DETERMINING THE EFFECTIVENESS OF A CARD CATALOGUE AS AN INFORMATION RETRIEVAL SYSTEM: A STUDY OF THE NATIONAL VETERINARY RESEARCH INSTITUTE LIBRARY CATALOGUE

BY

MOMOH SIDIKU

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MASTER OF LIBRARY SCIENCE

Department of Library Science
Faculty of Education
Ahmadu Bello University
Zaria

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DECLARATION

I hereby declare that this thesis has been written by me and it is a record of my own research work. It has not been accepted in any previous application for a higher degree. Equally no part of this work may be reproduced or transmitted in any form or by any means without the expressed permission of the author. All sources of information used in this research are properly acknowledged by means of reference.

CERTIFICATION

This thesis entitled Determining the effectiveness of a card catalogue as an information retrieval system: A study of the National Veterinary Research Institute Library Catalogue, meets the regulations governing the award of the degree of Master in Library Science of A.B.U., and is approved for its contribution to knowledge and literary presentation.

Dr. Michael Afolabi
Chairman, Supervisory Committee
Date: 15-10-86

Mr. M.I.H. Zia
Member, Supervisory Committee
Date: 15-10-86

Professor Abdullahi Mohammed
Head of Department
Date: 15/10/86

Professor G.E. Osuide
Dean, Post-graduate School
Date: 7-IV-87

DEDICATION

This work is dedicated to my wife, Amina
and my children, Bilkisu, Habiba and Jemila.

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ABSTRACT

The most crucial area in any research institute's library services is the performance of its retrieval device. Catalogue effeciency is important to all information seekers in the library. The justification for research on this topical issue has long been recognized in the library world.

The objectives of the study were:

i. to study the search patterns of the users of NVRI library catalogue,

ii. to assess the extent it meets users information needs,

iii. to provide library users with better access to the collection through catalogues,

iv. to enable the cataloguer identify what information needs best be met by automated systems.

v. to enable the cataloguer know which bibliographical information currentlyprovided in the catalogue entries represent(s) a waste,

vi. to find out the problems encountered by patrons while searching the catalogue, and

vii. to suggest possible solutions to the problems.

The major problem investigated in the study is that very little is known about catalogue users' interaction with the catalogue, particularly his pattern of search; it also investigated catalogue use frequency and its

effectiveness as a retrieval device in a research library with the assumption that the information gained from it could provide valuable guides for improving it as information retrieval system.

The method used to collect data on the study was questionnaire. The conclusion of the study is that research into user's interaction with catalogue clarifies some points, particularly the effectiveness of the catalogue as an information retrieval device in a research library.

Finally, to ensure the effective use of the catalogue does not only require the provision of a detailed treatment of subject headings but would also involve a compilation of a thesaurus in specific areas that are of relevance to the users' area of research interest. The outcome of the study clearly establishes the inadequacy of the present card catalogue as an information retrieval system in the research library.

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CHAPTER ONE

INTRODUCTION

The practice of librarianship in all research institutes has been facing stiff challenges in the wake of accelerated technological advancement, resulting in publication explosion. Readers become increasingly sophisticated in their information needs making it imperative for the librarians to improve upon the current practices and techniques, keep pace with new developments or even expound new principles and theories that could extend the frontiers of the profession. The urge to re-appraise, modify or even replace the existing practices and techniques in librarianship is even more in the developing countries where tools as well as the techniques and methods of the profession are that which had their origin and perfection in western cultural settings.

The librarians have a responsibility of not only acquiring relevant materials to the needs of users but also ensuring their quick retrieval and satisfactory use. One of such basic retrieval devices in a library is the catalogue. It is also the most important and heavily used of a library's files, valuable to the reader as his main tool of access to the library collection. It is the key to a library's collection.

This observation is butteressed by Maltby and Sweeney (1972)[1] who stressed that..."there is an established tradition which points to the catalogue as a key factor in a good library service".

The construction of the catalogue is an important and intricate part of the librarian's work. As such, the choice of a catalogue's design deserves most careful attention. There are three main forms of catalogue namely; the book, the sheaf and the card catalogues. If the card catalogue which is the focus of this writer is to be successful in helping a reader exploit the library collection, it should be constructed and patterned after users' preferences and needs. The card catalogue is the most commonly used information retrieval device in libraries. As the name implies, it comprises a set of cards filed in a series of drawers. Each separate card is usually 3" x 5" in dimention and contains the bibliographic information about a document.

The effectiveness of a card catalogue can be determined through a careful determination of users' search patterns based upon the information brought to the catalogue by users. The cataloguer should utilize such various "approaches" or patterns of search on the catalogue as headings in the catalogue or as guide and basis for improvement.

There are two types of catalogues in the National Veterinary Research Institute (NVRI) library, namely; the author/title catalogue and the classified catalogue. The classified catalogue is composed of two parts, the alphabetical subject/Author index which translates the natural language form into a class number by which the cards are filed and the classified file itself in which entries are arranged according to the classification numbers.

The present card catalogue, subject catalogue in particular, in National Veterinary Research Institute (NVRI) library does not make adequate provision for effective retrieval of information in specific areas of animal diseases and vaccines and sera production, thereby making it extremely difficult and sometimes impossible for workers in such fields to meet their information requirements. Infact, it is important and necessary that a special library like NVRI library which supports and provides information for research activities and vaccines production should have detail subject headings. The insufficient subject headings are as result of adoption of Library of Congress Subject Headings (LCSH) without modification to suit the peculiar needs of the library. Assignment of subject headings is one of the common activities that cut across most libraries. This activity is important and taken seriously due to the recognition of the fact that patrons often do come to the library with a subject in mind.

It is therefore the most sensible thing to do to provide subject headings that will assist such readers to locate the required documents or subjects. The subject headings, when properly arranged as part of the catalogue, do not only identify subjects or documents sought but also make known the presence of material on allied subjects.

The situation in the NVRI library is that users' needs are specific in nature, whereas the subject catalogue headings are broad terms which make retrieval of topics difficult. Thus, portraying the card catalogue grossly inadequate as an information retrieval tool in Research Institutes. Vickery's (1973)[2] opinion that "an ideal information retrieval system is, that which provides each potential user of information with what he needs" is justified.

This ineffectiveness and inadequacy that characterise the card catalogue of the NVRI library as well as other problems such as search patterns, nature of queries brought by users and usefulness of bibliographical information provided in the catalogue and location of materials on the shelves are the focus of this study. The mode of verification will draw extensively from Vickery's (1973)[3] criteria for measuring effectiveness which includes:

"systems flexibility and accessibility (of service points) reliability and availability of ultimate information response time, precision (exclusion of information, recall of all relevant information".

The ineffectiveness and inadequacy of card catalogue in research libraries have long been discovered by some other research libraries in the country who in the alternative had introduced mechanized information retrieval systems. Examples of such libraries are; Institute for Agricultural Research (IAR) A.B.U. Zaria, who installed ocptical coincidence (Feature Cards), International Institute for Tropical Agriculture, Ibadan who installed mini computer and Kainji Lake Research, New Bussa who constructed simple optical coincidence.

Similarly, there has been a trend in Veterinary Sciences mostly in advanced countries resulting in the construction of complex information retrieval models requiring accurate input data from various subject on which heavy use predictions are made. This trend implies tighter coupling of information retrieval system to the users' interests, thereby acknowledging awareness of the changing character and widening the scope of the information required. This has finally resulted in necessary changes in the traditional mode of operation of the retrieval system. It is only through this approach that information retrieval systems can make

significant contributions to the credibility of library as an indispensible tool in research.

In the light of the above, the writer will subject the traditional card catalogue of National Veterinary Research Institute library to examination with the view to discovering its effectiveness in providing users access to the library collection. If users are to locate information of use and interest efficiently, a high degree of compatibility must exist between the catalogue and users' approach. Such compatibility can only be achieved when the information retrieval system is constructed on the basis of understanding of users' interests, search strategies and limitations. Kolchinski (1979)[4] and Ter-Avanesyan (1979)[5] in separate papers shared the above view saying that "information retrieval system must be compatible with users and capable of retrieving full and relevant information".

Traditionally, catalogue use studies have precise aim of providing a better understanding of the catalogue with a view to improving both library service and efficiency of cataloguing duties, as well as aiding management decisions interms of the costs/benefits and implications of cataloguing operations. Of late, one aspect of catalogue use studies is being directed towards the possibility of introducing an alternative

retrieval systems, especially mechanized ones, with the view of meeting user needs satisfactorily and within a short period.

Finally, it should be stated precisely that users of the library under study encounter some problems in the course of searching library catalogue. Such problems could only be provided with lasting solutions if investigations are conducted in the effectiveness of the catalogue.

1.2 Statement of the problem

One major reason for designing and evaluating an information retrieval system is to provide its users optimum access and satisfaction into information represented in the library collection. Library catalogue is a key to the library holdings and its effective use should result in meeting users needs. Holm's (1962)[6] view that "usability is dependent upon the effectiveness of the creator and the astuteness of the receiver" is hiting the nail on the head.

Much literature is being generated in veterinary medicine as a result of:

i. intensified increase, and diversified research into various diseases, some of whose infection are communicable to both man and animal,

ii increase in the production of various types of vaccines and sera.

There is the need to make available to users, the findings of such work in the form most needed and useful in the course of further research and routine job. This has called for the re-evaluation/re-appraisal of the existing traditional library card catalogue in meeting the specific information that is constantly required by the researchers and producers of vaccines. Central in the problem is that not much is known about users' encounter with catalogue, particularly their searching pattern, relevance of information retrieved and the effectiveness and adequacy of the catalogue to retrieve specific information needed.

Specifications of the problem are:

1. How frequent is National Veterinary Research Institute (NVRI) library card catalogue used by its patrons?
2. How effective is the card catalogue in providing answers to users' queries?
3. What factors contribute to the success and failure of card catalogue in providing answers to queries brought to it by users?
4. What alternative retrieval device could be recommended based on the nature of queries or information brought to the catalogue?

5. What are the search patterns of the users of NVRI library catalogue?

6. Of what use are the various types of bibliographical information found in the library catalogue entries to users?

Research Questions

1. Is the treatment of subject headings in the NVRI library catalogue adequate to permit location of specific information needed by its users?

2. Can the under-utilization of the library catalogue be attributed to the insufficient subject headings?

3. What access points and search patterns are popular among the various groups of users?

4. What is the nature of user-queries and how adequately can the card catalogue answer such queries?

5. Given the limitations of a card catalogue as an information retrieval system, would users prefer a mechanized retrieval system?

6. Which of the bibliographical information provided in the card catalogue entries are of little or no use to users?

7. What difficulties are encountered by users of the NVRI library catalogue?

8. Why do such difficulties, if any, arise?

1.3 Significance

This study should be significant in that it will highlight the users' interaction with card catalogues and some of the difficulties encountered in the process. Patrons use the catalogue to obtain various types of information and leave the library with varying degree of satisfaction. Any success or failure so recorded in the process of use depends on several factors, ranging from availability of material, effectiveness of the catalogue to retrieve it, users ability to give accurate information and his search pattern. These and many other possible reasons require that the cataloguer must demonstrate foresight and anticipate the approach of the users to the library catalogue, based on careful study. This study will reveal the extent to which the cataloguers of the NVRI library reflect such approaches of the patrons resulting in a harmonious match or otherwise between the entry terms in the catalogue and those the users brought to the catalogue.

Finally, the library of National Veterinary Research Institute has acquired a good number of materials that are relevant to users' need but not optimally utilized because of inadequacies which plagued the retrieval device. These include insufficient subject headings which greatly limit the degree of accessibility and retrievability of some topics.

This writer will subject the NVRI library catalogue to examination and scrutiny with a view to exposing its weaknesses and make necessary suggestions for its improvement or establishment of a different information retrieval system, based on the nature of information often sought.

1.4 Objective

The major preoccupation of any type of library is to acquire materials that will meet enquiries of users. Having acquired the relevant materials, the library must organize them in the most useful manner that will facilitate quick and satisfactory retrieval of such materials by users.

However, as a result of publication explosion and the urge to acquire all relevant materials, the library is always faced with the parennial problem of effective organization of all the acquired materials. The problem is further compounded by the accelerated pace of modern technology which creates new demands for quick retrieval of information. This does not only question and threatening the traditional retrieval devices but also gives stiff challenges to the creativity of librarians.

However, in spite of the challenges posed by the modern technology, librarians have continued to preserve the old retrieval device represented by card catalogue. This has prompted occasional examination and scrutiny of the adequacy of the catalogue with a view to improving its performance. Under these circumstances, in addition to the prevailing dominance of the catalogue in research libraries in Nigeria and in particular its continued use at NVRI library prompted the writer to attempt this evaluative study of the card catalogue with the aim of pointing out its strengths and weaknesses as a retrieval device in research libraries. Meantime, the objectives of the study are as stated below:

1. To study the search patterns of users of National Veterinary Research Institute Library card catalogue.
2. To assess the extent to which the card catalogue meets users' information requirements.
3. To enable the cataloguer identify what information needs can best be met by automated systems now that the library is considering automating its retrieval system.

4. To provide library users with better access to the collection through catalogues.

5. To enable the cataloguer know which bibliographical information currently provided in the catalogue entries that is of little or no use to users.

6. To find out the problems encountered by the patrons while searching the catalogue, and

7. To suggest possible solutions to the problems.

1.5 Scope and Limitations

This study investigates the effectiveness of a card catalogue as an information retrieval device and its adequacy in a research library like National Veterinary Research Institute. It also investigates catalogue use of veterinary surgeon scientists, non-veterinary surgeon scientists and technologists who are engaged in active research and vaccines production. This study is limited to the NVRI library catalogue. Because of the constraints of time and resources involved, it will not be possible to effectively cover similar organizations. However, such organizations could still benefit immensely from the findings of the study.

Delimiations

First, owing to certain constraints the study is not able to cover all the categories of registerable users but concentrated mainly on research scientists and technologists. Secondly, the subjective instrument of data collection have their own limitations. This is so because the correctness of the facts depends on the mood of the respondents and the accuracy of what has been returned.

