Impact of Application of Information Communication Technologies for the Information Collection Development: A case study of Kenya Institute of Education.

Felix M Obegi^{1*}

¹Department of Accounting and Management Science, Egerton University

¹obegijnr@egerton.ac.ke

The aim of the study was to investigate the effects of application of information communication technology (ICT) for collection development. It revealed ways in which collection development practices in libraries could be enhanced by use of information communication technology with the view of suggesting a framework for effective development of information collections at Kenya Institute of Education. Seven components in the evaluation of collection development included, needs of assessment of the community that a library serves, development of collection development policies; budget allocation; selection process, acquisition, collection usage evaluation, and de-selection was used. The study aimed to find out how ICTs and software would affect the component of the process of collection development. It also revealed how the library has applied ICT and the challenges and constraints faced. Information communication technology facility is not fully utilized for collection development and management in KIE library in spite of many information resources that were once available in print only being available in electronic formats. This transition is apparently necessitated by emergence of modern Information Communication Technologies and its unprecedented impact on provision of library services.

The responses were collected, summarized, entered, and analysed using SPSS statistical software. Descriptive statistics was used to analyse and understand the factors that affect CD. The results were presented using tables and percentages. Preliminary analysis was done descriptively by use of averages with an aid of a statistical package to answer the research questions. Currently, there has not been any effort to apply ICT in collection development though the library runs with an integrated library management system that is mainly used for housekeeping. ICTs need to be applied to all the activities of library and more so for collection development to ensure complete efficiency and effectiveness and to add value to information resources so that they can be used more effectively.

Key Words: Collection, Development, Information Communication Technology

1.1. Introduction

The Kenya Institute of education is the national curriculum and research centre. It was established in 1968 under the education Act Cap 105 211 of the laws of Kenya. It operates under both the education Act and Legal notice no. 105 of 1976, which was amended through legal notices no.144 of 1980, 126 of 1984 and 125 of 2004. Not withstanding the provisions under this legal framework,

the institute's authority and decision making process were restricted. As a result, the ability of the institute to fulfill its mandate is constrained. The mission of the Kenya Institute of Education is to provide curriculum and curriculum support materials responsive to the needs of their varied clientele. This is achieved through continual research, evaluation, assessment and the monitoring of our client needs, in a changing social, economic and technological environment.

Therefore, Kenya institute of education being the only Institution in Kenya with the mandate of giving curriculum guidelines should have its library collection development automated with proper written collection development policy guiding collection development to ensure quality curriculum. It should be able to uphold modern information systems in their processes including collection development system among other areas in the Institute.Mosher (2000) defines collection development as the effective and timely selection of library materials forming carefully constructed areas of subject collections, shaped over time by bibliographic experts. It is the synapses linking thousands of decisions into sensitive provision of needed research materials, the capacity to make the parts fit the needed whole. Collection development includes assessing user needs, evaluating the present collection, determining selection policy, coordinating selection of items, weeding and storing parts of the collection and planning for resource sharing.

Agee (2007) denotes that the acquisitions librarian acquires materials to build the best possible collection; to have a collection of value to library users, it is necessary to know who the library users are. Acquisitions librarians can use community assessment results to better select materials that are relevant to the library community. Good material selection is the heart of collection building. After determining the information needs of the community, it is the responsibility of the acquisitions and subject specialists to concentrate their use of selection tools that met the perceived user's need. If selection was done by vendor's online selection form for subject specialist, acquisition may retrieve the electronic requests, place the order, and have a paperless trail.

