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Evaluation of References in Dissertations and Theses against the Holdings in a University Library

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Introduction

Library collections are accumulations of published and unpublished materials. A "good" collection for students working on the undergraduate or master's level may be a "bad" collection for students or faculty working at advanced research levels. In all cases the collection has to be judged relative to the academic program. A "good" library collection means that a student or faculty member can locate and gain access to needed resources in a reasonable period of time (George Smathers Library, 2004). Collection evaluation is a lengthy and labor intensive activity. Consequently, the collection manager generally begins a collection review prior to the faculty academic program review initiative.

When the University of Ibadan (then the University College Ibadan) was founded in 1948, the Faculty of Science was one of the three foundation faculties (along with arts and medicine). The faculty was then housed in the laboratory which was converted from the wards of the 56 army general hospital, Eleyele Ibadan. The faculty has been in this present site since 1953. From the start, the faculty watch word has been the attainment and maintenance of a high academic standard. By the 1960s the faculty was already recognised as a centre of excellence for scientific teaching and research. This is the consequence of the deliberate policy of the faculty's founders.

At the beginning, the faculty had six departments, namely, Botany, Chemistry, Mathematics, Physics and Zoology. Through a process of expansion of old departments and creation of new ones, the faculty currently has ten departments, viz; Archaeology and Anthropology, Botany and Microbiology, Chemistry, Computer Science, Geography, Geology, Mathematics, Physics, Statistics, and Zoology.

The Faculty of Science offers courses to students for all the science-based disciplines or faculties such as ggriculture and forestry, education, technology, as well as the College of Medicine. The faculty plays an important supervisory role in the management of four service units of the university. These are the Botanical Garden, the University Computing Centre, the Zoological Garden, and the Laboratory Technology Training Scheme (LTTS). The faculty is home to a number of other units, including the federal radiation protection service (FRPS), which is owned by the federal government and the equipment maintenance centre EMC, managed by the university. The purpose of evaluation of library collection research, according to the George Smathers Library (2004), is to determine the qualitative level

of collection support for a specific academic program, to identify the collection's maintenance and development needs

Scope

To determine the adequacy of the entire collection of Kenneth Dike Library on the Faculty of Science courses in relation to PhD thesis produced between 2000/2001 and 2002/2003 sessions. This means that some limitations of scope are necessary and that criteria of selection have to be imposed on the data. The evaluation of the collection is restricted to a narrow field. Hence the study is limited to the Faculty of Science between 2000/2001 and 2003 sessions. The judgement to be passed on the adequacy or inadequacy of the library collection will be based on the references on the sampled PhD thesis produced in the Faculty of Science 2001/2002 and 2002/2003 sessions found in the Kenneth Dike Library.

To provide the data, Faculty of Science PhD theses produced between 2000/2001 and 2002/2003 sessions were given in the library. The criteria for selection were the availability of the required data and the ready supply of the data, which were met after much stress from the library staff members concerned.

Several authors have contended that mere citing of an item is not enough indication that the item has been used. Brown (1956), for instance holds the views that citation may only reflect scholarly affectation or compliance with tradition. Also, many articles borrowed may not be cited. Another problem is the inordinate use by scientists of initials and their non-adherence to standard rules for punctuation, transliteration, spelling and capitalisation, all of which makes the entries so disguised that they cannot be recognised in the usual source.

Two studies (Beile, Boote, & Killingsworth, 2003, Haycock, 2004) used citation analysis to examine the scholarly nature of education dissertations, while another study (Green & Bowser, 2003) developed a rubric to examine the effect of faculty/librarian collaboration on the quality of literature reviews in education dissertations. Haycock (2004) used citation analysis to examine the scholarly nature of education dissertations, while Hovde (2000) used citation analysis to do quantitative analyses of works cited. Since the citations had been digitized and sorted already, the bibliometric data from journal citations was "mined" for information. Like a number of previous studies using citation analysis (Haycock, 2004).

The issue of the quality of Doctorate of Education (EdD) dissertations became an important topic in the United States in 2005 with the release of a report questioning the quality of EdD Programs (Jacobson, 2005; Levine, 2005). At Nova Southeastern University in Fort Lauderdale, Florida, a faculty member in the Fischler School of Education and Human Services and a librarian in the Alvin Sherman Library, Research, and Information Technology Center decided to collaborate to look at the quality of dissertation reference lists. The Sherman Library was preparing for reaffirmation of accreditation in 2007 and was interested in looking at dissertation reference lists for evidence of library research skills. The Fischler School of Education and Human Services were interested in assessing the quality of their dissertations. This effort came at an opportune time.