1.6 Methodology

As a procedure for collecting and analyzing data in this study; consultations was first made to literature reviews on the related topic of study. This did not only give a background knowledge of the topic but current development and standards on the area of study was discovered. Use of questionnaire: The methodology adopted for any user study has profound effect on the data generated. As Hafter (1979)[7] observed "almost all the catalogue use surveys are flamed by inadequate sampling procedures", certainly this writer cannot claim absolute accuracy of choice of sampling technique. However Liptez (1972)[8] was of the view that "some catalogue use studies that were conducted through interviews with the users at the time they search the catalogue are more reliable than the use of questionnaires distributed to catalogue search because of doubts regarding the

reliability of human recall of the details of their search activities". But Maltby (1971)[9] had long before last two views noticed the short-coming of interview format as instrument for data collection, saying that "the behaviour of the reader at the catalogue, when he knows he is being observed, may be wildly untypical".

In the light of the above controversy as to the most reliable instrument for collection of data between interview and questionnaire, this writer has chosen the questionnaire format as an instrument for collecting data because of the limited time available for completing the study and the ease of covering a large number of respondents within a short time.

Constitution of the sample: The distribution of the questionnaire took cognizance of the three categories of users involved in the study, namely the veterinary surgeons, non-veterinary surgeon scientists and the technologists.

The population of this study comprising the three categories of registered readers is 238. From this figure a sample of 80 was taken. A breakdown of this sample as representatives of the three categories mentioned indicates that 30, 24 and 26 are veterinary surgeons, non-veterinary surgeon scientists and technologists respectively.

Procedure for Data Analysis:

The data collected on users of NVRI library catalogue were analysed presenting both the results in tabular form and expressing the raw figures derived in the form of percentages.

1.7 Definition of Terms

Terms used in this study which may otherwise be misinterpreted are operationally defined below:

1. Effectiveness - means assessing/evaluating the extent of usefulness in meeting users requests.
2. Information - is used to imply document and data capable of meeting users' needs.
3. User satisfaction - success in retrieving a particular information to meet a specific need.
4. Search pattern - The way and manner in which users go about to get information needed from the catalogue.
5. Information retrieval system - is a device that is meant for description and storage of a mass of information sources and which allows for recall and access to the described and stored information. This is to say it is an equipment and recorded information that can be analysed, organized, stored and used as the need arises.
6. Adequacy - is synonymously used to mean effectiveness of an information retrieval system.

7. Collection failure - means that the wanted material is not part of a library holding.

8. Known-item search - is one in which the reader searches for the catalogue cards. The searcher usually has some knowledge of the existence and identity of the item.

9. Veterinary medicine - is the study concerned with diseases and health of non-human animals.

10. Catalogue users, patrons and readers:- These terms interchangeably used in the study to imply researchers who consult the catalogue for one request or the other.

11. Veterinary Surgeons - They are veterinary practitioners who are specialised in surgery. By their training, qualification and registration with veterinary council, are deemed qualified to operate as veterinary practitioners. They hold professional and academic degrees.

12. Non-Veterinary Scientists - are other practitioners who work in fields that are related to veterinary medicine but are not registered under the veterinary council act. They hold professional and academic degrees.

13. Technologists - Perform jobs that are essentially limited to gathering, maintaining and analysising of samples. Their qualifications varied, ranging from school of Medical Laboratory Sciences to degree and sometimes higher degrees.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

The essence of a literature review whether in the sciences or the arts is to acknowledge sources of ideas that have been the driving force behind the research. In this way credit is given to previous researchers in the area and an attempt is made to point out how the present study differs from earlier ones.

The concentration of this review is grouped into two broad areas, namely studies on:

i. effectiveness/adequacy of the retrieval device and
ii. users' search patterns and nature of information brought to the catalogue.

However the arrangement of the studies in this review is chronological.

Randall (1930)[1] expressed "the need for reliable quantitative information about those who use the catalogue, how and why it is used and finally, with what difficulties it is used." He emphasized that "the major criterion of the success of a catalogue is the measurement of how well it performs its function to satisfy users." He went further to state that the ultimate goal for catalogue is to maximise its effectiveness and such goal could only be achieved by an intelligent study of the user themselves, their mental equipment, background

and needs. Finally he stated that users' various "approaches" to the catalogue should be established and utilized as headings in the catalogue.

This writer observes that though hundreds of catalogue use studies have been completed since Randall's presentation, only few are comprehensive, though they are still valuable, supplying a continuing evaluation of catalogue problems, suggesting possible solutions and identifying areas for further study.

Penalosa (1956)[2] in a card catalogue use study in Denver public library and university library, identified two groups of users of the card catalogue, the professional librarians and other library staff as one group that was essentially homogeneous and the library patrons as heterogeneous group. He used questionnaire to obtain data. The data revealed that 74% of the respondents preferred title catalogue while 22% of the respondents' preferred subject catalogue. Other conclusion drawn from the patrons view was that card catalogue contained entirely too much bibliographical information and not enough information about the contents of the work. He finally gave some suggestions that could improve catalogue use. Such suggestions include: determination of the extent patrons use each bibliographic entry in the catalogue and compilation of annotations.

Kyle (1966)[3] in a paper titled "Notes on cataloguing in special libraries with emphasis on author and name

entries" among other things, suggested that a cataloguer in a special library should provide for a users' likely behaviour by holding the "document" before him and asks himself the following questions: "What questions might this document answer? How will these questions be framed? And what cataloguing entries will enable the searcher to find this document when such questions are asked?"

This writer supports the above questions as being necessary and important for each cataloguer to ask when in possession of a document to be catalogued.

Kenney (1966)[4] in a study "The implications of the needs of users for the design of a catalogue; a survey at the International London office", used interview and questionnaire to collect data. He obtained the following result :a large proportion of patrons never used the catalogue and in fact were ignorant of its existence; that for the few who used the catalogue, found it inaccessible, and that indexes which used coordinated indexing made documents more easily available. He finally recommended the establishment of mechanized information retrieval system that provides better access and quick retrieval of information. This particular work is very relevant to the one this writer is undertaking in many respects. The writer assumes that the card catalogue of NVRI library is not adequate in meeting the needs of its users and considers the need to introduce a mechanized information retrieval system.

Grose and Line (1968)[5] in a work title "construction and care of white elephants: some fundamental questions concerning the catalogue" asserted that discussions on cataloguing have nearly been concerned with standards rather than principles. They cautioned the cataloguers not to regard "home trained to our routines" as the "good" library users, rather those who constantly show interest to learn from them on the use of library catalogue. They also highlighted that library staff and users made use of catalogue obtain different needs. While the library staff used catalogue to check specific items (narrow approach) the library patrons had a wider variety of approach. They finally advised that the functions catalogues are serving at present should be compared with the actual demands placed on them; the nature of users and the possible conflicts that exist between the catalogue needs of librarians and the users and whether standardization should overrule local needs.

Palmer (1970)[6] in a doctoral dissertation through rigours of sampling techniques of over 4,400 users of the University of Michigan General library completed questionnaires assessed users' reaction to shortened computerised catalogue. He discovered among other things that 53% of the students used the catalogue. Lipetz (1970)[7] in a study conducted between March 1968 and April 1969 at Yale University library catalogue through interview found that 73% of the catalogue users planned to make a known-item search.

In another study by Lipetz (1972)[8] at Yale University library identified four general search objectives of the users. They include; to determine whether and where the library holds a work that the user already knew to exist, a subject search is for pertinent works on a known topic, a bibliographic search like document search is for a known work but the objective is to make use of data from the catalogue card not to locate or borrow the book, and author search which is to determine what works if any are available from some known author or publishing body. He discovered that in terms of immediate intent three-fourths of the users were interested in documents searches.

Maltby (1973)[9], basing his survey on academic and public library use carried out in United Kingdom from 1969 - 1972 found that 70% of the respondents used catalogue at some other time. He discovered also that most of the descriptive information provided in the catalogue entries was not used by readers.

Uba (1972)[10] advocated for the campaign in the use of catalogue. He noted that a lot of money and time were put into its design and subsequent maintenance, hence it should not be neglected. He observed that the poor use made of catalogues was not only limited to public library but extend to other libraries, though the former were greatly affected.

Lancaster (1973)[11] in his work, titled "Information retrieval systems, design considerations"gave four guides, these include: accessibility and convenient for use, what to be included in database, how database is to be indexed and how the user is to interact with the system. The above guides could be employed to some extent by the cataloguer in cataloguing.

Yakubu (1976)[12] in a catalogue use study in Kaduna State examined the card catalogue's usefulness from the users' point of view. He discovered that majority of users were ignorant of catalogue's existence and that the few who were aware of its existence thought it was meant for the use of library staff only.

Said (1976)[13] in a study titled "Study on catalogue usage in Kashim Ibrahim Library," using questionnaire to collect data found that 55.6% of the students went directly to the shelves to obtain materials needed. She also discovered some inconsistencies in the classification marks assigned to materials on the same subjects or topics. She gave some recommendations which include: frequent consultations with subject specialists in the teaching departments.

Womboh (1977)[14] studied the nature of students' use of catalogue at Ahmadu Bello University's School of Basic Studies library. From the questionnaire response, he discovered that 46.7% of those students introduced

to the catalogue during orientation period used it afterwards. He identified some problems and made some suggestions towards solving them.

Afolabi (1978)[15] in a more intensive use study of Kashim Ibrahim Library Catalogue collected data on interview and observation method from April 1977 to December 1977. Users were followed to the catalogue and subjected to some questions before, during and after searching. Among other findings of the study, it was discovered that about 80%, a high rate success made known-item search. It was also discovered that failures were not as a result of the users' incompetence in using the author/title catalogue but due to collection failure. Finally, he clarified some important points about users' interaction with the catalogue, particularly their style of searching.

Seal (1978)[16] was concerned with the extent of information content of the catalogue entries. He asked some questions which despatch his contentions. These include: should the library catalogue be designed to be a finding list or to contain fewer entries? He sought users' opinions on the above and they favoured fewer entries.

Ter-Avanesyan (1979)[17] in a work titled "criteria for the evaluation of effectiveness of information and bibliographic services to specialists" came out with some findings. These include: while library service was

assessed from point of view of user satisfaction, retrieval systems were judged by speed, fullness and relevance. He concluded that an important indicator of effectiveness of information retrieval was the quality of indexing.

This work is one of the most relevant studies to the the present study. First this writers is of the view that subject treatment in NVRI card catalogue is not detailed enough to permit location of specific topics. Secondly it is the belief of this writer too that "relevance" is one of the criteria by which any information retrieval system is judged.

Butler (1979)[18] in a study, "Computer output microform catalogue use and evaluation at Los Angeles county Public Library System"compared computer output Microform to card catalogue by sampling patron's opinions interms of preference. He concluded that computer output microform (C.O.M.) catalogue was more acceptable to patrons than card catalogue. He discovered among other things that the provision of information in C.O.M. form seemed to increase catalogue use and staff training.

Nelson (1979)[19] in a paper titled "Anthropological research and printed library catalogue gave the usefulness of printed library catalogue in retrieval bibliographic resource and subject headings specifically deviced for a particular discipline and can often be used to find

library materials which cannot be identified through card catalogue. The paper described and enumerated the special features of catalogues which are specifically useful for research in anthropology.

Lipow (1979)[20] in a report titled "The catalogue in research library and alternatives to it", summarised users' remarks and assessment of library catalogue of University of California Berkeley. She gathered the following from her experience with users: they usually hid their ignorance and inability to find wanted materials and went about accusing the library staff; most of the catalogue entry rules were obsolent within 10 - 20 years in research libraries, that for libraries in research institutes to keep up with the needs of their users subject terms must keep on evolving, that it has become virtually impossible to maintain the catalogue system as a dynamic finding tool it is meant to be. She finally enumerated problems associated with various access points users might encounter, and recommended that computerization is the only solution to the problems.

Berman (1979)[21], drawing extensively from his working experience in public library, gave the qualities of an effective library catalogue to include: findability which involves full and quick access to materials and familiarity of language by entering works under the author's title

page name, assigning enough added entries, subtitles and subjects of the materials. The second quality is intelligibility in other words the substance and format of catalogue entries should be helpful to users and should make sense. The third quality is fairness to materials being catalogued by giving sufficient coverage to main topics treated in the material. Finally,

greater access and more added entries for subtitles and catch titles. This writer shares all the views expressed above and in addition would like to say that to promote and retain catalogue effectiveness, users should be made to cultivate the habit of using library use instruction exercise to learn more about facilities and services.

Gorman (1979)[22] having examined the short-comings of traditional catalogues concluded that they are not ideal for special libraries and opted for mechanized information retrieval system which are more effective than the traditional catalogues. He finally compared the advantages of the two systems.

Horizonte (1980)[23] in a study, catalogue use in SESC central library gave an account of research work undertaken in the previous years, under factors influencing search success, search failure, user approaches and the type of catalogue that would be most useful. Finally he made some suggestions on the type of catalogue most useful based on the reasons for using the catalogue.

Karikelas' (1980)[24] study was to assertain if a relationship existed between the ambiguity of information given for a specific item and the access point selected by the searcher to determine its availability. Using observation method between 1976 and 1978 at the University of Wisconsin, he obtained the following results: that author approach was preferred but if a small ambiguity was introduced (such as initials instead of first name) the number of title searches would increase.

Kaske and Sauders (1980)[25] in a work, "Evaluating the effectiveness of subject access" sought the views of library patrons in interview schedule. The data collected revealed users' perceptions, expectations and criteria for success in using the subject catalogue.

Eskina (1980)[26] carried out a research in fourteen scientific fields of the 33 departments of Moscow Regional Scientific Institute. In order to eliminate the problem of using and locating materials, two main catalogue headings were determined to reflect the planned research work of the Institute. A card index was also designed for selective Dissemination of Information (SDI). The result of time and motion study showed that the traditional method of work tool longer time than mechanized.

Norie (1980)[27] in a paper titled "False economy or sabotage at the catalogue", cautioned that automation must be used to the greatest advantage of library

users and should not be used as an excuse to shift problems from technical services to public services. She said further that if imprecise information on library holdings was given and filing errors were not corrected users would be frustrated. Finally she cautioned that all changes in cataloguing policy should be carefully scrutinised to see if they really worth it.

Amaeshi (1982)[28] in a study, "Frequency, Awareness, Preferred Access and Relevance: A Study of Undergraduate Catalogue Use at the University of Ife Library," using questionnaire as an instrument of collecting data among other things, discovered that 75.3% of the students used catalogue; and within the group a preference was for authors/title approaches. There was low level of use of the bibliographical information on the catalogue cards.