Gessesse (2000) observes that the 21st century library, even now at the threshold of the century, is rapidly migrating from print format to digital content and this has wide spread implications for many areas of librarianship, but also reflects larger networked global changes in the storage and retrieval of information in scholarly research, and in the gratification of immediate needs of the young people. During this century information is demanding more immediate and less contemplation. It is the world that requires the translation of information into knowledge with little individual effort being needed; the juxtaposition of accurate information with appropriate time and place so that it can be applied as knowledge. This was a challenge to the librarian who invited creativity, speculation, and sense of librarianship diversity and capability to thrive in a globally networked technological environment in future. Goal for librarians in this era is rapidly changing because information technology is to find and create some balance in the collection. During the past decade, print indexes were largely replaced by CD-ROM indexes. Today many journals are available in full text online, but no longer available in print. This transition in serials from print to CD-ROM then to internet based online database access, demands flexibility in the acquisitions of

serials departments. Both staff tasks and workflows need to be responsive enough to format changes that good working practices can keep pace.

Most major serial publishers have digitization projects well underway. Many publishers are now creating and distributing serial content only in digital format. This allows journal content to be available via computer whether it is from a publisher's website or through a database product (Chisenga, 2006). The term information technology is a branch of engineering that deals with the use of computers and telecommunications to retrieve, store and transmission of information (Haas, 2000). Resource sharing in Kenya's educational institutions has been growing rapidly in recent years, in which collection development plays an important role. The development of libraries, based on rich collections both in printed and electronic media add more information to the network infrastructure and so promote the society's economic construction, education, science and culture, and makes great contribution to the worldwide resources sharing.

KIE strategic plan (2007) denotes that Kenya Institute of education library exists to support curriculum developers in research and information needs as well as teaching of students at all levels before university. They are charged with the responsibility to provide adequate information materials to satisfy the needs of curriculum specialists, researchers, administrators, stakeholders as well as students from early childhood development education to any tertiary college before university level. The provision of information materials is the most fundamental activity of all libraries because a highly sophisticated system of information storage and retrieval is of no use unless it affords access to the right documents. Similarly, a highly trained library staff becomes ineffective without the necessary resources and a beautiful library becomes a monument without materials needed for the use by the target clientele. Collection development is the process of identifying the information needs of the clientele that a library serves and acquiring materials that would meet those needs. According to Reitz (2008) collection development is the process of planning and acquiring a balanced collection of library materials over a period of years, based on an ongoing assessment of the information needs of the library's clientele, analysis of usage statistics, and demographic projections.

The study sought to find out how ICT especially information networks (internet, intranet, extranet, and World Wide Web) and software (databases, application and communication software) affected the seven component of the process of collection development in libraries. It also sought to find out how the library had applied ICTs and the challenges and constraints faced in application of ICTs in collection development.

1.2 Statement of the Problem

Information Communication Technologies (ICTs) are available at the KIE library, effective information communication management is expected to translate into effective library services for users. User services in this library are less than satisfactory and users' satisfaction has not been documented. Collection management is most effective when ICTs are applied to processes and procedures in the library management. This statement highlights the various factors which

librarians ought to consider in realizing brighter collection development prospects. These factors includes: the formulation of suitable collection development policy and participation in resource-sharing programmes with other libraries enabled by incorporation of ICT for collection development.

The research therefore sought to find out the factors that hinder KIE library from implementing ICTs during collection development processes. It sought to establish the extent to which ICTs are available, how they are used, and how they affect collection development and management in this particular library.

1.3 Research Questions

- i. To what extent is ICT used for CD at the KIE library?
- ii. What is the impact of ICT application for collection development and management in the KIE library?
- iii. How is the adequacy of the funding of ICTs for collection development and management at KIE library?

2.0 Literature Review

2.1 Collection development process

The collection development process involves analyzing the needs of the users that are being served; establishing a collection development policy framework that will guide the collection process; selection and acquisition of the relevant information materials; and evaluation and deselection of the collection.

2.2 User Needs Analysis

Collection development process begins with the community knowing the users and analyzing their needs first before any other process. Effective collection development can only be possible when it is based on sound knowledge of the community that is being served. Haas, (2000) states that user needs analysis can be done through analysis and surveys although much information can be gleaned by studying the syllabus, sectional web pages, curriculum vitae of researchers and academics, current research projects, minutes of academic meetings. Allen, (1994) says that is valuable to evaluate circulation statistics, interlibrary loans requests, and analyze the size, depth, breadth and growth of the library's collection.

