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**ANALYSES AND PATTERNS OF CD-ROM  
DATABASE USE IN KENNETH DIKE  
LIBRARY, UNIVERSITY OF IBADAN,  
NIGERIA**

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**Abstract**

*This study investigated the usage pattern of CD-ROM databases in Kenneth Dike Library, University of Ibadan and how this facility meets the information needs of users.*

*Data was collected using: records of users between 1995-2001; 2 sets of questionnaire which sought to determine the number of satisfied and unsatisfied users and library staff, on how to improve services were entertained.*

*Results showed that users were not very knowledgeable on how to conduct a good/successful CD-ROM literature search; some CD-ROM databases are usually not very current, journal articles whose*

*abstracts were cited are not often available in the library.*

*Recommendations and suggestions which included training of users and library personnel on how to conduct the CD-ROM literature searching, updating of CD-ROM databases, making available current journals in the library and effective library document delivery after a search were made.*

**Introduction**

Computers and other information technologies play important role in communications between information users and library operations. A very important issue that is often considered is how best these information technologies serve end-users and information specialists in accessing information. Electronic media used for communication and information retrieval include Online networks, localized in-house systems, CD-ROM products and public domain networks.

Each of these medium has its own advantages and disadvantages. CD-ROM which is an acronym for Compact Disk Read Only Memory, is primarily a publishing medium and possibly one of the greatest advancement in publishing since Gutenberg's Press. One of its advantages which is of utmost importance to users is its ease of access and the fact that they do not incur telecommunication expenses.

Many large public and university libraries are currently using CD-ROM databases to search for information especially in the update of literature. The University of Ibadan Nigeria, is the oldest university in the country. It was established in 1948 and also has one of the biggest and oldest university libraries in the country. The library has a total of about 13,855 registered users (thirteen thousand eight

hundred and fifty five) by the year 2003 – a breakdown of which is 502 Senior Staff and non teaching staff, 3,923 Post graduate students, 9,021 undergraduates and 409 outside users (See Table 1).

**Table One: Registration of Readers in KDL 2000/2001 – 20002/2003**

Readers Registration Statistics	2000/2001	2001/2002	2002/2003	Total
Senior Staff & Non Teaching Staff	125	309	65	502
Post Graduate	1,117	2,395	411	3,923
Under Graduate	6,259	2,507	255	9,021
Others	126	196	87	409
Total	7,627	5,407	821	13,855

The CD-ROM literature search facility was introduced into the University of Ibadan library system in 1995 and from available data, since the time of inception, the number of users who make use of CD-ROM facility is very small compared to the number of registered Library users (see table 2). The reason for this might be due to lack of current awareness, or due to the dissatisfaction of many of the users. (See Table 3).

**Table 2: Number of CD-ROM Literature Search Users 1995-2001**

1995	1996	1997	1998	1999	2000	2001	Faculties
09	24	12	22	16	53	33	Arts
129	99	133	173	83	223	97	Agric/Forestry
128	313	264	234	117	233	399	Education
01	6	05	-	1	05	2	Law
41	26	13	49	39	37	17	Medicine
32	65	61	16	19	17	14	Pharmacy
199	54	123	270	166	255	174	Sciences
70	-	-	183	239	226	228	Social Sciences
32	47	47	31	38	101	66	Technology
53	18	11	50	11	30	30	Ver. Medicine
-	04	04	-	-	-	-	Arabic M.S.S.

**Table 3: CD-ROM Literary Search- Statistics of Use Satisfied and Dissatisfied Users 1997**

Months	Satisfied Request	Unsatisfied Request	Total
March	43	44	87
April	38	47	85
May	11	19	30
June	-	-	-
July	60	59	119
August	39	58	97
September	93	70	163
October	77	61	138
November	32	64	96
December	59	50	109
Total	392	482	874

### Statistics 1998

Months	Satisfied Request	Unsatisfied Request	Total
January	No Light		
February	52	60	112
March	25	15	40
April	Faulty System		
May	Installation of new system		
June	Installation of new system		
July	Installation of new system		
August	25	31	56
September	69	42	111
October	22	14	36
November	65	31	96
December	33	28	61
Total	191	221	412

### Statistics 1999

Months	Satisfied Request	Unsatisfied Request	Total
January	55	32	87
February	23	18	41
March	65	50	115
April	62	33	95
May	-	-	-
June	-	-	-
July	13	7	20
August	25	16	41
September	134	124	258
October	Technical Problems		
November	48	39	87
December	17	10	27
Total	432	319	751

From the table above, the number of unsatisfied users is significantly higher than

the satisfied user except for 1999 statistics. This can explain why not many people use CD-ROM facility in the library.