Golden, et al (1982)[29] in a work titled "Patron Approach to Serials: a user study were concerned about the paucity of catalogue studies devoted solely to serials use." From the data collected through questionnaire, 84% of the respondents were successful in their searches after one attempt while 72% were successful at first attempt. The authors also discovered that important access points were not included owing to librarian's lack of awareness of users' approach.

Pease and Gouke (1982)[30] in their study titled "Patterns of use in an online catalogue and a card

catalogue, considered if the use of online catalogue would bring about any change in patrons' search patterns in catalogue use. Using questionnaire to collect data, they compared the success of patrons in using online catalogue to using card catalogue on the same titles in two departments. They also subjected the patrons to use the online catalogue and card catalogue in searching titles of their choice. Results obtained, showed that 90% of online users preferred the online catalogue to card catalogue. Also 64% of the users of card catalogue who tried the online catalogue switched over to its use. Finally, a higher frequency of use was recorded in the online catalogue. Because it was quicker and met their specific information needs than the card. The use of card catalogue decreased. The above study is of great relevance and has similarities to the current research. It was only the card catalogue that was in use when Pease and others established mechanized information retrieval, online. Also the users of the library were encountering difficulties in using card catalogue to obtain information quickly. It is observed that both libraries are attached to research organizations and the information needs of the users are essentially the same.

Ibeun (1983)[31] in technical report titled "A preliminary report on the construction and use of a simple optical coincidence device in Kainji Lake

Research Institute's library" stated briefly reasons which led to its construction. These include difficulties users encountered in exploiting materials due to insufficient subject headings and limited access points of author/title provided in the library catalogue. It was difficult to meet request on specific subject areas within a short period of time. As result of these gross inadequacies of card catalogue in retrieving documents on a specialized topic he constructed the optical coincidence from local material at a very minimum cost if compared to those of Institute for Agricultural Research (IAR) Zaria and International Institute for Tropical Agriculture (IITA) Ibadan. He compiled index which covered all the six subject areas on which the Institute's research activities are based. The system has more than five hundred terminologies.

Lawoe (1983)[32] wanted to find out users interaction with catalogue and some difficulties encountered in the process in order to measure the effectiveness and efficiency of the catalogue by users' opinion. Using two sets of questionnaire, one for the librarian and the other for the users, discovered that 62.5% of the users of Institute for Agricultural Research Library catalogue did not make effective use of the catalogue; while 61.3% of the users did not encounter any problems and finally 71.3% of the total searches performed were successful.

Adefolaju (1983)[33] was concerned with the use of agricultural libraries in Nigeria, focusing on a particular library. She collected data on questionnaire, which revealed that library patrons were not making effective use of the library. The reasons for this are poor accessibility and inconvenient hours of opening and the gross inadequacy in meeting the requests made to it.

The need for effective information retrieval system was the focus of Ononogbo (1984).[34] He called for the setting of a cordinated system of scientific and technological information in Nigeria. This, he contented would amount to responding to a need at a critical stage in the national development in general and solving the perennial information problems of the scientists and researchers.

Drone (1984)[35] in a study titled "A use study of the card catalogue of the university of Illinois Music library", examined the hourly rate of use at the sound recording and book/music catalogue, the amount of time users spent at the catalogue, who used the catalogues, and why; what difficulties users encountered, the success rate of

users' searches and what alternative could be recommended. He obtained following results; 75% of the users at the sound recording catalogue and 72.5% of the users at the book/music catalogue completed their search in 4 minutes or less; 90% of the users at the sound recording catalogue finished in 11 minutes or less; 64% of the music students were locating material for assignments while 38.1% of other students were seeking course-related materials and overall, 77% success rate was achieved and finally recommended online catalogue for the library in order to improve accessibility and shortened time spent on searching for information.

Morehead et al (1984)[36] in their work, "the value of information and computer aided information seeking: problem formulation and application to fiction retrieval" stressed among other things the need for information systems to exihibit high degree of compatibility with users if the small amount of relevant information from the large quantity provided was to be located. They expressed too that understanding of how users value information retrieved would prove helpful in deciding which information to present, in what form and how and when to present it. They contended that understanding of how users value information was of

paramount importance and determined the effectiveness of the system.

Eze..ji (1984)[37] in a study, "Readers' approach to material retrieval in Institute for Agricultural Research library, examined, among other things, the manner readers approach the catalogue in searching for materials. He used questionnaire to collect data on material seeking behaviour of the readers and degree of satisfaction, discovered that 70.22% of the users took to known-item searches while 34.52% took to subject searches. Finally 80.95% of the respondents were satisfied with their success in catalogue use.

Ibekwe (1984)[38] in a seminar paper titled "Problems of large scale indexing and application of automated solutions, traced the levels of mechanization of library operations. He called on Nigerian libraries that could afford the cost to computerise their library services. He named three research institutes in the country that have attained second level of automation. They are: International Institute for Tropical Agriculture (IITA), Ibadan with optical coincidence device (Remac Model 301) Institute for Agricultural Research (IAR), Ahmadu Bello University, Zaria, with optical coincidence and Kainji Lake Research Institute with simple optical coincidence constructed locally. The third level is computers of 1960s which is yet to installed in Nigerian libraries.

Haag (1984)[39] in a work titled "Barriers limiting the usefulness of published information in research environment" identified 14 barriers which delayed the flow of information from library to users. Among those that are relevant to this study include the poor use made of non-conventional literature like reports, codes, patents, preprint and conference papers due to inability of the card catalogue to reflect and make entries for them. He went further to say that these materials constitute the bulk of special library collection.

Mandel (1985)[40] in a study, "Enriching the library catalogue records for subject access," analysed proposal for augmenting library bibliographic records for improved subject in online catalogues. Possible fields for enrichment were described and determined. The enrichment was to be inform of providing access to parts of books and records. The paper presented argument for and against adding book content indexing to the online catalogue and viewed subject access in online catalogue in four interdependent components. This particular study is relevant and similar in some ways to the study this writer is undertaking, for example the manipulative acts of this paper to enrich the subject access for the users of online could be employed to a large extent in improving subject access of the users of National Veterinary Research Institute library catalogue.

Lawrence's (1985)[41] paper titled "system features for subject access in the online catalogue" reviewed

available design techniques from a subject-searching perspective. The review concluded that there were many alternative approaches, each with strengths and weaknesses. The paper described the various ways in which software systems for online catalogues can be designed to enhance subject access. And concluded that from the thirteen systems studied, users who searched subject catalogue in online catalogue were more satisfied than those who searched title catalogue in the online catalogue.

Karen (1985)[42] in a study "subject experiences and needs of online catalogue users: Implications for library classification"used a patron question in twenty nine libraries. The users were asked to select as many as four additional features they would like in the online public access catalogue. Majority of the patrons suggested increase in the amount of subject information in the bibliographic records and to incorporate lists of related terms into online catalogue. It was equally discovered that there were more subject search in online catalogues than expected and users had more problems with subject searching particularly in the selection of subject vocabulary.

In conclusion, this writer has observed that most of the studies reviewed in this chapter centre around catalogue use in universities and public libraries, and very few on special libraries in general and research

libraries in particular. The emphasis of these studies is also on the types of search conducted, frequency and standards of retrieval device. A few of the studies compared traditional catalogue use with the use of mechanized information retrieval systems. Their findings in most cases failed to come out with suggestions capable of solving or minimising users' problem of unsatisfactory catalogue search.

The present research, however, does benefit in many respects from the findings of the majority of the studies, especially in the provision of basic information. This study dwells much on the evaluative aspects of catalogue use with the aim of determining users' information needs, its nature and the extent card catalogue could be used to obtain the needed information.

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CHAPTER THREE

THEORETICAL BACKGROUND TO THE STUDY

3.1 Theories on Information Retrieval System

Information retrieval is the process of searching some collected documents, using the term "document" in its widest sense, in order to identify those materials which deal with particular subject.[1] Any system that is designed to facilitate this literature searching activity may legitimately called an information retrieval system, for example subject catalogue. The output of an information retrieval system usually consists of bibliographical references, a set of data or actual information sought. Information retrieval system implies that the existence of selection criteria and policies, in which the needs of the community to be served are considered. Once documents are acquired, the next logical step is to organize and control them so that they can be identified and located in response to various kinds of demands that may be made by the users. Information retrieval system does not consist of only the catalogue but many others like, classification, subject indexing and abstracts.

Some information retrieval systems stop at the delivery of a document representation. The delivery of documents or specific data needed is completely separate activity that may or may not be provided by the retrieval systems.

3.2 Measure of effectiveness and performanance.

Having defined and listed the activities of information retrieval systems, it is necessary and important to see that they perform the activities effectively. The two most frequently used measures to determine the effeciency of an information retrieval system are recall and precision ratios. These two above, measure systems' ability to maximise the number of relevant documents retrieved and to minimise the number of non-relevant documents retrieved in response to a quiry. Cleverdon[2] has grouped all grouped all evaluative criteria into user criteria and manager's criteria. User criteria consistes of the following:

1. The ability of a system to present all relevant documents (recall)
2. The ability of the system to with hold non-relevant documents (Precision relevance).

3. The interval between the demand being made and the answer being given (response time)
4. The physical form of the output - this is to say if the actual data needed is presented or a document where the actual data or information could be obtained.
5. The effort, intellectual and physical demand of the user.

The most important factors controlling the effectiveness of a retrieval system may be separated into two groups:

1. Data base factors
2. Factors associated with the exploitation of the data base.

Examples of input factors are: What documents are included; how completely and accurately the subject matter of these documents is recognized and represented in the indexing operation, how adequate is the vocabulary of the system to represent the subject matter of these documents. This writer will employ these evaluative criteria in subjecting the NVRI library catalogue to examination and scrutiny.

There are also three exploitation or output factors:

1. How well is the staff at the information centre able to understand the information needs of users (user-system interaction)
2. How well staff can transform these needs into searching strategies and

3. How adequate is the vocabulary of the system to represent the subject interests of the system users.

The above criteria will be used by this writer in the course of the study.

3.3 Why is Knowledge organised in libraries?

One of the functions performed by libraries is to serve as a store for recorded knowledge. Parts of the culture and civilization of ancient Egypt, Mesopotamia and Greece were preserved through libraries. Since the development of writing and the invention of printing, libraries have continued to perform this function.

Modern librarianship is involved with the collection, preservation, organization and dissemination of knowledge presented in various physical forms. The records so gathered are not only to be presented, but are essentially meant to be exploited in order to communicate and disseminate information. The books and other media materials that have been collected must be organized so that there will be a definite order in the whole collection to give good service to users. Unless this is done, communication process between the library and users may breakdown. Organization is also necessary because printed matter is increasing at a tremendous rate, especially in science where literature is growing at an exponential rate. Libraries have a

duty to ensure that relevant information gets to the user at the right time. Through the use of cataloguing codes and classification schemes librarians have over the years made such organization possible. The library catalogue was developed as a non-human corporate memory which serves as a bridge between the information store and the user.

3.4 Cataloguing and Catalogues

Cataloguing a library material is the systematic establishment of records that are needed to identify it as a physical object distinct from others. It is simply preparing information about a material and recording its existence in the library. The use made of the library depends largely on the quality of its corporate memory. If the memory misdirects the user, then the library would have failed in helping the user satisfy his information needs.

3.5 Specific functions of a library catalogue

The purpose of a catalogue as defined by Cutter[3] is:

1. to enable a person find a document of which
   - i. the author or
   - ii the title or
   - iii the subject is known
2. To show what a library has
   - i. by a given author
   - ii. On a given subject
   - iii in a given kind (or form) of literature.

3. to assist in the choice of a document

   i as to its edition (bibliographically)

   ii as to its character (literary or topical)

These functions as stated above are of primary importance to document retrieval. In addition this writer believes that the catalogue can also be a communicating device by providing the necessary bibliographical information about documents and also indicate the range of coverage in a particular subject field.

The functions of a library catalogue as stated by Mann[4] are more comprehensive and appealing. The functions are:

1. To record each work in library by author, translator, editor, illustrator, series or by any other person; body or name under which a reader might look, and to the extent that is desirable for a particular library.

2. To arrange author entries in such a way that all the works of one writer will be found together, under the same name, a procedure that makes it possible for readers either to find a specific work or survey the literature output of an author as represented in the library.

3. To provide not only entries for each book but also parts of it, especially where two or more subjects are treated in a book. This particular function is very necessary in research libraries.

4. To arrange the subject entries in such a way that like subjects stand together, and related subjects are correlated.

5. To record titles of work when necessary. This is desirable as some users are likely to remember or come to the library with the title of a work only.

6. To provide cross references which guide the reader from entries not used to those used or direct him to related entries.

7. To give a description of each book consisting title, edition (if other than first) imprint collection and notes.

8. To list the call number by which the book is to be found on the shelf.

In summary, the main function of a catalogue is to assist the reader determine accurately and with minimum waste of time, if the item he wants is in the library collection and where to find it. In constructing the catalogue the needs of the poetntial users must be

of paramount concern because the ultimate purpose of it is to serve users well. Organization of documents is in order to avoid scanning the entire collection.

3.6 Physical Forms of Catalogues

The physical forms of the three kinds of catalogue are described below:

Sheaf Catalogue - consists of thin slips of paper held in specially manufactured loose leaf binders. The binders are filed in pigeon holes to form the catalogue cabinet. Normally, each slip carries a separate entry. The slips can be reproduced by means of carbon paper which is a very cheap method. However, because of the glimsy nature of the slips they have to be handled with care. The binders are portable as errant users can carry them around the library. It is however, not easily guided because users often disorganise the arrangement in the pigeon holes.

Book Catalogue - The entries are printed in book form and bound into volumes. Users find it most easy to consult because many entries can be seen at glance. It occupies less space in the library compare to card catalogue and sheaf catalogue. It can be shelved like any other book. It can be produced in multiple copies. Its short comings include its inflexibility compared to sheaf and card catalogues. This is to say, no new entries can be made or inserted unless the whole is re-issued. It is therefore not economical.

Card Catalogue:- The Card catalogue comprises a set of cards filed in a series of drawers with separate 3" x 5" in diamension and contains bibliographic information about a document. In the standard size cabinet each drawer holds about 1,000 cards. The card catalogue fulfils most of the qualities of a good catalogue and is the one most widely used in libraries. It is the most flexible of all. New entries can be inserted and those discarded books withdrawn with ease to keep the catalogue up to date. It is easy to handle and understand by users. Several readers could consult it at the same time. It can be reproduced by typing, photo copying and duplicating.