2.3 Collection Development Policy (CDP)

A written collection development policy guides the process of collection development. A Collection development policy is a document which defines the scope of a library's existing collections, plans for the continuing development of resources, identifies collection strengths, and outlines the relationship between selection philosophy and the institution's goals (White and Crawford, 1997). It is an important tool for guiding all activities related to planning, budgeting,

selecting and acquiring of library materials. It informs everyone about the nature and scope of the collection and collecting priorities. It also provides a means of assessing overall performance of the collection development program. A written collection policy can either be in print format, electronic format or both formats and must be updated annually.

2.4 Selection Process

The purpose of selection process was to ensure that useful and relevant materials were acquired to meet the needs of the users. In most libraries, identification of potentially useful materials to be acquired draws heavily from published lists, catalog, flyers, announcements, and bibliographies. Typically, there are full-time collection development officers. However in smaller libraries with limited budgets there is strong faculty involvement in selection; sometimes the faculty has sole responsibility for building the collection.

ICTs have made the selection of materials more effective and faster. Selection of information materials can now be done electronically through electronic tools such as publishers' catalogs, book vendors' web sites (for example amazon.com), online catalogs of book distributors, integrated library management systems, online book reviews from databases, and search engines (for example Google books). Online databases are replacing bibliographies used for selection. In the selection of relevant information materials the most commonly used selection tools are Printed publishers' catalogues, online publisher's catalogues, book lists, books reviews from magazines and newspapers, CD/ROM Databases, online sites e.g. Amazon, book Finder, best book buys, book displays, user suggestions through the library system.

2.5 Electronic collection development

Developments in ICTs have revolutionized information and changed the seeking behaviors of library users. Access to information through the internet is now easy. New technologies have facilitated the rapid transformation of data and information into digital form, while development in software has provided powerful new methods of collection development and management. As a result, there has been a change in ways in which documents and information are produced, stored, organized and accessed. The changes have affected the information seeking behaviors of library users. The developments have meant that users are now able to access information via local and global networks, so that fewer visits are being made to the libraries. Gbaje (2000) denotes that digitization, which is another form of building electronic collection, enables the information to be delivered in electronic format, and users are becoming increasingly reluctant to use physical materials, perceiving the internet to be the answer to their informational needs. The library now has many competitors for the provision of information to the users. This therefore calls for efficient and effective methods of collection development and management. It also means that while the practices of collection development which were developed in the world of print publications may not change radically with new technologies, methods of decision making and specific selection guidelines must be adjusted significantly to incorporate new information formats.

According to Jenkins and Morley (1996), the process of developing electronic information resources includes acquisitions of electronic resources such as databases, e-books and e-journals through licenses and access to quality free web based resources. This process which is commonly referred to as electronic collection development requires that a library should have appropriate ICT infrastructure such as a reliable internet connectivity and web site to provide users with access to relevant information for research, learning, and teaching.

Library users are beginning to expect electronic information delivery that is speedy, accessed at remote sites, and full-text. Therefore the option of not providing electronic information is no longer available for most libraries in spite of their limited budgets. Many libraries are coming together to form consortia for electronic resource sharing and technology support. Examples of such consortia arrangements in Kenya are Kenya Library and Information Services Consortium (KLISC) and Kenya Education Network (KENET).

KLISC is a consortium of all university and research libraries in Kenya that enables them to gain access to electronic resources at a subsidized cost through cost-sharing arrangements. The Challenges associated with acquisition of electronic resources include: High cost of subscription is a major challenge cited as an impediment in acquisition of electronic resources. Restrictions paused by the publishers of electronic resources on access of the resources also limit access.