One of the important factors to consider when purchasing electronic databases in libraries is how often they are used. Lack of usage or inadequate usage affect the prices or purchase value of these databases.

Predicting usage patterns and levels of use is difficult, but important, because prices or licensing restrictions are often based on amount of use, total number of potential users, or numbers of simultaneous searchers allowed (Tenopir and Read, 2000).

It is important that Libraries keep a record of this and be able to predict/know the most popularly used databases and thus select and order them. The databases that are not often used, should be discontinued or reasons why they are not used discovered or investigated.

More current awareness services on the unpopular databases should be carried out, and if the lack of usage continues, the purchase of the database should be discontinued. This is important considering the economic situation of most academic libraries in Nigeria.

Sometimes it could help both the library (provider of information) and the Users of the CD-ROM Database, if suggestions on how to maximize its use, are made by the users themselves.

In this light research into ways of improving CD-ROM usage especially in Kenneth Dike Library is worth undertaking.

This study therefore seeks to study and analyse the usage pattern of CD-ROM databases in Kenneth Dike library, University of Ibadan and also find out how this facility meet the information needs of its users. In other words, are the users satisfied with the provision and utilization of CD-ROM services in the library? Are they

really making use of this facility, what are the reasons behind it? Could it be due to the fact that they do not know how to make use of the CD-ROM Literature search facility or that the service is not helping them in the first place? Is there anything that can be done to improve this service?

The study will also enable librarians know whether the needs of their users who conduct CD-ROM searches in the library are met, and suggestions and answers metted by the users in response to the instrument/questionnaire they are given, will help the library improve on its Online services.

Data on the usage of CD-ROM databases in KDL was collected for a period of 8 years (1995-2002). This data was analysed according to faculty and then the type of users namely staff, undergraduate and postgraduate students, and even outside users.

A total of about 50 questionnaires were also given out randomly to users who came to carry out CD-ROM literature searches. They were also to respond to the various questions and make them suggestions if any on how to improve this facility. This is to obtain first hand information from the users about the CD-ROM service and their need satisfaction.

## Literature Review

An article published by Nicholas and Frossling (1996) examined these waves of end-users that emerged with new search technologies, namely (1) full text natural online system; (2) CD-ROMS; and (3) the internet. The CD-ROM was thought to be a much more appropriate end-users tool because of its user-friendliness. Leach (1994) reports on a four-year study of usage patterns of CD-ROM databases in a biological sciences library at the Ohio State

University. More than half the individuals recorded all use within one month. Over a third recorded use on only one day. Results suggest that the library should emphasize point-of-use instruction for first-time searchers and deemphasize workshops.

Another study carried out by Stewart and Oken (1991) compared the performance of students using the printed and CD-ROM versions of ERIC. The students were assigned topics using either CD-ROM with formal instruction, CD-ROM without instruction, the printed version with instruction, or the printed version without instruction. The result showed that the students can use CD-ROM to their advantage and are helped by instruction.

In August 1989, the Committee on Automated Reference Services of the New York State Library conducted a use study of their CD-ROM work stations to determine the extent of user satisfaction resulting from CD-ROM searches at the New York State Library, the ease of using CD-ROM as an information retrieval source; whether training was adequate at CD-ROM stations; and whether CD-ROM products meet user needs. Data were gathered from 77 respondents.

It was found that 41% of the respondents were greatly satisfied with their CD-ROM search, 56% found the instructional materials adequate, 63% received adequate training and 91% will use CD-ROMs in the future. The Committee thus recommended establishing a CD-ROM help desk; making available command cards to supplement the instructional materials; distributing promotional materials to encourage CD-ROM use; and having more staff on hand to assist users.

Ensor and Steve (1991) in their study on the use of CD-ROM to provide Enhanced Information Services for University Administrators and Committees noted that

ERIC was the most heavily used database by this group of users.

Foote (1997) reviewed the statistics on CD-ROM usage on the Southern Illinois University of Carbondale's library network. It revealed patron difficulty in utilizing electronic indexes. Appropriate database selection and searching problems are identified and introductory workshops on electronic library resources are suggested to assist students in making better choices among the available CD-ROM databases.

From the above literature, it is apparent that training in the use of CD-ROM databases is of utmost importance to users if they are going to meet their information needs while making use of these electronic sources.

### Methodology

1. Statistics on the Usage of CD-ROM databases were collected, between 1995-201
2. A short questionnaire comprising of 11 questions (see Appendix) was compiled for the Library officer in charge of CD-ROM Literature search.
3. A Questionnaire Instrument was also given to about 54 users (difficult categories) who conduct CD-ROM Literature Search, (See Appendix). These instruments were then analysed.

