6 (Applied Science, Medicine, Technology) to demonstrate and explain the scheme, the sub-divisions of this class are:
- 61 - Medical Science
 - 62 - Engineering Technology in general
 - 63 - Agriculture and related science
 - 64 - Housekeeping, Home Economics

65 - Management and Organization of Industry

66 - Chemical Technology

67 - Various Industries, Trades and Craft

68 - Crafts and Finished Articles

69 - Building (Construction) Trade and Materials.

A further sub-division of 63 (Agriculture and related sciences) becomes:

631 - Agriculture in general

632 - Plant damage, pests and plant protection

633 - Field crops and their production

634 - Horticulture generally

635 - Garden plants, gardening

636 - Animal husbandry, livestock rearing

637 - Dairy produce, meat, animal produce

638 - Keeping, breeding and management of insects and other arthropods

639 - Hunting, fishing, fish breeding

A breakdown of 633 (Field crops and their production) would be:

633.1 - Cereals, grain crops

633.2 - Pasture grasses

633.3 - Forage grasses

633.4 - Edible roots and tubers

633.5 - Textile and fiber plants

633.6 - Sugar and starch plants

633.7 - Beverage plants.

Finally a breakdown of 633.1

(cereals, grain crops) would be:

633.11 - Wheat

633.13 - Oats

633.15 - Maize

633.17 - Millet

633.18 - Rice

Thus, from the broad subject "Applied Science, Medicine and Technology", a specific classification number – 633.18 is assigned to rice; and all materials closely related to this would be shelved together,

as they would be labeled on the spine with the classification number.

The process of cataloguing becomes complete after the document has been described physically and access points determined (descriptive cataloguing), assigned a subject heading, and finally assigned a classification number (subject cataloguing).

With the completed process, documents can be easily retrieved from the shelves for users who need information from these documents.

Peculiar Problems with Cataloguing and Classification at INSTI

Double data entry

A peculiar problem with cataloguing in INSTI is the possibility of entering the same information into the database more than once. Ideally, there is the need to first check if the title already exists in the database anytime new data entry is to be made. Some software indicates the existence of the author or title being entered if it is already in the database. The CDS-ISIS software (used in INSTI) falls short of this feature; and unless a search is made by author or title, the cataloguer may enter a document with the same title by the same author more than once. With some other software, as soon as one begins to enter the author/title, an indication is given if it already exists so that if all the other bibliographic records in the document were the same as the one already in the database, a repetition would be avoided. This shortfall in the ISIS software is confirmed by Yapa (1997) who describes the perception of some Sri-Lankan librarians on CDS-ISIS as a complicated, difficult and non-user friendly software.

Fusion of author/editor

In reference to the *Ghastinet manual for Bibliographic Description*, data entry for the author field should take the form:

^aPersonal author^brole^caffiliation or Institution. An example is:

^aMILLS, F.^bed.^cINSTI, Accra.

The assumption here is that the author is the editor as well.

When it is not indicated that the work was edited, the ^bed. is left out. A weakness that has been identified with this format is the occurrence where the work was authored by one person and edited by another. Some documents have the authors different from the editors. Meanwhile, no room has been given for names after the ^b delimiter as it should always be entered as ^bed. (for editor) or ^bcomp. (for compiler) as the case may be. The problem arises, as the cataloguer has to use his/her discretion to enter this field, which may result in non-uniformity in the cataloguing process.

Inefficient networking system

The networking is not very effective. There is no central computer where everyone can make an input into the central catalogue database. In addition, there are a lot of databases all hosted on one computer and this results in frequent crashing of the databases.

Lack of expertise

The library lacks the expertise that can put the Catalogue database on the Internet. As such users do not know the holdings of the library and cannot access the information unless they come to the Institute.

Lack of current editions of working tools.

The cataloguing tools in use are not current. The *Sears List of Subject Headings* was published in 1972. The UDC schedule, published in 1985, has many limitations, as it does not include modern concepts in science and technology. The thesauruses were published in 1995. The implication is that new subject areas are not covered hence current terminologies are not available. It thus becomes extremely difficult at times to assign subject headings, descriptors / keywords and classification numbers to certain documents and this impedes the progress of work.

The Way Forward

Need for copy cataloguing

A move away from the normal practice of original cataloguing to copy cataloguing would be a move in the right direction.

In copy cataloguing, a short cut is taken whereby the cataloguer copies the cataloguing information that is already completed by someone else from another library. According to Kao (1995) copy cataloguing is very appropriate in automated libraries where the needed cataloguing information can be found from the database of another participating library. It is a widespread practice and saves personnel time and energy, resulting in speedier service.

Cataloguing information used in copy cataloguing can be acquired from different sources; the most extensive and commonly used source coming from the Library of Congress in book form or on CD-ROM disk.

Need to subscribe to L.C. Cataloguing Records

INSTI Library, as an automated one, could subscribe to the Library of Congress Cataloguing records. With the subscription to the Library of Congress cataloguing records, there would no longer be the need to do a detailed manual cataloguing using input sheets before entering the information into the catalogue database. Since most of the new acquisitions would have been catalogued already by some other cataloguer at the Library of Congress or perhaps, at another library, the most appropriate thing to do is copy cataloguing. In this vein, the resources that go into the making of the input sheets would be reduced and put to another use for the benefit of the Library and the institute at large.

Need to separate author from editor

On the rule of data entry into the author field which is supposed to take the format: ^apersonal author^brole^caffiliation, it should be possible to change the rule in the rare cases where the author is different from the editor. In such cases, entry should be under both author and editor as they are both primarily responsible for the existence of the work. Thus, the delimiter ^b should be role/name; an example of data entry in this field being: ^aMILLS, F.^bed. ANKRAH^cINSTI, Accra.

Need for current editions of cataloguing tools.

There is the urgent need to acquire new editions of the working tools to enhance cataloguing and classification.

Current editions of the *Sears list of Subject Headings* are available on computer tape;

and a subscription to the tape through the Wilson tape Database Licensing Service could be a way forward. An alternative is to use the *Library of Congress Subject Headings*. This is very comprehensive, and a new edition is published annually. Besides the print edition, a microfiche edition is also produced quarterly for subscribers. The latest editions of the UDC schedules and the thesauruses are also available and can be procured from their publishers.

Need for a more efficient networking system

Effort should be made to make the system more efficient. The computers could be networked to give easy access. More computers could be acquired so that too many databases would not be hosted on one computer. In addition, there should be frequent back-ups as a way of preventing databases from crashing. The databases could also be copied on Compact Discs as a means of storage.

Need for more expertise

It should be possible to engage the services of a Systems Analyst who would put the Catalogue database on the Internet and ensure that it is always updated to reflect the holdings of the library.

Conclusion

Proper cataloguing is important, challenging, interesting and rewarding. The cataloguer processes materials and follows through with the procedures that ensure that the materials get to their proper locations on the shelves.

The paper has reviewed cataloguing and classification as it pertains in INSTI Library.

The procedures for cataloguing and classification have been discussed with reference to the various cataloguing tools used in the Library.

The weaknesses within the system in relation to the cataloguing tools have been elaborated.

As a way forward, suggestions have been made to address some of the problems that have been identified.

It is hoped that some of the suggestions, if taken into consideration, would help in making cataloguing and classification in INSTI speedier, more interesting, and less complicated.

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