2.6 Use of ICT in collection evaluation and weeding

It is important to continuously carry out collection evaluation for a balanced and relevant collection. Librarians need to know the desired levels of their collection. Use of usage statistics generated by the integrated library systems, computerized data on annual expenditure, computer generated acquisition reports, and online user surveys are valid, efficient and effective tools of examining the state of a collection. Libraries should put their OPACs in the web. Web-OPACs can help collection development librarians to compare their collection with other libraries. Such tools should be used often to evaluate the collection and the collection development process. Transaction log analysis of electronic resources should be used to evaluate electronic journals and databases so as to know which ones are being used and the ones that are not being used. This information can also be used to weed out the materials that are not being used, or are superseded.

2.7 Use of ICTs in electronic collection development

Due to changing information formats and user preference for electronic resources, libraries need to put more emphasis on electronic information collection. Libraries should seek to build a collection that is either hybrid (50% print and 50% electronic) or one that is more electronic based than print-based. Besides subscribing to e-journals, libraries should build a collection of eBooks, books in other formats and other digital resources.

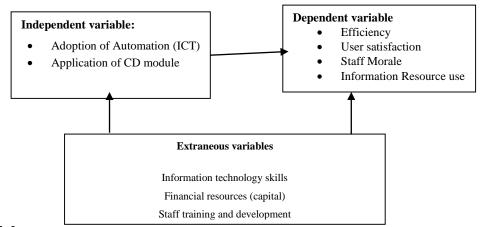
As the saying goes that 'Efficiency is doing things right; effectiveness is doing the right things' modern libraries need to apply and fully utilize Information Communication Technologies in collection development process in order to meet the changing user information needs and effectively use the available funds. Currently, there have been efforts to apply ICT in collection development but these efforts need to be stepped up in that ICT need to be applied in all the activities of collection development to ensure complete efficiency and effectiveness and add value to information resources so that they can be used more effectively.

2.8 The Conceptual framework

A framework for mapping the knowledge gained from both the literature and the case studies is given in the figure below. The framework gives a pictorial representation of a conceptual format of the literature for representation purpose. The independent variables are considered as the application of ICT processes and Automation of Collection Development module that will lead to efficiency, user satisfaction, staff morale, and good collection.

The extraneous variables such as staff remuneration, staff development and staff training, availability of electric power, information technology, as well as support with financial resources will enable possibility of putting independent variables in place which in turn affects the dependent variable positively. It searched to illustrate the impact and effect of adoption of ICT and application of CD module in the processes of CD. Its management in the library revealed its impact to library users.

Figure 1: Conceptual framework showing the relationship between the independent variable, dependent variable and the extraneous variables.



3.0 Methodology

3.1 Research design

The study used a descriptive research design. The instruments used were questionnaires. Questionnaires were filled by users, library staff, and library managers although some of the questions varied depending on the category the personnel in question. It was a case study on incorporation of ICT in collection development for KIE library.

3.2 Sample size

KIE library serves a population of about 600 both external and internal users. A standard table was used to determine sample size. By use of it 100 respondents corresponded to the population size of 600 subjects that were in question to be represented. They were grouped into 2 distinct groups i.e. KIE library staff and KIE library users who were non KIE staff. It was assumed that the selected sample contained elements representative of the characteristics found in the entire group, Orodho and Kombo, (2002). Below is the standard table that was used.

3.3 Data collection

Data collected for this research was between August and September 2012. A descriptive study was carried out applying both qualitative and quantitative methods of data analysis. Data was collected by use of questionnaires. Questionnaires were developed addressing customized objectives and research questions and handed to the respondents. The questionnaires were well thought out to avoid confusing respondents as to the nature of information required and to avoid discouraging them to ensure best turnout.

3.4 Data analysis

The study adopted both qualitative and quantitative approaches, because it employed nonempirical analysis as well as summarizing data using descriptive analysis respectively. Numbers and percentages were used for quantification. The study concerned itself mainly with description of issues rather than statistical analysis of occurrences. Preliminary analysis was done descriptively by use of averages with an aid of a statistical package and factor analysis was then used to answer the research questions.