The inner forms of catalogues - The inner form of a catalogue is determined by the order in which the cards or entries are arranged. The two most common ones are dictionary and classified.

Dictionary Catalogue - As the name implies, its arrangement is in the same way a dictionary is arranged. All entries, author, title headings, specific subject headings and connective references are arranged in one alphabetical order. This arrangement is the most helpful to the reader who remembers either only author, title or subject of a document. Frequently, however, title entries are not made for books because of their filing problems. The dictionary catalogue is easy to

use but on the other hand, becomes very complex as the library collection becomes quite large.

The Author Catalogue - The author arrangement makes provision for tracing documents by their writers. In the author arrangement, the entries are filed alphabetically by the surname of the author.

Subject Catalogue - This arranges entries by subject matter of the work and filed alphabetically. The subject of a work is constant but the methods of representing it vary with the type of classification scheme used. Its main advantage is that the user does not need to have any knowledge of the classification scheme to be able to locate a document on any subject.

Classified Catalogue - This is composed of two parts; one is an alphabetically subject index that translates the natural language form into a class number by which the cards are filed. The other part is classified file itself in which the entries are arranged according to the classification members. A user must be familiar with the classification scheme to find the arrangement easy and meaningful. Classified catalogue is convenient for special and university libraries. In the special library the collection is devoted to a particular subjects collected for the exclusive use of specialists. It brings together all documents of one class and related classes will be

found in logical order as well. Organization in some form is necessary as man is always in search of learning and will resort to libraries in his search for knowledge. In preparing a retrieval device, every library has to consider the method most appropriate and how it would be be effectively utilised.

3.7 General Qualities of a Catalogue

It must however be noted that a catalogue in whatever form must have some general qualities to make it usable. These qualities as recommended by Needham[5] are as follows:

Catalogues should be

i. Flexible - They should allow entries to be withdrawn and inserted easily so that the catalogue can be kept up to date.

ii. Easy to use - to handle and consult (and preferably by more than one reader at a time). This should be equally accessible to staff and public.

iii. Easily guided - to enable the user to find the relevant entry with the minimum of trouble.

iv. Economic - both to produce and maintain.

v. Capable of being produced by some reproduction process - so that duplicates can easily be made or entries produced centrally for branches. Alternatively, they should be capable of taking unit entries produced by a central agency like British National Bibliography (BNB).

vi. Compact

vii. Portable - within the library or outside

No single form of catalogue has all these qualities.

3.8 Classification and the purpose classifying Library materials.

The two most appealing definitions of classification in library are those of Sayers and Vickery. According to Sayers,[6] "Library classification is the arrangement of books on shelves or systematic arrangement of catalogues and similar tools in the manner which is most useful to those who read them". This is to say classification determines the best relative position of a document within the subject order of a library's collection. It shows the ability not only to pinpoint specific items of information but also to demonstrate the complete range of subjects available in the library and their relation to each other.

According to Vickery[7] "Classifying in its simplest terms means putting together things or ideas that are alike and keeping separate those that are different".

Classification of books is very significant to the organization of library materials. It enables books to be inserted into organized groups and through these means they may be returned to shelves after use. Without some form of classification the library materials

would be mixed up, the readers or librarian would find it almost impossible to retrieve anything. As a result of this important function classification is generally referred to as the foundation of librarianship.

The value of classification in retrieval is that at one stage or the other it cannot be avoided due to the basic function it provides to other retrieval devices. For example cataloguing and classification are complementary in nature in that, both used together refer the reader quickly from the catalogue to the shelves through the call number provided by classification that is indicated on the catalogue entries. Catalogue and classification are two basic retrieval devices used in any library.

Subject classification is the most important characteristic of a document classification. It is essentially a finding system for subject items. A more important characteristic of subject classification is that it is an artificial language, designed as a tool for and in the selection of information and store in response to search questions. It serves to standardise subject description so that the descriptions of a subject used by an indexer and inquirer are likely to coincide, thus maximising the chances of retrieving all items relevant to an inquiry.

3.9 Indexing

Indexing as the nerve centre of any retrieval device is the conceptual activities that go into evaluating and analysing the contents of information or library's resources. Such activities range from building index terms or descriptors thesaurus construction, operating search files to classification. A simpler expression of the concept is given as an intellectual evaluation of the subject content of a given document with the aim of determining the key words or terms which best express a published work. Subject indexing is the procedure by which document content is expressed in the artificial language of a particular retrieval system need.

Indexing is an intellectual evaluation of the subject content of a given document with the aim of determining the keywords or terms which best express the subject matter of the published work. The purposes of indexing as stated by McColvin[8] are: To facilitate reference to the specific item. To compensate as far as possible for the fact that a book can be written in one sequence, according to one plan; To disclose relationships; and To disclose omissions. Borko and Bernier[9] added to the purposes as follows: To answer questions of discovery and foster serendipity. To provide a comprehensive over-view of a subject field, and To give nomenclature guidance.

The process of indexing involves the scanning to select a set of words, phrases or sentences which collectively represent its subject. Also a decision is taken as to which of these subject descriptions are worth recording as being relevant subject descriptions are transferred into standard descriptors language used in the system. There are two types of indexing that are always used by a retrieval device. They are (i) precordinate indexing which coordinates separate concepts at the time of input e.g. Card catalogue. While (ii) post coordinate indexing means coordination of separate concepts at the time of inquiry (output) e.g. Optical coincidence system.

3.9.1 Conceptual framework to library catalogues use.

The library catalogue continues to be the most important and popular retrieval device in the library. Catalogue users consist of heterogeneous population and users of research libraries in Nigeria are to a large extent identical with their counterparts elsewhere.

For an effective use of library catalogues, there has to be acquisition of a minimum literacy. This requires that the user should have a knowledge of filing rules. It has been established that some users who are however, acquinted with the location of the materials they need by pass the catalogue and proceed straight to the shelves to acquire the needed materials. Though the librarians regard this as wrong approach, the users'

feeling is that it is a waste of time to go to the catalogue once the subject areas and shelves are familiar.

The catalogue as an information retrieval device especially in research libraries has been necessitated by the need for effective communication among scientists and technologists in order to stimulate thought and action by injection of, and interraction with, other people's ideas, knowledge, experience and achievements. It is also to promote continuous awareness of what others are doing so that an individual worker (or group) may know of developments in his own special field, in wider fields of discipline, science and technology. It helps diminish the probability of unwitting duplication of work and to save time and effort. It is equally to provide introductory and background information to unfamiliar fields and lastly to provide specific information and data needed for work in hand.[10]

Catalogue use studies have objectives which generally are:

1. providing the cataloguer and administrator with some useful ideas that will help in improving the catalogue usage.

ii. to provide useful access points to the library collections through efficient organization of the catalogues.

iii. To enable the cataloguer provide help in the areas where users need most.

iv. To enable him exclude such information that might not contribute to user need.

v. To enable him plan an effective instruction in catalogue use or recommend to the management establishment of a different information retrieval system.

vi. And to make him aware of such information that will enhance catalogue use.[11]

Users of library catalogues undertake different types of catalogue searches depending on their needs. There are two types of catalogue searches, namely known-item and subject searches. The processes involved in the two are not very similar. However, the searching task requires two different sets of responses from both the user and the library catalogues. Known-item[12] searches involve searching for a particular work or title in the library catalogue by its author or title. In subject search, the searcher is aware of the area of his search. He therefore looks for the records of work in question on that particular subject catalogue. Subject searching is somewhat complicating when a user approaches the catalogue with a heading that is not used in the catalogue. The catalogue,[13] through the use of cross references could direct the user from

the heading not used to the heading used. The user is required to have a knowledge of alphabetical listing of subject headings and some basic knowledge of the classification number in use.[14]

Catalogue Information - Information about a document is represented on a catalogue card. It is however, the practice of some libraries to adopt limited cataloguing for economic reasons while others give full bibliographic details of the document.

A card catalogue provides the user with such information, as the call number, authors names, title of the work, imprints, collation, bibliography if any, foot notes, tracings and accession number. The above information is indispensible for user to effectively consult catalogue.

Success and failure in catalogue searching are the two possibilities of catalogue use in a library. In order to achieve a successful known-item the user has to note the identification number of the items with the hope of using it in searching the shelves or making an inquiry at the loan desk. Also the correctness and completeness of the author's names play an important part of the success search. For example a work by S.A. Garba and has the author's name wrongly spelt as S.A. Garuba will result in futile search. This situation is generally referred to as user's failure since the card is in the catalogue but user fails to locate it.

On the other hand,a successful subject search demands that the user matches one or more query terms which meet up with his demand, thereafter the search is regarded successful if it yields positive outcome. This is to say the bibliographic information about known-item the searcher locates the wanted card and enventually retrieves the needed document.

Some search failures are as a result of number of reasons. The searcher perhaps might have come across the listed works in the catalogue or might possess some items or that the items are outdated and he needed items that are current or the needed item only appeared in the language not familiar. Collection failure arises when a wanted work that is included in library catalogue is not in the library collection.[15]

Characteristics of Catalogue users - Research libraries serve different types of users like Veterinary Surgeons, Non-veterinary surgeons scientists and the technologists. The characteristics of the users such as occupational status and academic background affect the type of search they perform, for example the Veterinary surgeons and non-veterinary surgeons, Scientists generally perform subject searches while the technologists perform known-item search because of the nature of job and level of information needed.

The frequency of catalogue use depends mostly on the users previous experiences and perhaps on their

attitude towards learning the skills involved. While some users felt uncomfortable because of the technicalities involved or others felt they know subject areas and the shelves.

Finally, effectiveness of a library card catalogue as retrieval device will to a great extent depend on its design.

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CHAPTER FOUR

BACKGROUND INFORMATION ON NATIONAL VETERINARY INSTITUTE AND ITS LIBRARY

4.1 Research Institute and its Library

The National Veterinary Research Institute, Vom was established in 1924. Its primary objective is to carry out research into diseases affecting the domestic animals of economic importance in Nigeria and to apply the results of that research to divising disease preventive and control measures including the development and production of vaccines.[1] Over the years the responsibilities of the Institute have been expanded to include research into all aspects of animals nutrition, the introduction of exotic livestock to improve meat, milk, and egg production, standardization and quality control of manufactured animal feeds and finally the training of livestock assistants, livestock superintendents, laboratory technicians and technologists.

The National Veterinary Research Institute (NVRI) currently produces fifteen types of vaccines, including rinderpest vaccine whose demand outstrips supply due to frequent outbreaks of rinderpest disease as result influx of cattle from the neighbouring countries.

Between 1975 and 1984 total doses of vaccines produced rose from 38,000,000 to 100,000,000 doses.[2]

Organizationally, the Institute is structured into divisions. These and their activities are as follows:-

1. Bacteriology division:- This division produces bacterial vaccines against bacterial diseases which cause deaths or inhibits full production potential to the Nigerian cattle. It is through this division that the Institute produces vaccines to protect livestock against anthrax, blackquarters, contagious bovine pleuropeneumonia, haemorrhagic septicaemia, fowl typhoid and fowl cholera diseases.

2. Virology division:- The main objective of this division is the determination of prevalence or incidence of all viral diseases of livestock including poultry and finding ways of controlling those of which are of major economic significance to the livestock industry. The division produces seven viral livestock and poultry vaccines in commercial quantities. These are vaccines against rinderpest, Newcastle (three types) fowl pox, rabies in cats and dogs and Gumboro diseases. The remarkable achievement of the division was its ability to raise rinderpest vaccine production from an average of five million to eleven million doses annually between 1980 and 1984.[3]

3. Diagnostic division - The main objective of this division is the provision of diagnostic services aimed at advising governments and individuals on how

to control livestock diseases.

4. Parasitology division - Carries out research into all parastic diseases of all livestock.

5. Training division - The Institute runs two schools. The College of Animal Health and Husbandry and School of Medical Laboratory Technologist. The two schools have expanded and improved their programmes over the years. While the first was established in 1944, the former was established in 1957. There are other supportive divisions like Administration, accounts, workshop and the library.

4.2 Future Plans

The institute has plans to set up vaccine production company separately from research activities. When fully established it is expected to manufacture vaccines and sera in large quantities to meet the entire needs of the country and export some of other African countries.
The Institute will also concentrate and intensify efforts on research leading to the development of new vaccines and passing on the technology to the new company.
Towards positively realization of the above goal, the Institute is building efficient and strong research and development data base for livestock development.
A modern research library being built will be equiped with computerised facilities where up-to-date records will be kept and made available not only to the

institute staff but serve as a reference library to other users throughout the country.[4]

4.3 The N.V.R.I. Library

The N.V.R.I. library was established in 1924 with similar objectives to thoseof its parent organization; these include provision, organization and storage of essential material for efficient information retrieval services, dissemination and circulation. The collection has steadily though not very impressivelygrown over the years. At present the library has about 40,000 total volumes of books and bound journals. The library subscribes to about 300 titles annually. It has about 300 volumes of reports, 7000 volumes of reprints and 400 volumes of slides (black and white).

The library maintains author/title, and classified catalogues. One part of the classified catalogue is the broad subject index catalogue that translates the natural language form into class number by which cards are filed. The classified catalogue itself have entries arranged according to the classification numbers.

4.4 Classification Scheme

The classification scheme in use inthe library is the Banard[5] scheme of classification, 1955 edition. The main schedules have been thoroughly revised, brought up to date and where necessary expanded.

There are over 3000 topics entered in the main schedules and allotted separate class-marks. By the use of the appropriate auxiliary schedules, however, this number can be multipled many times over. The specificity of the subject treatment has been increased in the second edition, 1955, by the addition of a third or fourth letter to the notation. Infact most highly specialized collection or even reprints can be adequately classified by the same without using more than two or three class-marks.

Examples of the classified titles are:

i. Introduction to Nematology - MN.AR
ii. Isolation and identification of avian pathogens - P.F
iii. Annual report AD
iv. Practical clinical biochemistry: hormones, vitamins, drugs and poisons - BEQU.NZ
v. Veterinary Science - X
vi. Poultry (veterinary) - XXUD
vii. An introduction to animal husbandry in the tropics - XW.03

Cataloguing rules - The library is still following Anglo-American cataloguing rules of 1967. It has not been possible to adopt the Anglo American Cataloguing rules (AACR II) of 1978 due to the problem of obtaining the manual. The library has intensified efforts to acquire copies of the manual and adopt it.