The true purpose of citation is not to show how learned an author is, nor to look impressive, nor to lend weight to a research work. It is to identify the source of a cited item so that a critical reader can not only easily retrieve the item but also see if he agrees with the interpretation of the citing author. It also has the merit of scientific objectivity. For the element of bias has no place in the checking of citation against public card catalogues and other finding tools. This evaluation procedure can produce quantifiable results that lend themselves to the making of judgements. It is a procedure that can be carried out at low cost.

On the whole, the checking of citations eliminates most of the limitations inherent in other methods of collection evaluation and it would seem to be the most objective procedure.

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The major facets of this work that need to be identified are;

- o the stated objectives of the University libraries;
- o selection method and collection assessment;
- o method of collection assessment; and
- o Significant of citation analysis.

The functions of Nigeria Universities and the objectives of Universities Libraries are spelt out as follow

Functions of Universities in Nigeria

- To support the mass literacy programmes of government at various levels
- To develop manpower in various fields and professions needed for economic development
- For teaching and research into the various problems confronting Africa, especially the host communities of the university; and
- To provide community service necessary for rapid socio-political and economic development

Objectives of the University Libraries

The following are the objectives of the university libraries:

- Provision of materials in support of learning process i.e. materials for students course work, assigned reading as well as background reading for essays, term paper and project
- Provision of materials to meet the requirements of faculty specialists and postgraduate students who are doing research.
- provision of materials for users to assist in personal self development
- Co-operation with other university libraries with a view to developing a network of academic library resources which are at the disposal, of all students and teaching faculties.
- Meeting the specialized information needs of the regions within which the universities are situated (this takes care of the services to external users)

Theoretical Framework

According to Smarther (2004), an effective collection evaluation statement will contain the following parts: 1) a clear description of the current and anticipated directions in the academic program, both at the instructional and research level; 2) a description of the current collection resources, both in terms of ownership and access; 3) an evaluation of the collection, in terms of ownership, access, and condition relative to the current academic program; 4) recommendations to improve access to needed resources; and 5) a proposed estimate of the budget required to maintain the collection and implement recommended improvements.

The fulfilment of university library objectives does not end with just the acquisition, preservation and the use of library materials. These resources have to be continually evaluated to determine how adequately they meet the needs of the users. To do this, the librarian needs to have comprehensive data on the materials researchers and use. Unfortunately, information on both points is scanty.

It is discovered that a research library satisfies more of the literature needs of the researchers in Science and Technology. Also, researchers require works that are peculiar to their research interests, especially in the non –scientific fields and thirdly, in the non scientific fields the large majority of titles referred to are cited very frequently. This finding strongly suggests that the research library which

adequately supports its scholar cannot limit itself to the obvious, the standard, the basic and the very important materials.

The studies by Fussler (1949) and Waples (1940) showing respectively by non-chemistry and non-physics titles used by chemists and physists and the wide-ranging needs of Belgian scholars point to the same conclusion. The evidence of the scholars themselves in this regard is most illuminating. The commonest measure of a University Library collection is;

- Size of the collection in quantitative terms in relation to the number and type of academic programmes offered in the parent's institution;
- the extent of use of collection;
- the variety and quality of services;
- current acquisition and withdrawal policies;
- financial support including overall expenditure for library material or percentage of total expenditure of the parent institution allocated to libraries and expenditure per student;
- staffing not only the number or cost of staff but also the types of professionals available and their special qualifications for new method of service; and
- comparison of standard subject bibliography and check lists with library public catalogues to determine how many titles are present in or absent from the library's holdings.

Of these measures, the size of the collection has not only been inadequately covered in library literature but has also generated a good deal of controversy amongst Librarians.

In general, librarians are expected to adopt some of theoretical guidelines if they are to build up a live collection. These guidelines include:

- the educational aims of the institution of which the library forms a part;
- the specific trends in research and teaching interest within each department;
- the general trend in departmental and total enrolment;
- the pattern of curriculum development ;
- the proximity of the institution to other book collection;
- the performance of the actual selection by both the faculty member and the library staff;
- the means by which the selection is carried on;
- the strength and weakness of the collection; and
- The nature of the materials to be collected and the levels of collecting.