## Analysis of Data

### 1. Kenneth Dike Library CD-ROM Statistics: January – December 1995 – 2001

Database	1995	1996	1997	1998	1999	2000	2001	Total
1. Cab	263	306	357	293	113	273	275	1878
2. Eric	113	224	318	234	132	208	344	1573
3. Social Science	-	69	74	88	155	198	223	807
4. Life Science	173	101	67	109	89	40	128	707
5. Applied Science	83	6	25	93	148	86	66	507
6. Tropang & Rural	52	58	102	57	100	32	64	465
7. Pope Line	39	23	25	16	59	11	65	238
8. Pais	42	36	49	73	21	2	-	223
9. Humanities	-	-	-	-	9	33	29	71
10. Abi/Inf	-	-	-	-	-	5	29	34
Users by Faculty	1995	1996	1997	1998	1999	2000	2001	Total
1. Education	128	313	264	234	117	233	399	1688
2. Science	199	54	123	270	166	255	174	1241
3. Social science	70	-	-	183	239	226	228	946
4. Agric/forestry	129	99	133	173	83	223	97	937
5. Technology	32	47	68	31	38	101	66	383
6. Pharmacy	32	65	61	16	19	17	14	224
7. medicine	41	26	13	49	39	37	17	222
8. Vet. edicine	53	18	11	50	11	30	30	203
9. Arts	9	24	12	55	16	53	33	163
10. Law	1	6	5	-	1	5	2	20
11. Arabic nss	-	4	4	-	-	-	-	8
Users by status	1995	1996	1997	1998	1999	2000	2001	Total
1. Under graduate	299	201	290	442	455	518	375	2580
2. Post graduate	325	276	288	343	197	438	533	2400
3. Staff	62	60	40	52	30	52	104	433
4. Others	8	166	22	31	55	45	52	379

The Data collected were between 1995-2001 records of data for subsequent years (2002 to present) is still being compiled due to various interruptions and unreliability (strike, breakdown of systems and power failure).

The above table shows that there is no consistent upflow (increase) or downflow

(decrease) of usage of the CD-ROM databases, in all subjects.

ABI/INI database which is mainly for Law students or personnel could be said to be consistent; it was not used at all in 1995 to 1999, reason being that it was not acquired, and when it was, the users might not have been aware. The students (Law students) also indicated in a seminar titled "Information Needs and Seeking Behaviours of Law Students (2003)" held in Library studies department in the University of Ibadan that the reason why they do not utilize the ABI CD-ROM databases meant for Law was because the information contained in them, are not enough and have no relevance most of the time to their work. ABI CD-ROM database does not satisfy the information needs of law students.

The table also reveals that the most popular databases are CAB and ERIC the peak periods been 1996, 1997 and 2001. the drop in 1999 was due to ASUU strike and hence close down of the University and Library.

Social science CD-ROM Database shows a good increase in trend; from 69 in 1996 to 223 in 2001. The same trend can be seen in the no of users by Faculty, from 70 to 228.

Humanities was not available/non existent for 1995-1998. It was acquired in 1999. There was not enough awareness of it, therefore users did not know when it was available.

Applied Science and Technology Database, which is meant for technology and engineering students and researchers fluctuates because this database has only citations (topic/title, author, publisher, year and place of publication) and no abstracts. Therefore searchers do not have enough information of what the article is about.

The searchers therefore consult more of CAB (Science based Database).

It is important to note that users use multiple databases when searching for information. They could mount two or three databases at a time.

For example, users usually combined Life science Databases with CAB to obtain more information. In most cases they do not record the less popular databases like life sciences/rural as being used. ERIC and CAB still remain the most popular databases, since they cut across subject areas.

## 2. Analyses of Library Officers' Questionnaire

A questionnaire made up of 11 (eleven) short questions was also given to the Library officer in charge of CD-ROM literature search to fill. The main reason is to throw more light into this research on the question of how many users are logged in simultaneously. Two systems according to the response were logged in simultaneously.

On how many users request for CD-ROM literature search daily, the response was about eight depending on the availability of light. According to him majority of the users are not satisfied at the end of the search.

The users prefer searching in the morning hours between 9-11am. The environment where the search is conducted is usually rowdy. This is because the undergraduate's attendance/control circulative Desk is in the same location.

On the question of whether the computers are enough for users, the library officer responded that more computers are needed, at least six should be logged in at a time to prevent waiting users from being frustrated. On the printing facility, the response was that the printer is too slow,

and waste a lot of time. In response to the question of whether the journals needed by users after a search are available in the library for more detailed information. Thus enhancing document delivery, the Library officer, responded "NOT at ALL".