Below is the sample of a card catalogue showing detailed information, as contained in the National Veterinary Research Institute Library.

BEQU.NZ

V

VARLEY, Harold.

Practical clinical biochemistry; hormones, drugs and poisons, by Hard Varley, Allan H. Gowenlock and Mauriee Bell, 5th ed. Vol. 2, London, William Heinemann, medical Book.

5194 S.1976

xii, 402p; illus; 26cm

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CHAPTER FIVE

ANALYSIS AND INTERPRETATION OF FINDINGS

The focus in this chapter is on analysis and interpretations of finding of this study. The purposes, therefore include finding out the pattern of catalogue usage by users of National Veterinary Research Institute Institute (NVRI) library. The chapter goes further to enumerate the problems encountered during search and finally examines the effectiveness, adequacy of a card catalogue as an information retrieval device in N.V.R.I. library.

It is strongly believed that this chapter will among other things, provide useful information for improving or otherwise of the catalogue. This chapter uses tables to succintly present its findings.

Returns

Out of 80 copies of the questionnaire which were distributed to users of the NVRI library catalogue, 60 (or 75%) were returned. The characteristics of the sample are shown below.

Table 1: Characteristics of the sample.

Types of Users	No.	%
Veterinary surgeons	25	41.67
Non-Veterinary Surgeons	17	28.33
Technologists	18	30
Total	60	100

Table 2(a): Frequency of Catalogue use

Frequency Use	Veterinary Surgeons		Non-Veterinary Scientists		Technologists	
	No. Resp.	%	No. Resp.	%	No. Resp.	%
Daily	2	8	0	0	0	0
Twice a Week	5	20	3	17.65	2	11.11
Weekly	3	12	4	23.53	2	11.11
Monthly	0	0	2	11.76	5	27.78
Can't say	15	60	8	47.06	9	50
Never	0	0	0	0	0	0
Total	25	100	17	100	18	loo

Table 2(b): Frequency distribution of Catalogue use by the three groups

Catalogue use frequency	No	%
Daily	2	3.33
Twice a week	10	16.67
Weekly	9	15
Monthly	7	11.67
Can't say	32	53.33
Never	0	0
Total	60	100

On the issue of catalogue use frequency, the responses from Veterinary surgeons indicated as follows: 2(or 8%) of the respondents used the library catalogue

daily; 5(or 20%) of the respondents used the catalogue twice-a-week; 3(or 12%) of the respondents used the catalogue weekly, while no usage was recorded for monthly, 15(or 60%) of the respondents cannot say how often they used the catalogue and every body in the group used the catalogue at one time or the other. The frequency of catalogue use within the non-veterinary scientists group is as follow: there is no usage recorded for daily, 3(or 17.65%) of the respondents used the catalogue twice-a-week; 4(or 23.53%) of the respondents used the catalogue weekly; 2(or 11.76%) of the respondents used the catalogue monthly, 8(or 47.06%) of the respondents cannot say how often they used the catalogue, and everybody in this group also consulted the catalogue at one time or the other.

The responses from the technologists on catalogue use frequency recorded as follows: there is no usage indicated for daily; 2(or 11.11%) of the respondents used the catalogue twice-a-week; also 2(or 11.11%) used the catalogue weekly; 5(or 27.78%) of the respondents consulted the catalogue monthly; 9(or 50%) of this group could not determine how often they consulted the catalogue, while every body in the group used the catalogue at one time or the other.

From the above analysis, the following interpretations could be deduced. First, the data reveal that the majority of the respondents 15(or 60%),

8(or 49.06%) and 9 (or 50%) for veterinary surgeons, non-Veterinary scientists and technologists respectively could not say how often they use the catalogue. It could therefore be inferred that they only use the catalogue as the need arises. Also the data reveal that every user consults the catalogue at one time or other, It can be said that majority, 32(or 53.33%) of the overall respondents use the catalogue as the need arises and everybody uses the catalogue at one time or the other too. The non-daily use of the catalogue could be taken to mean partly because many are familiar with the sections of the shelves to look for materials of particular interest and the Selective Dissemination of Information (S.D.I.) services of the library enjoyed. This is to say they do not consider it necessary to visit the library often and use the catalogue to discover the existence of new materials since their interests have been noted and always taken care of. The 2(or 3.33%) of the respondents from the Veterinary surgeons group who used the catalogue daily could be regarded as some of the few users who did not indicate their areas/topics of interest as such are yet to benefit from the S.D.I. services of the library and may not be familiar with specific sections of the s helves so as to bypass or avoid the catalogue and go straight to the shelves to locate materials needed. Finally those who used catalogue twice-a-week, weekly and monthly demonstrated varying degrees of occasional use of the catalogue users.

Table 3: Use of Access points

Access Points	Veterinary Surgeons No. Resp.	%	Non-Veterinary Surgeons No. Resp.	%	Technologists No. Resp.	%
Author	6	24	4	23.58	3	16.67
Title	5	20	1	5.88	8	44.44
Subject	13	52	12	70.59	7	38.89
None	1	4	0	0	0	0
Total	25	100	17	100	18	100

The respondents were asked of the access points they always made use of. Among the veterinary surgeons group, 6(or 24%) of the respondents preferred the author access point, 5(or 20%) preferred title access point; 13 (or 52%) preferred subject access point while only 1(or 4%) did not make use of any of the access points.

The responses from the non-veterinary surgeon scientists indicated that 4(or 23.58%) of the respondents favoured author access point, 1(or 5.88%) favoured title access point, 12 (or 70.59%) of the respondents often usedsubject access point. Everybody in the group used one of access points provided.

The respondents from technologists group disclosed their popular access points as follows:

3(or 16.67%) preferred the author access point, 7(or 38.89%) favoured subject access point and 8(or 44.44%) preferred the title access point. Finally every user in the group uses one of the access points listed above.

The overall picture of the access point popularity shows that subject access point is most preferred by the veterinary surgeons and non-veterinary surgeons scientists, while the title access point is popular among the technologists. This could be taken to mean or reflect the degree and nature of research responsibilities or interests often undertaken within the groups While the scientists are heavily involved in research, that demand an indepth of knowledge of the related literature, the technologists are mainly involved in routine duties and analysis of research reports. This is to say the technologists are concerned with specific titles to obtain information needed to work while the scientists need to have a broad spectrum of information to research on specific areas.

Table 4: Usefulness of access points

	Vet. Surgeons		Non-Veterinary		Technologists	
	No. Resp.	%	No. Resp.	%	No. Resp.	%
Very helpful	5	20	6	35.29	4	22.22
Helpful	14	56	9	52.94	10	55.56
Not helpful	5	20	2	11.77	4	22.22
Others	1	4	-	-	-	-
Total	25	100	17	100	18	100

When the respondents were asked of the helpfulness of the chosen access points they replied as follows:
5(or 20%) of the respondents from veterinary surgeons found the chosen access point very helpful, 14(or 56%) of the

same group regarded the chosen access point as helpful, 5(or 20%) did not find the chosen access point helpful while 1(or 4%) of the respondents could not assess or determine its usefulness.

Within the non-veterinary surgeons group, the responses recorded are as follow: 6(or 35.29%) of the respondents were very satisfied with the chosen access point, 6(or 52.92%) indicated as helpful the chosen access point, 2(or 11.77%) regarded the chosen access as not helpful.

The technologists responses are as follows: 4(or 22.22%) of the users found the chosen access points very helpful, 10(or 55.56%) regarded the access point helpful, while 4(or 22.22%) did not find the chosen access point helpful.

It can be deduced from the data above that majority of the users from all the groups are generally satisfied with the chosen access points. It is also observed that the veterinary surgeons and non-veterinary surgeon scientists whose preferred access point is subject regarded it as "more useful" than the technologists whose popular access point is title. It could therefore be inferred that subject approach catalogue is most suitable in research libraries particularly if the treatment of subject headings are sufficient to locate the needed information.

The only respondent who did not indicate the usefulness of the access points could be regarded as a non-user, hence could not comment on its helpfulness.

Table 5: Kind of information or data often worked with

Kind of Information/ Data	Veterinary Surgeons		Non-Veterinary Surgeons		Technologists	
	No. of Resp.	%	No. of Resp.	%	No. of Resp.	%
Clinical Information	6	24	3	17.65	10	55.56
Drug usage	2	8	2	11.76	2	11.11
Disease reports	16	64	6	35.29	4	22.22
Others	1	4	5	29.41	2	11.11
Total	25	100	17	100	18	100

In respect of information or data usually needed to work with, the responses recorded are as follows: 6(or 24%) of the respondents from veterinary surgeons often needed clinical information 2(or 8%) were usually in need of information on drug usage, 16(or 64%) of the respondents showed that information on disease reports was very essential to their work while 1(or 4%) of the users did need information on unspecified work.

Within the non-veterinary surgeons the incidence of information or data needed to perform research is

indicated as follows: 3(or 17.65%) of the respondents were always in need of clinical information, 2(or 11.76%) of the respondents favoured drug usage, 6(or 35.29%) usually worked with information on disease reports while 5(or 29.41%) of the users were often in need of information on animal production and nutrition to carry out research.

Lastly the technologists' preferred information to work with are as follows: 10(or 55.56%) of the respondents often needed clinical information, 2(or 11.11%) of the users always needed information on drug usage, 4(or 22.22%) could not perform their work effectively without information on disease reports while 2(or 11.11%) of the users usually needed unspecified information to carry out routine job.

The findings above reveal that the need for information to perform clinical duties is highest 10(or 55.66%) among the technologists compared the veterinary surgeon and non-veterinary surgeons with 6(or 24%) and 3(or 17.65%) respectively. The data further reveals that "disease reports" information is most needed by the respondents among veterinary surgeons, 16 (or 64%) compared to non-veterinary and technologists with 6 (or 35.29%) and 4(or 22.22%) respectively. While it could be deduced from the data obtained that the incidence of information needed to work on animal nutrition and animal reproduction is highest among non-veterinary surgeons as

compared with 1(or 4%) and 2(or 11.11%) of veterinary surgeons and technologists in that order.

Table 6: Specificity of subject treatment in the catalogue

	Vet. Surgeons		Non. Vet. Surgeons		Technologists		Overall Responses	
	No. of Resp.	%	No. of Resp.	%	No. of Resp.	%	No. of Resp.	%
Yes	9	36	3	17.65	8	44.44	20	33.33
No	16	64	14	82.35	10	55.56	40	66.67
Total	25	100	17	100	18	100	60	

The respondents were asked if the treatment of subjects in the catalogue is detailed enough to permit the location of specific topics of interest. Their responses indicated that within the veterinary surgeons, 9(or 36%) of the users did find it sufficient to locate topics of interest, and 16(or 64%) did not confirm its treatment of subject headings adequate to locate specific topics of interest.

The non-veterinary group's responses indicated that 3(or 17.65%) regarded the subject headings of the catalogue detail enough to locate topics of interest while 14(or 82.35%) did not consider the subject headings sufficient to locate specific information of interest.

Within the technologists, 8(or 44.44%) of the respondents answered in the negative while 10(or 55.56%) answered in the affirmative.

From the above analysis it can be concluded that non-confirmation of the majority of the respondents from all the groups is an indication that the treatment of subject headings in the National Veterinary Research Institute library catalogue is not detailed enough to facilitate quick retrieval of topics of interest to users. The overall responses equally show that 40(or 66.67%) of the users reported that the subject headings in the catalogue were not specific. While 20(or 33.33%) of the users reported that the subject headings in the catalogue were specific.

Table 7: Desire for establishment of alternative information retrieval system.

	Vet. Surgeons		Non-Vet Surgeons		Technologists		Overall Responses	
	No. of Resp.	%	No. of Resp.	%	No. of	%	No. of	%
Yes	16	100	13	92.86	8	80	37	92.50
No	-		1	7.14	2	20	3	7.50
Total	16	100	14	100	10	100	40	100

Those respondents who had previously indicated the existence of inadequacy in the subject headings of the catalogue were asked if they would prefer an alternative information retrieval system. The responses from veterinary surgeons, 16(or 100%) in favour of another one were unanimous. In the case of non-veterinary

surgeons, 13(or 92.86%) of the users indicated their preference for another one, while 1(or 7.50%) of the respondents did not want any change. Finally the technologists, 8(or 80%) of them showed interest in establishment of alternative information retrieval system. However, 2(or 20%) of users in this group still prefer the current retrieval device to any other one. Lastly the overall responses from all groups 37(or 92.50%) showed that majority were in favour of establishing alternative retrieval device, while of course the minority, 3(or 7.50%) of all respondents were not in support of any change.

From the above, it can be deduced that the card catalogue in NVRI library is not performing satisfactorily hence the majority are yearning for a change.

Table 8: Success in the catalogue use

Success	Vet. Surgeons		Non-Vet Surgeons		Techno-logists		Overall Responses	
	No. of Resp.	%	No. of Resp.	%	No.of Resp.	%	No. of Resp.	%
Yes	17	68	11	64.71	11	61.11	39	65
No	8	32	6	35.29	7	38.89	21	35
Total	25	100	17	100	18	100	60	100

The respondents were asked whether they were usually successful in their catalogue use. Responses from all the groups are as follows: 17(or 68%) of the users from veterinary surgeons confirmed their success while

8(or 32%) did not confirm it. 11(or 64.71) of the respondents from non-veterinary surgeons answered in the affirmative while the balance of 6 (or 35.29%) of users in the group gave negative responses. Lastly 11(or 61.11%) of technologists recorded success as against 7 (or 38.89%) who did not often record success at catalogue use. The overall situation among all the groups indicated that those who were always successful are 39 (or 65%) compared to 21 (or 35%) who were not always successful in their use.

It can be observed that those who were always successful in their catalogue search are more but considering the importance of the library in Research Institutes in general and the important role information plays in research inparticular the figure is not goodenough. This is so because the groups being studied by this researcher are those involved in active research works in the institute.