The librarian consults faculty members and checks standard bibliographies lists and reviews. In addition to the examination of the merits of individual books, the Librarian also considers the relevance of the books, in terms of the educational aims of the institution, the student and faculty interests, the level of demand and enrolment in the various courses, degree of specialisation and type of treatment in relation to the clientele served. Finally, the Librarians adopt the bibliographic practice of annotation which is a characterisation of the books in a descriptive or critical note. This note has for its specific purpose the aiding of the Librarians in the choice of books. This entire means that the competent selection of new book titles frequently involves the consideration of multiple determining criteria.

Book selection is the joint responsibility of both libraries and the teaching staff. The responsibility of the teaching staff is in two folds namely; to keep the collection in the subject fields' up to date by a careful selection of the new publications and a weeding of the old and to fill the gaps in the collection.

An attempt will be made in this research to show that the size of the collection is a valid yard stick for measuring the adequacy of a library collection. PhD theses of the Faculty of Science between 2000/2001 and 2002/2003 sessions are the focus of the study. The thesis of the PhD graduate will be

checked if the references recorded are found in the library. Other things like the type of materials used, how recent, and the total number of theses produced will be checked.

Neither the quality nor quantity of the collection can be considered in isolation. The central hypothesis states: "there is a positive relationship between qualitative and quantitative assessments of Nigerian university library collections. As a result of this relationship, the larger the size of the collection, the more likely its support for post graduate research programmes in the Faculty of Science."

The study is broken down into specific sub hypothesis as follows: a large university library collection like Kenneth Dike Library is likely to be able to support post graduate research programmes in the Faculty of Science better than a small library in some universities offering similar academic programmes at the same levels.

In statistical terms, the number of research degrees which a university produces is a function of library holdings in books, periodicals, and the number of quality teaching staff who participate in the collection building exercise.

Methods of Collection Assessment

There are many techniques used in assessing the adequacy of library collections. These techniques may be used independently or at times combined with other techniques. Such assessments have varying degrees of success depending on how well the chosen method suits the purpose for which the assessment is intended.

There are six distinct techniques/methods of collection assessment but the two used for this work will be fully discussed. The six methods are:

- compiling statistics on holdings use and expenditure;
- checking lists, catalogues and bibliographies;
- obtaining opinions from regular users;
- applying library standards (using any of the foregoing methods);
- examining the collection directly i.e. direct observation; and
- Rating total (internal and external) source adequacy.

Direct Observation

This method involves going to the stacks and examining the shelves. While there, the surveyor may judge the physical condition of the collection, estimate roughly the size of its various parts, and form an opinion of how well recent publications are represented in it. Although the result of a collection assessment based on this technique may be immediate, it is obviously unscientific and very little has been written on it.

List Checking: Catalogues and Bibliographies

This method checks library holdings against catalogues and bibliographies. The advantage is that it is reliable and an evaluator of quality. Many comprehensive and specialised lists are available in published form, they are compiled by competent professionals, librarians or subject specialists; they can be geared to individual library and to particular interests or needs of libraries; and they are relatively easy to use.

There is a relationship between the size of a library collection and the quality of those graduate researchers; there is a minimum level of adequacy, if a university library collection is to support its

university research programmes; post-graduate students especially those in Science oriented courses rely more on journals than books and the quality of the teaching staff is the most important factor in the production of PhD.

Significance of Citation

The checking of footnotes, references, and bibliographies is generally regarded as part of the checking of lists, catalogues and bibliographies against a library's holding. But, because of the importance attached to it (checking citation against the library holdings) as a method of collection evaluation, it has been treated under a separate sub-heading.

The publication that has been used as citation sources is the PhD theses in the Faculty of Science between 2000/2001 and 2002/2003 sessions. In an attempt to determine some of the characteristics of the literature used by the PhD candidates for their theses and to show the degree to which the resources of the Kenneth Dike Library were able to support these theses. The citations in 34 theses were checked. The citations were made up of textbooks, reports, reference materials and largely journals.

Nature of Study and Sources of Data

This work seeks to demonstrate that the size of a library collection is not a function of users' satisfaction. To test the hypothesis, seven basic types of numerical facts are necessary; the number of PhD graduates/theses produced within 2000/2001 and 2002/2003 sessions in the Faculty of Science;

- the list of citation in each of the theses sampled;
- the number of the citation found in Kenneth Dike library's holding;
- the type of materials cited;
- the number of each of the materials cited found in the holdings of the Kenneth Dike Library;
- the years of publication of each of the citations found; and
- The publisher/author of the citations found in the library.