When asked to enumerate some advantages and some problems which he had noticed in the use of this Online Search, he enumerated the following advantages -

- (1) It helps the researchers in getting some needed information.
- (2) It also helps the users to develop their technological skills.

The problems include, non-availability of enough PCs, electricity problems, different problems of the printer, and most importantly lack of knowledge on how to conduct a search by the users.

## 3. Analyses of Users' Questionnaire

In other to find out more information on the utilization of CD-ROM databases a short questionnaire on the utilization of the CD databases was sent out to users. A total of 54 users were arbitrarily given these questionnaires as they came to conduct searches. In analysing these questionnaires it was found that the users who filled them out, were made up of 39 undergraduate, 13 postgraduate students, no staff and 3 outside users.

## Reason for carrying out CD-ROM Literature searches

Category	Reasons	No
Outside Users	For Projects	2
	For research paper	1
Postgraduates	For Academic Purpose	2
	For research	4
	For projects	3
	For more information	1
Undergraduates	For projects	33
	Academic	01
	For more information	04

Other reasons given were, it is less stressful and you can browse on it with ease. For assignment, seminar presentation and to obtain current materials.

Two of the outside users stated that they carried out the CD-ROM literature search for gathering information for their projects and one mainly for research purposes. Among the postgraduates, two were for academic, four for research purposes, three for projects and one for more information.

Majority of the undergraduates (33) stated that their reason for searching the CD-ROM was mainly for gathering information for their projects. Only one was for academic reason and four for more information.

From the above statistical data, one can find that the CD-ROM databases are consulted really when users need information to carry out a particular task. It is not used mainly for browsing, or entertainment but mainly for serious work or search other reasons given by a good minority is that you can browse on it with

ease, for assignment, seminar presentation and to obtain better materials.

## Preference of Literature Search Sources

	Frequency	%
Print sources	6	11
CD-ROM databases	17	31.5
The Internet	21	39
Not sure	10	19

Majority of the users preferred using the Internet (21), followed by the CD-ROM databases (17). A large number also are not sure of which they preferred and other did not fill that part of the questionnaire at all. Six of the respondents preferred the print sources.

## Ability to Conduct a CD-ROM Literature Search

No	Yes with Assistance	Yes with no Assistance
38	15	-

Majority of the searchers (38) cannot conduct or causing a literature search by themselves or even when they are assisted. Fifteen (15) of the CD-ROM searchers can conduct a literature search when assisted by a library officer. None indicated that they can carry out the search totally by themselves alone.

On the question of whether they had undergone any training in the use of CD-ROM for carrying out literature search, forty five (45) of the users indicated that they have never undergone any training in CD-ROM literature search, only eight of them have any form of training in CD-ROM literature search.

In response to the question on how often they conduct literature search,

majority of them (39) do not often conduct CD-ROM literature search while only 14 (fourteen) of them often conduct CD-ROM searches.

### CD-ROM Databases often used

Databases	Frequency	%
ERIC	04	7
Popline	03	5.6
Life Science	06	11
CAB	02	3.7
Social Science	09	16.7
Humanities	05	9.3
PAIS	01	1.9
Applied Science	09	16.7
Any other	02	3.7

The above table, shows that more of the students preferred using the Social Science and applied science databases (nine each), this is followed by life science (6), Humanities (5), ERIC (4), CAB (2) and PAIS (1).

It is possible that these users, choose the Database they would prefer to search from according to their subjects, e.g. those in Humanities would chose humanities and those in Science would choose Applied Science etc. Only a few of them perhaps choose ERIC or PAIS in combination of their subject Database for more information.

ERIC and CAB were popular with users previously because they were the first databases purchased by the Library.

About 22 (twenty two) students did not fill this aspect of the Questionnaire. It is possible that they are not familiar with the Databases.

In response to the question on the reason why they use the databases chosen, about 7 of the students, stated that it is because it is relevant to their discipline, 2

indicated that it gives broad information on the subject matter; about four indicated that it is their area of specialization. About 4 stated that the Life Science Database gives more detailed information.

Others also stated that their databases were more accessible, deals with the research they are working on relates more to their field of study.

### Suggestions

On the suggestions about how to improve on the existing services, the users made some useful suggestions, most of them emphasized the need of training for both the CD-ROM searchers and the library staff. they stated that the relevant library staff would require some element of motivation and more training to guarantee efficiency at all times. Among other suggestions given were:

- (1) The CD-ROM Databases should be updated more regularly.
- (2) The CD-ROM literature search service should be complemented with internet service, as this could enhance document delivery, especially if some of the Journals on the internet are subscribed to.
- (3) Computers and CD-ROM search facility should be available in faculty and departmental libraries, to create more awareness.
- (4) A standby generator should be made available to decrease the problem of electricity and interruption of search.