Table 9: Catalogue use instruction

Cat. Inst.	Vet. Surgeons		No. Vet. Surgeon Scientists		Technologists		Overall groups Responses	
	No.of Resp.	%	No. Resp.	%	No. of Resp.	%	No.of Resp.	%
Yes	18	72	12	70.59	14	77.78	44	73.33
No	7	28	5	29.41	4	22.22	16	26.67
Total	25	100	17	100	18	100	60	100

The respondents were asked if they received instruction on how to use the catalogue. Their responses

show that 18(or 72%), 12(or 70.59%) and 14 (or 77.78%) from veterinary surgeons, non-veterinary surgeon scientists and technologists respectively received instruction on how to make use of the catalogue while 7(or 28%) 5 (or 29.41%) from veterinary surgeons, non-veterinary surgeons and technologists in that order did not avail themselves for orientation on catalogue use. The overall responses from all the categories of users showed that 44 (or 73.33%) received instruction on catalogue usage while 16(or 26.67%) did not receive it.

This researcher observed that even though a high percentage of the respondents 44(or 73.33%) received instruction on catalogue use, a lesser percentage, 39 (or 65%) confirmed their success at catalogue use. It can therefore be inferred as follows:

i. the catalogue use instruction given to the users is not adequate to enable them use the catalogue effectively,

ii. the insufficient subject headings in the catalogue and other likely short-comings of the card catalogue are largely responsible for the difference

Table 10: Usefulness of the catalogue use instruction

Value of Cat.	Vet. Surgeons		Non-Vet. Surgeon Sc.		Technologists		Overall Responses	
	No.of Resp.	%	No. of Resp.	%	No. of Resp.	%	No.of Resp.	%
Yes	2	11.11	1	8.33	3	21.43	6	13.64
No	16	88.89	11	91.67	11	78.57	38	86.36
Total	18	100	12	100	14	100	44	100

Those respondents who had a confirmed their receiving library education on catalogue use were requested to decide its usefulness. The responses from all the categories of users are listed below: 16 (or 88.89%), 11 (or 91.67%) and 11(or 78.57%) of veterinary surgeons, non-vet surgeons and technologists respectively did not find it helpful in their subsequent catalogue searches; while 3(21.43%) 1(or 8.33%) and 3(or 21.43%) in the former order did regard the instruction useful in their later searches of the catalogue. The overall responses from all the groups indicated that 38(or 86.36%) of those users who enjoyed orientation course did not find useful as against 3(or 13.64%).

At this stage, it can be deduced that even though the catalogue use instruction given to users may not be comprehensive enough to ensure smooth or easy consultation with the catalogue, the information provided in the catalogue entry are equally not sufficient to facilitate satisfactory use of the catalogue.

Table 10(b): Can do without catalogue use instruction

	Vet. Surgeons		Non-Vet Surgeons		Technologists		Overall Responses	
	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%
Yes	7	100	5	100	3	75	15	93.75
No	-	-	-	-	1	25	1	6.25
Total	7	100	5	100	4	100	16	100

Those respondents who did not receive library education on catalogue use were asked if it was as result of self confidence. The affirmative responses obtained are as stated below; 7(or 100%), 5(or 100%) and 3(or 75%) of the total respondents came from veterinary surgeons, non-veterinary surgeons and technologists respectively; while negative response came from only 1(or 25%) from the technologists.

The interpretation that could be made is that they had acquired some experience on catalogue use from previous libraries of the institutions of learning attended. However, this reason may not be enough to refuse instruction on catalogue usage, moreso as the catalogue of any two libraries may not be the same because of the collections of any two libraries cannot be the same.

Table 11: Has the library catalogue short-comings?

Has Cat. short comings	Vet. Surgeons		Non-Vet Surgeons		Technologists		Overall Responses	
	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%
Yes	15	93.75	11	100	10	90.91	36	94.74
No	1	6.25	-	-	1	9.09	2	5.26
Total	16	100	11	100	11	100	38	100

The groups of users who did not find the orientation on catalogue use helpful (as indicated in Table 10(a)) were asked among other things whether they would say the catalogue has any short-comings that might have contributed to the low ratings. With the exception of 2(or 5.26%) all other users 36(or 94.74%) from all categories confirmed that the catalogue has short comings. In fact this confirmation was unanimous among the non-veterinary scientists while one each from veterinary surgeons and technologists did not confirm it.

From the data above, the National Veterinary Research Institute library card catalogue has some obvious shortcomings which reduce its satisfactory performance and render it ineffective. The point now is what are the short-comings?

Table 12: Short-comings of the catalogue.

Every respondent who had said there were shortcomings in the catalogue were asked to state or list such

noticeable lapses. The frequency count of each particular shortcomings listed was taken and expressed against the total frequency account.

Shortcomings of the Catalogue	Frequency Count	%
1. Lack of sufficient subject headings	32	41.56
2. Inability to present information in the form most useful	24	31.17
3. Confusing and/Misleading entries	21	27.27
Total	77	100

From the above table, 32 (or 41.56%) frequency counts were recorded in respect of the catalogue's insufficient subject headings to facilitate location of specific information or topics. Twenty-four frequency counts or 31.17% were in respect of the catalogue's inability to present information in the form most useful and needed; while 21 (or 27.27%) frequency counts were in-support of confusing and/misleading entries in the catalogue. The above could rightly and equally be expressed as follows: 32 out of 36 (or 88.89%) respondents who noticed the shortcomings in the catalogue said such lapses included "lack of insufficient subject headings", while 24 out of 36(or 66.67%) said such lapses included "inability to present information in the form most useful" to research of the users; and finally 21 out 36 (or 58.33%) said "confusing and/misleading entries"

were a noticeable weaknesses of the catalogue.

From the analysis above, it can safely be said that all the stated weaknesses of the catalogue have deprived the research activities of the National Veterinary Research Institute workers of valuable information.

Table 13: Ease of Classification number

Ease of Class.	Vet. Surgeons		Non-Vet Surgeons		Techno-logists		Overall Responses	
No.	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%
Yes	18	72	12	70.59	11	61.11	41	68.33
No	7	28	5	29.41	7	38.89	19	31.67
Total	25	100	17	100	18	100	60	100

On the issue of understanding the use of classification number, the responses from veterinary surgeons showed that 18(or 72%) had no difficulty while 7(or 28%) encountered problems in understanding and using it to locate materials from the shelves. Responses from non-veterinary surgeon scientists revealed that 12(or 70.59%) were not encountering any difficulty as against 5(or 29.41%) who were always finding it difficult to use; and lastly responses from the technologists indicated that 11(or 61.11%) found the classmarks easy to understand and use while 7(or 38.89%) could not use it effectively. The outcome of the total responses showed that majority 41(or 68.33%) had little or no problems with the classification mark even though 19

(or 31.67%) indicated otherwise.

The data analysed above showed vividly that not all those who received library use education could make satisfactory use of the classification number in an attempt to locate materials. The close range between those who receive library use instruction 44(or 73.33%) and those who could make effective use of the classification number, 41(or 68.33%) shows that user's problems of unsatisfactory searches have no strong root in classification mark but in subject headings scheme in use. This claim can be justified from the facts before this writer. First 38(or 86.36%) of the respondents who received library instruction did not find it helpful in their subsequent searches; however, an impressive number, 41(or 68.33%) said the problem of unsuccessful searches was not with classification mark as they could easily use to locate materials but the materials so located were not always the wanted ones. From the ongoing therefore, the main cause of unsatisfactory search is that the headings brought by users are not always available in the catalogue even though the documents containing them might have been acquired by the library.

Table 14: Use of Library Catalogue to Obtain Bibliographical Information by Users

Additional biblio. Inf.	Publisher		Date of Publication		Edition		No. of Pages		Illustration	
	No.	%	No.	%	No.	%	No.	%	No.	%
Useful	43	71.67	43	71.67	42	70	6	10	3	5
Not Useful	17	28.33	17	28.33	18	30	54	90	57	95
Total	60	100	60	100	60	100	60	100	60	100

The respondents were asked to indicate the usefulness of the additional information found in the body of the catalogue entry. The outcome of this study with reference to this particular area is very significant in determining among other things if standardization should be waived to provide for or protect location of local interest. From the table above, responses from all categories of users indicated that 43(or 71.67%) often found useful the publisher of a document, while 17(or 28.33%) did not find it a useful information on a catalogue. Also 43(or 71.67%) always regarded place of publication a useful information in their catalogue use while 42(or 70%) considered the statement of edition vital in the cause of catalogue search for a particular document, while 18(or 30%) could always use a particular document without regard to its edition. The tide of responses from the users changed

drastically in the rate of value ascribed to pagination and illustration, as only 6(or 10%) and 3(or 5%) of the users found them useful in that order, while the majority 54(or 90%) and 57 (or 95%) regarded the provision of pagination and illustration respectively, as unproductive venture.

The interpretation that could be made from the analysis above is that the majority of the respondents do not attach importance to statements of pagination and illustration but regard them as the librarian's information. This goes to answer one of the research questions this study is to provide answers for. It can be inferred that the none use of pagination and illustration is as a result of little or no importance attached to them as a means of locating information.

However, inspite of the fact that the basic objective of descriptive cataloguing is to state the significant feature on an item with the purpose of distinguishing it from other object as to its scope, contents and bibliographic relation to other items, this objective should be pursued in such a manner that it does not jeopardise the interest of the users. At this stage it is important to state that standardization in library operations should not dictate the pace and peculiarities of users' needs. This is to say that the library should not chase shadows, but the objects. This statement is very relevant in respect of value judgement already

passed on pagination and illustration by respondents in this research. The responsibility of the library among others is to ensure effectiveness of the catalogue by improving its headings and other information vital to users work.

Table 15(a): Primary Source of Approach

Primary source of approach	Vet. Surgeons		Non-Vet. Surgeons		Technologists		Overall Scores	
	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%	No.of Res.	%
Searching the Shelves	3	12	5	29.41	4	22.22	12	20
Asking a Collegue	15	60	8	47.06	3	16.67	26	43.33
Using library catalogue	5	20	3	17.65	3	16.67	11	18.33
Asking library staff	2	8	1	5.88	8	44.44	11	18.33
Total	25	100	17	100	18	100	60	100

The respondents were asked of their first source of approach whenever they were in need of a job-related information. The purpose of asking this particular question is to further an avenue where the library catalogue could be assessed in relation to other sources of getting information available to users of N.V.R.I. library. It is hoped that the responses to this question would provide a basis for clarification and subsequent generalization on issues that border on the credibility of the card catalogue as an

indispensable document in accomplishing research activities of NVRI workers and contributions if any made towards attaining the overall objectives of the parent organization.

The analysis of the data is as follows: Within veterinary surgeon group, 3(or 12%) of the respondents searched the shelves, 15(or 60% approached colleagues, 5(or 20%) used the library catalogue while 2(or 8%) asked the library staff. Among the non-veterinary surgeons scientists, 5(or 29.41%) searched the shelves, 8(or 47.06%) asked their colleagues, 3(or 17.65%) used the library catalogue and 1 (or 5.88%) requested the assistance of library staff. For the technologists 4(or 22.22%) made their ways to the shelves, 3(or 16.67%) consulted the library catalogue, 3(or 16.67%) went to their colleagues and 8(or 44.44%) made use of library staff.

It can be inferred that the much emphasis placed on asking colleagues for information related to duties by veterinary surgeons and non-veterinary scientists can be likened to the existing tradition among scientists all over the world that they prefer getting information from colleagues as first source towards meeting information needs. In the like manner, the few responses recorded among veterinary surgeons and non-veterinary surgeons in the use of library staff as first source of approach when seeking information related to their job could be as a result awareness or knowledge of other sources they could use to obtain the information.

The technologists are the group that performs lot of routine or bench work and they prefer using library staff most of the time; because of their generally low knowledge of research that promotes, developes, and improves their field of interest. The poor use made of library catalogue virtually by all groups might be as a result of the difficulties encountered in using it and unsatisfactory result that usually accompanies most searches. Also it could be inferred that the information in the catalogue is generally not adequate to enable users locate specific information on their jobs. This claim can be substantiated by responses from Table 6, where 64%, 82.35% and 55.56% of veterinary surgeons, non veterinary surgeons and technologists respectively have responded negatively to the specificity of subject headings established in the catalogue.

Finally from the foregoing interpretations, and earlier analysis, it can be said to some extent that the library catalogue does not compare favourably with other sources of getting information in NVRI library; the credibility of the library is questionable and finally its contributions towards attaining its parent objectives, do not justify its existence, and are below expectation.

Table 15(b): The Time Factor in Getting Information

Period of Time	Veterinary Surgeons		Non-Vet. Surgeons		Technologists	
	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%
Few minutes	12	48	7	41.18	5	27.78
Few hours	6	24	5	29.41	7	38.89
Few days	7	28	5	29.41	4	22.22
Few weeks	0	0	0	0	1	5.56
Few months	0	0	0	0	0	0
Total	25	100	17	100	18	100

On the issue of how long it takes to obtain information from the particular sources indicated in Table 15(a) in respect of users' first source of approach when in need of a job-related information, responses from all categories of users revealed that 12(or 48%) of veterinary surgeons and 7(or 41.18%) of non-veterinary surgeons who sought firstly the assistance of colleagues when in need of information got it within a few minutes while only 5(or 27.78%) of the technologists who approach library staff firstly received it within few minutes. However, it is encouraging that with the exception of one respondent from technologists, information gathering did not take up to one month. Of particular interest to this writer is the time it took those who went through the catalogue to obtain information. The responses showed that 5(or 20%) and 3(or 17.65%) of

veterinary surgeons and non-veterinary surgeons respectively got such information earlier than the technologists, 8(44.44%) who went through the same source. This confirms the earlier claim that scientists are generally more effective in the use of library facilities. The fact that the technologists who preferred library catalogue and staff more than any other group took longer time in obtaining the information confirms that library catalogue, apart from lacking in specificity in treatment of subject headings, does not make for quick location of information.

Table 16(a): Nature of information usually in need of

Nature of Information	Vet. Surgeons		Non-Vet Surgeons		Technologists		Overall Responses	
	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%
Specific fact	16	64	10	58.82	11	61.11	37	61.67
Detailed analysis	9	36	7	41.18	7	38.89	23	38.33
Total	25	100	17	100	18	100	60	100

The need to know how users would prefer information they consider vital and valuable to good performance of their works is always a vital impetus to the effective services that the library provides.

On the nature of information often in need of in order to satisfy a want, 16(or 64%) of the respondents from the veterinary surgeon group showed preference for specific

facts while 9(or 36%) usually preferred detailed analysis to enhance objectivity in deciding on the facts so presented. In the likemanner, 10(or 58.82%) of non veterinary surgeons indicated their interest for specific facts while 7(or 41.18%) declared their stand for detailed analysis. The technologists whose duties among other things involved interpretation of results obtained from laboratory tests production of various vaccines to present and cure various animal diseases showed a high interest, 11 (or 61.11%) for specific facts while of course 7(or 38.89%) who perform research in addition to the above preferred their facts in detail.