Since the adequacy of a method for collecting data is ordinarily judged both by the nature of the research topic and in terms of the criteria of reliability and validity, the methods chosen in gathering the data for this work fall into three categories: qualitative, quantitative, and documentary.

The data were collected from thesis room in the reference section of the library, which were found to be reliable when compared with the proceeding of the sessions. The documents used are the bibliographies of theses and dissertations and the public card catalogues.

The bibliographies of theses and dissertations were checked and theses that fell within the sessions were written out, sampling was carried out which was 60 percent of the total theses found and taken to reference section's circulation desk. The theses were brought out and the photocopies of the citations were made. The names on the theses were cross checked with the proceedings of the sessions.

The citations were taken to the catalogue card boxes where they were checked, if they are in the library. Those found were marked and clearly written out with necessary corrections made. Necessary conclusions were later drawn based on the outcome.

Methodology

This section presents a description and discussion of the methods used in this study to test the validity of the investigation. The classification of materials on librarianship and the classification of the

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data for the present purpose are discussed. The evaluation and statistical method used are also explained and justified.

Classification of data

For the classification of data, the same criteria used for the organisation of the literature can be used which are:

- Subject; involves the departments that made up the Faculty of Science in the University of Ibadan which are a. Archaeology and Anthropology b. Botany and Microbiology c. Chemistry d. Geography (Science) e. Geology f. Mathematics g. Physics h. Statistics and i. Zoology.
- Geography; Geography classification refers to different sections of the library used which are Reference section, Serial section, Circulation section and Monographic section.
- Form; it refers to the bibliographical arrangement of materials in books, journals etc.
- Level of clientele; the academic qualification and in this case it is PhD graduates.
- Language; the language of the publication
- Chronology or unit of time; this is the sessions covered.

Evaluation Technique

The first technique chosen is that of checking the citations collected from Kenneth Dike Library against all the public card catalogues and other finding lists. The aims of the exercise are to establish that more of these citations will be available in the library because it is a big library; that the difference between the available and unavailable citations will not be statistically significance; the recent of the materials cited; the relative number of the locally produced materials compared with foreign materials.

This method of evaluation has a number of desirable features; it has the merit of scientific objectivity. The theses with the citations in them and the public card catalogues and other findings which will be fully utilised are tools into which the element of bias has not come. It is a procedure that can be carried out at low cost. The method can be applied to other disciplines such as natural and applied Sciences as well as other types of libraries. The method can produce quantifiable results that lend themselves to the making of judgement.

Sampling Technique

Between 2000/2001 and 2002/2003 sessions, a total of 62 PhD theses are on record. From these theses 34 of them were sampled which is 60 percent of the total PhD these. 50 percent were chosen in some departments and 60 percent in some depending on the comparism of number of theses produced in each session. This is so because larger sample gives rise to more accurate outcome.

The references of the sampled PhD theses were photocopied and checked on the card catalogues where certain numbers were found to be books, journals, reference materials etc.

Simple random sampling technique was used. The items were numbered and listed on a piece of paper. The listed items were then placed in a container, after been squeezed and thoroughly shuffled. The individual items to be included in the sample are drawn from the container. Each time, before a case is drawn; the slips are thoroughly randomized and were picked without replacement. This was done for the entire department one after the other.

Simple Numerical Calculations and Inferences

In 2000/2001 session a total of 24 PhD theses are on record for the Faculty of Science in the University of Ibadan, 14 and 24 for the 2001/2002 and 2002/2003 sessions respectively. Out of which 14, 7 and 13 were randomly picked as samples respectively.

Table 1: Sampled Theses

DEPARTMENT	SESSIONS					
	2000/2001		2001/2002		2002/2003	
	no of theses	Sampled theses	No of theses	sampled theses	no of theses	sampled theses
Archaeology and anthropology	---	---	---	---	---	---
Botany and microbiology	3	2	6	3	6	3
Chemistry	3	2	5	2	6	3
Geography (Science)	2	2				
Geology	3	2			2	1
Mathematics					2	1
Physics	7	3	2	1	3	2
Statistics	4	2				
Zoology	2	1	1	1	5	3
Total	24	14	14	7	24	13

From the PhD theses, a number of citations were collected comprising of journals and books using a simple random sampling from the calculator, 60 percent of the citations were picked and checked against the public card catalogues of Kenneth Dike Library to determine how many of the titles were present or absent from the library collections.