The users also suggested the introduction of 24 hours service, so that searchers could come in any time and search.

## Conclusion/Recommendation

It can be seen from the above study, that users are interested in the use of CD-ROM Literature search. The only problem is that they may not be very knowledgeable on how to conduct or make a good search that would yield them good results. This is why they desire and request for training from the library. Training on the use of CD-ROM databases for literature search, should be made available in libraries and users should be trained on how to search all the time. It should be a continuous process. This will help enhance the usage of this facility.

The library staff in charge should be given longer training so that he/she would be able to teach and train the searchers as they come.

The provision and connection to the internet is very important. Sometimes details of the journals they had read their abstract from the CD-Rom search, could be available in the internet and they would like to download them. This would make the process of document delivery very much available in libraries. The information needs of users will also be duely satisfied by this.

Economically speaking, this may be very difficult, but with time, the popular journals often demanded should be the one libraries should subscribe to.

It is also important to take note of the most popular CD-ROM databases used by the clients. The popular ones should be purchased more often and the unpopular ones especially ABI (for law students) should be discontinued. Knowledge of usage patterns and levels of use is difficult, but important, because prices or licensing restrictions are often based on the amount of use, total numbers of potential users, or numbers of simultaneous searchers allowed (Tenopir and Read 2000).

The use of CD-ROM databases would go a long way in solving the problem of acquisition of information, and meeting the information need of developing countries but to make full advantage of this, many problems have to be solved. These include the issue of power failure, more PCs, manpower, and trained personnel, and most importantly the issue of document delivery. This is a very central problem. Access to indexes and abstracts without providing the full text is more or less increasing or stimulating the appetite of an individual without satisfying or feeding the individual. It is not possible for any library in a developing country to possess all the journals available in the databases. The only solution is an established document delivery program. According to Peggy Johnson (1994) CD-ROM workstations and databases should not be provided unless the institution which is to receive them can obtain the information resources from external sources. The necessity for establishing a system for document delivery is unavoidable and must be addressed whenever CD-ROM indexes and abstracts are considered for a developing country. This view is supported by the researchers.

The non-availability of the journals may be the reason why the usage of the CD-ROM databases have not really made much impact to both staff and students in the University of Ibadan.

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5. How is the environment? (Tick the appropriate one)  
(a)Conducive (b) Rowdy (c) Organized
6. Is the environment air-conditioned?
7. Are the number of computers enough for users?
8. Are users usually satisfied after a search?  
(a) Yes.....  
(b) No.....
9. How is the printing facility?
10. Are the journals needed by users after a search often available in the library?
11. Can you enumerate some advantages and some problems which you have noticed in the use of this Online search?

## APPENDIX 1

### Questionnaire for the Library Officer

1. How many users on the average are logged in simultaneously?
2. Approximately how many users request for CD-ROM search daily?
3. Are all of them satisfied?
4. What time of the day do many users prefer (morning, afternoon, or evening)?

## 11. APPENDIX 2

### Users' Questionnaire

Please answer the following questions?

1. Name:.....  
.....
2. Sex:  
.....  
.....
3. Please tick where appropriate  
Undergraduate [ ]  
Postgraduate [ ]  
Staff [ ]  
Outside users [ ]

4. Department [ ]
5. Why do you want to carry out a literature search?.....
6. Why do you want to use the CD-ROM databases to carry out this research
7. Have you tried to use the print source's of information (Abstracts and indexes) in your field to search for information?
- Yes.....
- No.....
- Reason.....
8. Have you ever used the internet to search for literature?
- Yes.....
- No.....
9. Which do you really prefer to use while searching for information?
- (a) The print sources
- (b) The Online Sources (in this case CD-ROM database)
- (c) The Internet
10. Can you conduct a search by yourself? Using the CD-ROM?
- Yes.....
- No.....
11. Do you sometimes need the assistance of the Library staff?
- Yes.....
- No.....
12. Have you undergone any training in the use of Online sources? (e.g. CD-ROM search) to search for information?
- Yes.....
- No.....
13. Do you often conduct a CD-ROM literature search?
- Yes.....
- No.....
14. Which Databases do you often use?
- ERIC
- Popline
- Life Science
- CAB
- Social Science
- Humanities
- PAIS
- Applied Science
- Any Other
15. Can you state the reason why you prefer the Databases/s that you use?
16. What time of the day do you prefer to conduct your literature search?
17. Are you often satisfied after a search?
- (a)
- Yes.....