The following interpretation could be made from the above analysis:

i. that the majority of users in each group usually need specific bits of information to perform their jobs, especially those who are involved in vaccines production in addition to research,

ii. that those who are engaged in research and publication usually prefer detailed analysis of facts not only to provide them with background of field of research but to afford them put up objective criticisms, particularly if the research is a replica of earlier one.

Table 16(b): Adequacy of the card catalogue in providing Information in the most desired form.

Retrievability	Vet. Surgeons		Non-Vet Surgeons		Techno-logists		Overall Responses	
	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%
Yes	6	24	4	23.53	3	16.67	13	21.67
No	19	76	13	76.47	15	83.33	47	78.33
Total	25	100	17	100	18	100	60	100

Having established the nature of information that users prefer, as revealed in Table 16(a), table 16(b) presented data on how adequately the card catalogue provided such information in the most desired form. Responses from all categories of users revealed as follows: 6(or 24%) and 19 (or 76%) of veterinary surgeons answered in the affirmative and in the negative respectively 4(or 23.53%) and 13 (or 76.47%) of non veterinary surgeons confirmed and did not confirm respectively; and finally 3(or 16.67%) and 15(or 83.33%) answered in the affirmative and in the negative in that order. The aggregate of all responses showed that while 13(or 21.67%) considered the catalogue adequate in providing information in the most preferred form, majority, 47(or 78.33%) regarded the card catalogue of NVRI library inadequate.

This researcher, based on the above analysis draws analogy between these users who were always successful in using the catalogue and those who actually

retrieved the information in the most desired form. While 39(or 65%) of the users indicated their usual success at the catalogue search, it can be inferred that only 13(or 21.67%) of them got the information in the most desired form, meaning that the majority often compromised. This further confirms the lack sufficient subject headings in the catalogue.

Table 17: Purpose of seeking information

Purpose	Vet Surgeons		Non-Vet Surgeons		Technologists		Total	
	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%
Generally keeping up to date	19	46.34	10	24.39	12	21.27	41	100
Research purposes	23	45.10	17	33.33	11	21.57	51	100
Preparation of papers for publication	18	41.86	13	30.23	12	27.91	43	100
Dealing with Clinical problem	7	43.75	1	6.25	8	50	16	100
Others (specified)	-	-	-	-	3	100	3	100

The intention of this study as stated earlier, among things is to provide the cataloguer with information that would enhance his efficiency and provide users with information relevant to their needs while constructing the catalogue. In pursuance of the above, users were asked to indicate their purpose(s) of seeking information. Those in favour of keeping-up-to-date, out of 41(or 100%)

19 (or 46.34%) were veterinary surgeons, 10 (or 24.39%) were non-veterinary surgeons and 12(or 29.27%) were technologists. The total responses in respect of Research purposes" was 51(or 100%), out of which veterinary surgeons were 23 (or 45.10%), 17 (or33.33%) were non-veterinary scientists and 11 (or 21.57%) were technologists.

The total responses in favour of "Preparation of papers for publication" was 43 (or 100%). Of this, 18 (or 41.86%) were veterinary surgeons, 13(or 30.23%) were non-veterinary surgeons and 12 (or 27.91%) were technologists.

The overall responses in support of "Dealing with clinical problem" provided that out of 16 (or 100%), 7 (or 43.75%) were veterinary surgeons, 8(or 50%) were technologists and 1 (or 6.25%) was a non-veterinary surgeon.

The interpretation of the above is that, while the veterinary surgeons were most interested in seeking information to prepare papers for publications, the non-veterinary surgeons were of greatest interest in seeking information for the purpose of research. Finally the technologists were the only group of respondents that declared purpose of seeking information in order to equip them mentally with laboratory analysis and techniques. Generally all

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groups showed remarkable interest in updating their knowledge and keeping pace with recent developments in their fields of specialization.

Table 18: Difficulty in locating materials from the Shelves on the declared areas of interest in table 17.

Location of Materials	Vet Surgeons		Non-vet. Surgeons		Techno-logists		Overall Responses	
	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%	No.of Resp.	%
Yes	20	80	12	70.59	13	72.22	45	75
No	5	20	5	29.41	5	27.78	15	25
Total	25	100	17	100	18	100	60	100

The respondents were asked if they encountered any difficulty in locating materials from the shelves. The responses in this regard indicated that, 20(or 80%) of veterinary surgeons encountered some problems while 5(20%) did not. 12(or 70.59%) of the non-veterinary surgeons did confirm while 5(or 29.41%) did not confirm it. Finally 13(or 72.22%) of the technologists answered in the affirmative as against 5(or 27.78%) who gave negative responses. The entire responses indicated that 45(or 75%) of the users encountered some difficulties in locating materials from the shelves, while 15 (or 25%) did not.

Table 19: Reasons for encountering difficulty in locating materials from the shelves.

Reason for difficulties encountered	No.of Resp.	%
The information in the catalogue is not adequate to facilitate its retrieval and sometimes in conflict with that of the shelves	30	66.67
Misshelving	28	62.22
The wanted item on loan	14	31.11
Delay in shelving after previous use	22	48.89

The respondents were asked to state the reasons for having problems in locating materials from the shelves. Some 45(or 75%) of the overall respondents who had indicated there were difficulties in locating materials in Table 18 were further requested to state the reasons for such difficulties. Some 30 (or 66.67%) of the respondents claimed that the information in the catalogue were sometimes not the same as that of the shelve guidesand the material itself. Some 28(or 62.22%) put their difficulty in locating materials from shelves on misshelving of such items. Some 14(or 31.11%) of the users were of the view that lack of proper record of the where-about of materials often led to the searching the shelves while the itemsneeded were on loan. And finally owing to delay in re-shelving returned materials some 22 (or 48.89%) of the users often conducted unsuccessful searches in the shelves.

The interpretation is that majority of the users encountered problems in locating materials from the shelves, and this was caused by the shortcomings of the catalogue. Though this writer is of the view that no library catalogue could meet all the needs of its users it should strive to meet the needs of the majority.

Table 20: Summary of suggestions for the improvement of catalogue use and the entire library services.

Summary of Suggestions	Frequency Count	%
Establishment of mechanized information retrieval system that will facilitate quick location of specific topics/information	52	86.67
Computerization of the entire library complex services	48	80
The present card catalogue could be retained inaddition to the mechanized one with modifications in its subject treatment to make room for specificity.	44	73.33
There should be frequent up dating of the catalogue cards to forstall outdated catalogue entries, and weeding away of cards whose books are no longer in the library.	43	71.67
There should be constant shelves reading to avoid or minimise misshelvings that is now rampat	42	70
Some of the information in the catalogue are too technical hence they should be made simpler or reduced to enable the layman use it	40	66.67
All journal articles relevant to the work of the institute should be catalogued	40	66.67

There should be provision for abstracts, summaries of topics treated at back of catalogue cards.	38	63.33
Selective Dissemination Information (S.D.I) Service should be extended to all library users engaged in reseach to both minimise hours spent looking for what is available and to keep them abreast of the happenings in their fields.	38	63.33
New materials acquired should be placed on display before shelving.	38	63.33
All topics considered to be relevant to the research activities of the institute in any book should be catalogued rather than just the book only, to facilitate use.	35	58.33
At present subjects/topics like microbial genetics, clostridial diseases, leptrospirosis, Morphology, vaccines production/ development, nutritional biochemistry, outbreak of rinderpest disease in Nigeria, are either not available in the library collection or not adequately treated in the library catalogue.	33	55
Assistance to library users should not be restricted to library assistants only who in most cases not competent.	32	53.33
The charging system is very poor, evolve a better one.	32	53.33
There is need to create more space to shelve books. The solution lies in quick completion of new library building complex	31	51.67

The entire respondents, 60 (or 100%) were given the opportunity to comment and suggest ways that could bring about the catalogue use and as well as in the entire library services. Table 20 above shows the summary of the suggestions.

The aggregate number of respondents is taken as frequency count and expressed in percentage to overall possible respondents to each suggestion.

The incident of insufficient subject headings to facilitate quick location of specific topics was expressed by almost every respondent where 52 (or 86.67%) suggested the creation of another retrieval device that could correct imbalance and take care of the shortcomings of the present card catalogue. Some 48 (or 80%) of the users went as far as advocating for computerization of the entire library operations. This researcher is of the view that, based on the nature of research activities being undertaken by the users, specific data are often needed which the present retrieval device cannot adequately provide. Some of such activities include production of vaccines to eradicate rinderpest, rabies and other deadly animal diseases some of which are communicable from animals to human beings. This writer, therefore supports the establishment of a mechanized information retrieval system to provide some of information the present card catalogue could not be used to obtain, however, the present card catalogue should in addition be retained.

Of equal concern is the fact that the non-listing of some topics and subjects in the catalogue is hindering the location of such topics and subjects. Some 33(or 55%) suggested the inclusion of such topics.

The problem here is the level of indexing in the library. The indexing of subject contents of documents in National Veterinary Research Institute library is generally not detailed. The library uses Library of Congress Subject Headings (LCSH) without any modifications to cater for local interests or peculiar needs of the library. By accepting LCSH without necessary modification, some of the subject contents of documents are often not adequately covered. It is not uncommon for users to be turned back by the library if the subject headings brought to the library are different from the ones they used in the catalogue. Indexing is the nerve centre of any retrieval device and its activities include evaluating and analysing the subject content of a work. It is observed too that the keywords or terms which best express the subject matter of some documents are not adequately provided for in LCSH.

Conclusion

This chapter analysed and interpreted the information collected on data based on the examination of the frequency of catalogue use; reasons for its poor use; established patterns of catalogue search and various access points popular among the groups of users; the nature of information needed and

the adequacy of the card catalogue in providing it within a short period, specificity of subject catalogue, successful and unsuccessful searches, effects of catalogue use instruction on the use of catalogue to locate materials, effects of subject headings particularly LCSH scheme on the identification of materials; ease of use of classification number; obstacles on the location of materials from the shelves and suggestions by the users aimed at improving catalogue use and library services in general.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This final chapter presents a summary of the findings, draws conclusions and makes recommendations. The practical implications of the study to National Veterinary Research Institute library are also discussed with some recommendations.

The present study was designed to investigate the effectiveness and search patterns of National Veterinary Research Institute (NVRI) library card catalogue by its users.

Objectives of the study

The objectives of the study may be re-stated as follows:

1. To study the search patterns of users of the National Veterinary Research Institute (NVRI) Library card catalogue;

ii. To assess the extent to which the NVRI Library catalogue meets the information requirements of its users;

iii. To enable the cataloguer determine which information that users look for that is best provided through the use of automated information retrieval system considering the fact that the library is seriously thinking of automating its retrieval system;

iv. To provide library users with better access to the collection through card catalogue;

v. To enable the cataloguer determine which bibliographical information currently provided in the catalogue entries are not made use of by library patrons.

vi. To find out the problems encountered by users while searching the catalogue; and

vii. To suggest possible solutions to the problems

Summary of Findings

The National Veterinary Research Institute Library catalogue is used by 32(or 53.33%) of the respondents. Only 2 (or 3.33%) of the overall respondents used the catalogue daily. The non-daily use of the catalogue by many of the users was partly attributed to the Selective Dissemination of Information (SDI) services offered by the library which required that materials be carried to them in their offices and laboratories and their familiarity with the relevant sections of the shelves, in which case, they prefer browsing to using the catalogue. This phenomenon of carrying information to

users offices is typical of special libraries where personalised information service features prominently.

The access points preferred by various groups of respondents are related to the characteristics of the users; there is high preference for subject catalogue searches among all research scientists but higher among the non-veterinary surgeon scientists with 12(or 70.59%). Author/title access point is more popular among the technologists with 11(or 61.11%). Those respondents who took to known-item search chose author's name and title as access points; and such users used the catalogue mainly for its directional function (for finding where to look in the library for needed materials) whereas those respondents who approached the subject catalogue, mainly research scientists used it to discover what the library has on various subjects. 33(or 55%) of the respondents regarded their chosen "approaches" helpful.

With regard to the kind of information often needed to work with, "clinical information" was most needed by technologists with 10(or 55.56%) responses, while information on disease reports was most preferred by veterinary surgeons with 16(or 64%) responses and non-veterinary surgeons preferred most, information on animal nutrition and production with 5(or 29.41%) responses.

Some 40(or 66.67%) of the users reported that the subject headings in the card catalogue were not detailed enough to facilitate the location of some specific topics while

20(or 33.33%) considered the subject headings adequate. Of those who considered the subject headings in the catalogue insufficient, 37 (or 92.50%) favoured the establishment of another information retrieval system that could permite the quick location of specific topics while 3(or 7.50%) did not.

Success and failure rates in the use of the catalogue revealed that 39(or 65%) of the users were successful in their searches while 21(or 35%) were not.

Some 44(or 73.33%) of all respondents received library catalogue instruction while 16(or 26.67%) did not. However, 38(or 86.36%) of those who received catalogue use instruction did not find it helpful in their subsequent encounter with the catalogue, while 6(or 13.64%) respondents found it useful. 16(or 26.67%) of those who did not receive library catalogue use instruction stated that they did not consider it necessary.

Of the users who did not find library catalogue use instruction useful, 36(or 94.74%) stated that the catalogue has shortcomings and the shortcomings were listed and justified as follows: 32(or 88.89%) stated that the catalogue lacks sufficient subject headings to facilitate retrieval of some specific topics while 4(or 11.11%) did not comment; Some 24(or 66.67%) of the users stated that it cannot present information in the form most needed by users while 14(or 58.33%) of the

respondents said the catalogues lapses include confusing and misleading entries.

With regards to the classification numbers, 41(or 68.33%) of the entire respondents had no problem in understanding and using them against 19 (or 31.67%) who could not. 57(or 95%) of the respondents who constituted the majority, did not find the provision of bibliographical information like "pagination" and "illustration" in the body of catalogue entries useful.