The basic assumptions of this work are:

- each of the disciplines in the Faculty of Science at PhD level has a core literature which Kenneth Dike Library should hold;
- the citations on these theses examined not only reveal materials used by the researchers who successfully completed his PhD programme in the Faculty of Science between 2000/2001 and 2002/2003 sessions, but also reflects the demand made on the library in preparation of each thesis; and
- The quality of Kenneth Dike Library collection and the degree to which it can support the PhD programme are judged by the number of citations available in Kenneth Dike Library.
- The total not found in all the sessions is 750 ˜ 42 percent. Total number of citations found in all the sessions is 1048˜ 58 percent. In each session the following are the citations found and their percentages; 2000/2001 - 380 (56 percent), 2001/2002 - 256 (62 percent), and 2002/2003 412, (59 percent)
- Citations not found in the library are the following with their percentages; 2000/2001---305, 44 percent; 2001/2002 ---156, 38 percent and 2002/2003---289, 41 percent
- TC total number of citation, S sample (which is 60 percent of TC)
- BC number of books cited, BF number of books found
- JC numbers of journals cited, JF numbers of journals found
- TF total number of citations found

Table 2: Number of Materials Cited and Found in the Library

TABLE 2; NUMBER OF MATERIALS CITED AND FOUND IN THE LIBRARY

Departments	2000/2001							2001/2002							2002/2003						
	TC	S	BC	BF	JC	JF	TF	TC	S	BC	BF	JC	JF	TF	TC	S	BC	BF	JC	JF	TF
Archaeology and anthropology																					
Botany and microbiology	122	67	24	2	43	27	29	1107	64	8	1	56	34	35	1112	67	4	1	63	37	38
								276	45	7	1	38	23	24	295	57	2		55	33	35
	115	69	26	4	43	36	40	3108	65	5	1	60	36	37	3110	66	6	1	60	36	42
Chemistry	100	60	20	5	40	21	26	179	48	7	2	41	25	27	187	52	6	2	46	28	30
															295	57	4		53	32	32
	118	71	22	2	49	24	26	291	54	5	1	49	49	30	3123	74	4		70	42	42
Geography (science)	141																				
															74	45	10	5	35	25	30
	155	93	14	6	49	34	40														
Geology																					
Mathematics															78	47	12	6	35	30	36
Physics	56	34	9	2	24	18	20	160	36	9	1	30	26	27	144	27	8	2	19	22	24
	44	27	6	2	21	13	15	255	33	10	1	28	24	25							
	67	40	12	2	28	27	29								250	30	9	1	32	28	29
Statistics	46	28	2	2	27	27	29														
	59	51	18	3	33	23	26														
Zoology															199	59	4		55	28	28
								111	67	6	3	61	48	51							
	117	70	17	2	53	12	14								1121	72	6	4	66	30	34
Total	1281	685	189	44	459	336	380	689	412	57	11	263	245	256	1168	701	80	23	621	389	412

Table 2 shows that more journals are cited than books. Out of 685 citations, 189, or 24 percent, are books, while 459, or 70 percent, are journals.

Table 3: Volumes of Material CIted and Found

	2000/2001	2001/2002	2002/2003
Number of books cited	189, 24 percent	57, 14 percent	80, 11 percent
Number of books found	44, 12 percent	11, 4 percent	23, 28.75 percent
Numbers of journals cited	519, 70 percent	263, 64 percent	621, 89 percent
Numbers of journals found	336, 45 percent	245, 96 percent	389, 94 percent
total number of citations found	380, 57 percent	256, 62 percent	412, 59 percent

It can also be seen that the overall percentage of book citation is 20 percent, i.e., 372 out of 1798, and of journals is 78 percent , i.e., 1403. The table below shows that more foreign books and journals are cited than local books and journals. More foreign journals are cited more than foreign books. This may be due to the low numbers of citations to books in the references.

Table 4: Foreign and Local Journal Citation Table

	2000/2001	2001/2002	2002/2003	Total	Total percent
Fj	320	239	381	940	97
Lj	16	6	8	30	3
Fb	25	9	19	53	68
Lb	19	2	4	25	32
Total	380	256	412	1048	100

Fj foreign journals, Lj local journals, Fb foreign books, Lb local books

Table 5: Recent and Older Materials Citation Table

	2000/2001	2001/2002	2002/2003
VRj	6 percent 21	11 percent 28	4 percent 16
Rj	10 percent 35	18 percent 43	20 percent 77
Oj	31 percent 103	29 percent 65	16 percent 63
VOj	52 percent 177	44 percent 109	60 percent 233
VRb	5 percent 2	-	-
Rb	20 percent 9	18 percent 2	-
Ob	31 percent 14	54 percent 6	33 percent 8
VOb	43 percent 19	27 percent 3	67 percent 16

VRj = very recent journals - 1995-2000, Rj = recent journals 1990-1994

Oj = old journals - 1980-1989 VOj = very old journals 1979-

VRb = very recent books - 1995-2000 Rb = recent books 1990-1994

Ob = old books - 1980-1989 VOb = very old books 1979-

Very old journals have the highest number and percentage in all the sessions, while old books have higher percentage in 2001/2002, and very old books are higher in 2000/2001 and 2002 sessions.

There are more recent journals than recent books. There are some sessions without recent books.

It is a safe assumption to make that no library can supply 100 percent of the materials used for PhD work. The following were found to account for the unavailable citations: the characteristics of form, language, and imprint date were analysed in respect of books, while the unavailable journal citations were analysed by interview or source of publication. Some of the 2088 citations not available in the library are archival materials, government publications, pamphlets, reports, etc.

Using the procedure of simple numerical calculations and inferences, the results of the exercise show that there is a positive relationship between the size of the collection of the library and the ability to support postgraduate research programmes.

Findings

Beile, Penny, et al. (2004) analyzed thirty dissertations in education from three similar institutions. They conclude that the assumption that doctoral students have particular expertise in the use of the scholarly literature of their field may be overstated. They suggest that use of dissertations in evaluation and development of research collections be done cautiously. Five measures of data that have implications for collection development were looked into, which are: variability of data over time, ratio of queries per session, use by hour, use of e-journal collections, and use of Web-based resources in relation to particular subject populations (Blecic, Deborah C., Joan B. Fiscella, and Stephen E. Wilberley, Jr. 2001). The authors attempted to identify the materials used in an interdisciplinary field by analyzing citations according to LC classification categories. The study found that tourism scholars make significant use of disciplines outside their field Scholars that employ qualitative methodology are more likely to make use of disciplines outside their field than scholars who use quantitative methods.

The main concern of this exercise has been to establish the relationship between the collection of Kenneth Dike Library and their ability to support PhD research programmes in the Faculty of Science between 2000/2001 and 2002/2003 sessions. In statistical terms, the number of research degrees produced in the University of Ibadan, Faculty of Science is a function of library collection and the type of collection. For example, the study shows that more journals are used in the sciences, and therefore the library should subscribe to more titles for science researchers. It also shows that the quality and the quantity of a library collection are interrelated.

A major breakdown of the available citations revealed that in general PhD researchers in Science cite more references from journals than books and majority are from foreign authors and foreign journals. The percentage of citations per session was found to be 40 percent books and 60 percent journals, available in Kenneth Dike Library.

The unavailable citations are fringe titles. The overall evidence shows that the unavailable citations are mostly items that are difficult to acquire such as archival materials, government publications, interviews, etc.

Limitations of the Study

Some of the materials not available had been weeded by the library staff. This made it difficult to verify the citations, although the library staff confirmed that they had owned particular journal volumes. The date of many citations was absent, which made it hard to decide how recent the materials were.

The citations in some of the theses were poor. Some had no author's name, place of publication, and publisher. All these affected the decisions on which were local or foreign materials, recent or old, and whether a book or journal.

Conclusion

The exercise has considered the adequacy of the collections to support post-graduate research and other characteristics of the literature used by PhD graduates. The assessment of these collections was based on the postulate that all the departments in the Faculty of Science have a common set of characteristics which give them a degree of similarity.

When the objectives of Nigerian universities were closely examined, it was discovered that the ability of a library to support PhD research depends to a large extent on relative size of the collection in the library, especially the collection of the journals. The use of references in dissertation/theses exposes the ills in the library collections and the poor use of library collections by PhD students. The study results imply that the library should subscribe to more journals in the sciences.

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