It was also determined that veterinary surgeons and non-veterinary surgeons preferred asking colleagues first when in need of information related to their job. This was supported by 15(or 60%) for veterinary surgeons and 8(or 47.06%) for non-veterinary surgeons, while the technologists preferred using the library staff to obtain such information. This was supported by 8(or 44.44%) respondents. Those who contacted colleagues were more successful and obtained such information within a shorter period compared with those who made use of other sources. This was supported by 12(or 48%) of the veterinary surgeons who got the needed information within "few minutes" as against 5(or 27.78%) of the technologists who made use of other sources and got it within "few minutes".

On the nature of information usually preferred, 37(or 61.67%) of all respondents preferred "specific facts" while 23(or 38.33%) of them preferred "detailed analyses" of information to satisfy research and publication needs.

As much as 47(or 78.33%) of all the respondents did not retrieve such information, even though 39(or 65%) reported their success at the catalogue search; most of such materials retrieved were not in the most preferred form but used as compromises or alternatives.

It was established that 17(or 100%) of non-veterinary surgeons sought information to perform research in addition to other activities while 23(or 92%) of the veterinary surgeons also sought information to perform research.

The technologists showed more interest than any other group on the issue of seeking information to deal with clinical problems. The score for the respondents from the technologists group is 8(or 50%) as compared with the respondents from veterinary surgeons and non-veterinary surgeon scientists with 7(or 43.75%) and 1(or 6.25%) respectively.

Some 45(or 75%) respondents indicated that they encountered one type of difficulty or the other in locating materials from the shelves. Such difficulties include: misshelving of materials; incomplete information in the catalogue card entries and delaying in re-shelving of retrieved materials.

Most of the respondents, 52(or 86.67%) suggested the establishment of a mechanized information retrieval system.

However, 44(or 73.33%) suggested the retention of the present card catalogue in addition to the establishment of a mechanized one but with necessary improvements to facilitate satisfactory use. Lastly, the respondents suggested the following: all journals relevant to the work of the Institute should be catalogued. This suggestion was made by 40(or 66.67%) of the respondents; also 38(or 63.33%) suggested the provision of abstracts and summaries of topics treated at the back of the catalogue cards; 32(or 53.33%) suggested that assistance to library users should not be left to library assistants only but the professionals should equally assist users because library assistants are in most cases not competent to provide answers to users, queries; 43(or 71.67%) suggested weeding of the catalogue cards whose books are no lohger in the library, and finally 42(or 70%) suggested that there should be constant shelve reading to avoid or minimise misshelvings that is now very rampant.

Conclusion

On the basis of the above findings, it can be concluded that the study of the effectiveness and use of NVRI library card catalogue as an information retrieval device clarifies some important points about users' interaction with the catalogue. These include particularly his search pattern or access points and nature of information and the adequacy with which card catalogue provides the

answers. The insight gained from the study can provide valuable guides for building and improving on it for retrieving information in the form most needed. It is also established that catalogue use is necessary among all information seekers from the library at one time or the other.

At the beginning of the study, the writer drew up eight research questions; answers have been provided for them as stated below:

1. Is the treatment of subject headings in the NVRI library catalogue detail/adequate to permit location of specific information needed by its users?
   The treatment of the subject headings in the NVRI library catalogue is not adequate to permit the location of specific information needed by its users. (Table 6).

2. Can the under-utilization of the library catalogue by the majority be attributed to the insufficient subject headings?
   The library catalogue is not often consulted by the majority of library users because of selective Dissemination of Information services of the library enjoyed and their familiarity with relevant sections of the shelves. (Table 2 a & b).

3. What accesspoints and search patterns are popular among the various groups of users?

The access points preferred by various groups of users are related to the characteristics of the users; subject catalogue is popular among the veterinary surgeons and the non-veterinary surgeons scientists, and they used the subject catalogue to discover what the library has on various subjects; while the technologists preferred Author/Title accesspoint; this group of users took to known-item searches through author's name and title of the material needed.

4. What is the nature of user-queries and how adequately can the card catalogue answer such queries?

The nature of information usually needed by users are specific facts of information; however many preferred detailed information on topics of research. The card catalogue is not optimally responsive to most of the information especially in specific facts. Tables 16(a), 8, 12 and 15(a).

5. Given the limitations of a card catalogue as an information retrieval system, would the users prefer a mechanized retrieval system?

The majority of the users, both through the questionnaire item numbers seven and twenty supported and suggested the creation of a mechanized information retrieval system because of the card catalogue's numerous limitations as an information retrieval device to provide the specific needs of users.

6. Which of the bibliographical information provided in the card catalogue entries are of little or no use to users?

Some types of the bibliographical information provided in the catalogue entries that users found not useful are pagination and illustration. This is clearly indicated in Table 14.

7. What difficulties are encountered by users of the NVRI library catalogue?

Users of NVRI library catalogue encountered some difficulties. Such difficulties include:

1. the problem of locating materials from the shelves due to insufficient information in the catalogue;
2. Misfiling of catalogue cards;
3. Some information in the catalogue are too technical to comprehend.
4. Lack of printed readers guide on the use of various catalogues.
5. The non-inclusion of various subjects or topics relevant to production of vaccines and sera.

8. Why do such difficulties (If any) arise?

Such difficulties arise because of the following:

1. The subject headings in the subject catalogue do not meet the specific information needs of users because of the broad headings used, for example

LCSH is used without making the necessary modifications to suit local needs.

2. lack of sufficient supervision on library assistants who do the filing of the catalogue cards.

3. because there is no adequate training on the use of the library catalogue and omission of some vital bibliographical information in the catalogue entries such as edition, publisher and date of publication.

Finally, it can be concluded that today's information systems commonly provide users access to large amounts of data, only a small amount of which is relevant to a particular problem. If the users are to be able to locate this small amount of information of interest efficiently, a high degree of compatibility must exist between the system and users. Such compatibility can only be achieved if the system designed is based on the human needs, abilities and limitations.

Recommendations

The following recommendations are made on the basis of the findings of the study.

In the area of users' success at catalogue use, one of the major problems is the fact that the narrow concepts are not revealed by the subject catalogue. In using Library of Congress Subject Headings (LCSH) therefore there is the need for the library to introduce

necessary modifications to take care of specific needs of the library.

As a first step towards a lasting solution, the library should establish, post coordinate information retrieval system that is semi-mechanized. Based on the nature of information and terminologies frequently sought and used by those involved in research and production of vaccines and sera and the urgency with which such data are needed, optical coincidence system would be adequate. Towards the realization of this subject profiles of those library users involved in research and production of various vaccines should be compiled and comprehensive thesaurus be constructed from it. Such thesaurus should serve as a basic tool for the system. As a permanent solution the library should computerise most of its services.

Considering the high preference for subject of a material as an access point, the library should seriously review its present trend of non-provision of detailed subject headings in the catalogue card entries. The present card catalogue should be retained but a detailed index to increase its specificity of heading should be pursued vigorously.

Serious considerations should be given to the introduction of PRECIS indexing technique in the preparation of subject index; so that the entries would no longer suffer from limitations imposed by the standard classification scheme. This type of index locates each

of the specific terms and at the same time shows the context in which the terms appear in the subject item in the classified sequence. The index is comparatively simple to use.

There is need to provide access to parts of materials because many of them contain the kinds of concise information users seek in journal indexes. This is very necessary too because an emerging field of research or a new focus on a topic that is coalescing from interdisciplinary work may be discovered only as sections within books.

At present there is no written guide to library use. The library should produce one and paste it close to the catalogue cabinet to direct readers from one type of catalogue to the other, also there should be enough information on how to use it inorder to facilitate quick use.

Catalogue use instruction is conducted on an informal basis; it is necessary to formalize and increase its intensity by entrenching it into the fortnightly scientific seminar programme of the institute; this would afford the librarian or his representative the opportunity to deliver lecture on catalogue use and other activities of the library that could facilitate effective use of library resources and services.

To minimise the difficulties encountered by users in locating materials from the shelves; professionals should render closer supervision to the library assistants. There should be constant weeding of catalogue cards for books that are no longer in the library collection. There should be shelf reading at least twice daily.

The design of the catalogue should make it possible to perform dual functions: as a communication centre and as a finding tool.

The library catalogue entries cover only books and reports. Journal articles are not reflected in the catalogue entries. The library should therefore undertake indexing of journal articles to make up for the catalogue's inability to reflect such articles in its entries.

The need for this exercise is obvious considering the fact that in a research-oriented organization like NVRI, journal articles, apart from being the most current and important source of information, form the bulk of the library's collection. They are heavily used by researchers in the course of their research.

The library should index those articles considered relevant to the specific subject areas or coverage of the organization's research activities. The selection of articles should have the advise or blessing of some specialists in those areas. Though it may not be possible to include every article that might be considered relevant, effort should be made to maintain a reasonable balance in the subject matter. In indexing, the analyst assigns as many subject headings as are necessary to describe adequately the content of each article. The most important tool to use in this exercise is Veterinary Subject Headings. The indexer would have to expand this thesaurus where necessary given the fact that it was published in 1972. Each subject heading is

numbered so that its location in the classified section can be located from the alphabetical list of topics. The choice of Veterinary Subject Headings is evidenced from the fact that it is the most adequate to use as thesaurus considering its detailed treatment of diseases of animals, parasite and parastic diseases, and animal species compared to others. Below is a sample of journal article indexing that the writer is recommending

Subject heading → CATTLE DISEASES

Location number → 1

Author → Lamorde, A.G.

Article Title → "Rinderpest and its control in Nigeria: a discussion."

Journal Title → Nigerian Livestock Farmer, 4 (3) Sept., 1984 pp. 15-16.

Subject index

antibiotics and parasiticodes	1
antidiarrhoeal	1
avanised vaccines	1
carprinised vaccines	1
coccidiosis	1
herd immunity	1
immunization methods	1
panzootic	1
pleuropheumonia	1
reticuloendothelial	1
symptomatic treatment	1
tissue culture rinderpest vaccine	1
Virucide effect	1

Reference

Roy Marck (1972) Veterinary Subject Headings. Farnham Royal, Slough SL 2 3 BN, England, Commonwealth Agricultural Bureaux. 44p.

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APPENDIX I

QUESTIONNAIRE

Department of Library Science
Faculty of Education
Ahmadu Bello University
Zaria.

25th March, 1986.

Dear Respondents,

Very little use is made of the present information retrieval system represented by the Card Catalogue in the National Veterinary Research Institute Library by Veterinary Surgeons, Non-Veterinary surgeon scientists and technologists. This has often resulted in not having sufficient and relevant information on previous research findings to serve as reference and guard against duplication of such works. Without the knowledge of the nature and form of information you need for your work, it will be very difficult to design and appropriate and effective retrieval system; lack of which has hitherto resulted in designing retrieval systems in an empirical vacuum. Hence, this has prevented fullest and satisfactory use of the available resources.

It is however, the belief of this writer that an intended investigation in this regard will be best handled by looking into the situation as seen by the users themselves. The writer will therefore be most grateful if you could find time to complete this questionnaire. The results will form the bulk of empirical data for a thesis in partial fulfilment of the degree of Master in Library Science. The writer would like to assure you that any information you give will only be used, in aggregate terms, for the purpose of this study. And with the possibility of improving information retrieval systems for research scientists.

Thanks for your cooperation.

Sikiku Momoh.

QUESTIONNAIRE FOR LIBRARY USERS

1. Kindly indicate (by tick) which of the following groups you belong.

   a. Veterinary Surgeons ☐

   b. Non-Veterinary Scientists ☐

   c. Technologists ☐

In questions 2-19, tick as appropriate.

2. How often do you use the library catalogue ?

   a. Monthly ☐

   b. Weekly ☐

   c. Daily ☐

   d. Twice a week ☐

   e. Can't say ☐

   f. Never ☐

3. Which of the following access points do you frequently make use of?

   a. Approach the catalogue through Author's name ☐

   b. Through the subject ☐

   c. Through the title of the work ☐

   d. None ☐

4. How helpful is the access point you have ticked in Question 3 above?

   a. Very helpful ☐

   b. Helpful ☐

   c. Not helpful ☐

   d. Others (Please specify) _____

5. What kind of information or data do you often need to do you work?

   a. Clinical information ▱

   b. Drug usage ▱

   c. Disease reports ▱

   d. Others (pleaee specify)

6. Is the treatment of the subject headings in card catalogue detailed enough to permit you locate specific topics that you need?

   a. Yes ▱

   b. No ▱

7. If No to Question 6, above would you like another retrieval device that will enable you to locate specific relevant information to be established.

   a. Yes ▱

   b. No ▱

8. Are you usually successful in using catalogue to locate information?

   Yes ▱ No ▱

9. Did you receive instruction on how to use the library catalogue?

   Yes ▱ No ▱

10a If Yes to Question 9 above, does it improve your capability in using the catalogue to locate information?

   Yes ▱ No ▱

   b. If No to question 9 above, is it because you can do without it?

   Yes ▱ No ▱

11. If No to Question 10(a), would you say that the catalogue has short comings?

   Yes ▱ No ▱

12. If Yes to question 11 above, state briefly such short comings:

13. Do you find the classification number easy to understand and use?

Yes ☐ No ☐

14. Which of the following additional information found in the Catalogue entries are useful to you? (Tick as many as may be applicable).

a. Publisher ☐

b. Date of publication ☐

c. Edition ☐

d. Number of pages ☐

e. Illustration ☐

15.a Which is always your first source of approach whenever you need a job-related information?

i. Searching the shelves ☐

ii. Asking a colleages ☐

iii. Using the library card catalogue ☐

iv. Asking the library staff ☐

b. How long did it take you?

i. Few minutes ☐

ii. Few hours ☐

iii. Few days ☐

iv. Few weeks ☐

v. Few months ☐

16. a. What depth of information do you usually need?

i. Specific fact ☐

ii. Detailed analysis ☐

ɐs the catalogue always useful in locating uch information?

Yes ☐ No ☐

17. What are your purposes for seeking information (tick as many as are relevant to you).

a. General keeping up to date ☐

b. Research purpose ☐

c. Preparation of papers for publication ☐

d. Dealing with clinical problem ☐

e. Others (please specify)

18. Do you encounter any difficulty in locating materials from the shelves on any of the Question 17 above?

Yes ☐ No ☐

19. If Yes to question 18 above, is it because of any of the followings: (tick as many as applicable)

a. The information in the catalogue could not lead to its retrieval ☐

b. Due to misshelving ☐

c. The item was on loan ☐

d. Due to delay in shelving ☐

20. What suggestion(s) have you that could bring about improvements in your search success in catalogues use and entire library services.