4.0 Data Analysis and Interpretation

4.1 Rating of KIE library collection by users.

Most respondents indicated that KIE library is good and this catered for 47.61% against 14.2 % who felt the library was just fair while those who indicated the library as very good and excellent equalized at 19.5% for both. None of the respondents rated it as bad or otherwise. This is represented by table 1 below.

Table 1: Rating of KIE library collection by users.

Variables	N	percentage		
Bad	0	0		
Fair	12	14.28		
Good	40	47.61		
Very good	16	19.05		
Excellent	16	19.05		
Total	84	100		

4.2 Areas of interest for users

Most of the KIE library users are clients of curriculum course books and general collection that took a portion equivalent to 46 represented by 54.76%, Reports took 14 represented by 16.67%, Newspapers and serials were 18 represented by 21.43% while audiovisual had the least users with only 6 represented by 7.14%. The following is a representative picture of all respondents as shown in Table 2.

Table 2: Areas of interest

Various sections		N		Percentage
Course books and general collection	46		54.6	
Reports		14		16.67
Newspapers and serials		18		21.43
Audiovisual	6		7.14	
None of the above	0		0	
Total	84		99.84	

4.3 Methods used for retrieval of information

Various methods are used for accessing information at KIE library including 13 people who preferred using OPAC equivalent to 15.476%, use of card catalogue by some users who in this case were 17 equivalent to 20.238%, serendipity with 19 equal to 22.619%, while those who accessed by assistance from the reference librarian were 27 representing 32.14%. Those who used all the four methods that are mentioned were 8 making it 9.52%. Table 3 below represents this data.

Table 3: Methods used for information access

Type of method used	N	Percentage	
Opac	13	15.476	
Card catalogue	17	20.238	
Reference librarian	27	32.14	
Serendipity	19	22.619	
All the above	8	9.52	
Total	84	99.993	

4.4 Category of e-resources accessed

The highest e-resource used in the institute is the internet with about 30.95% that has been enabled by the organization, while the second best are the e-books and e-journals that have been subscribed by the institute taking about 28.7%. Opac is accessed by 19.05% while Institute's database is accessed by 11.90%, while Institute's LAN is accessed by a minority 9.52%. Table 4 below shows that representation. Despite availability of an electronic system for accessing information only a

mare 14.48 percentage uses it while all the others totaling to almost 85 percent use the manual systems.

Table 4: Types of e-resources

Type of e-resources	N	Percentage	
e-books and e-journals	24	28.57	
Institutes database	10	11.90	
Internet resources	26	30.95	
Institutes LAN	8	9.52	
OPAC	16	19.05	
Total	84	99.99	

4.5 Reasons for not accessing e-resources

66 people out of a possible 84 do not access e-resources with different reasons distributed between clients not being aware of the existence of e-resources in the institute and this took 78.57%, preference for using print materials was at 10.71% that tied with few or lack of computers for users to access e-resources while no one lacked information technology skills or had a problem with e-resources being guarded against use for anybody. Despite this library having subscribed to the e-resources they are highly underutilized mainly because their users are not aware of the existence of these resources. Table 9 represents this tabulation.

Table 5: Reasons for not accessing e-resources

Reasons for not accessing e-resources		N		Percentage
Not aware of the existence of e-resources		66		78.57
Lacking skills to enable me use e-resources		0		0
Preference for using print resources	9		10.71	
E-resources are guarded against use		0		0
Few or lack of computers for users to access e-resources		9		10.71
Total	84		99.99	

4.6 Any other type of resources that users wish to be added to the collection

Other resources that users wished added to the collection included 11 respondents an equivalent of 13.1% who indicated that they would like CD'S to enhance the current collection, and DVD's with 21 equivalent of 25%. Those who preferred videotapes were 10, equal to 11.9% while the highest percentage was 27 respondents' equivalent to 32.14% who preferred digital resources while any other resources that were mentioned occupied 17.86% equivalent to 15 respondents. The results are shown in table 10 below.

Table 6 : Other types of resources

Resource types	N	Percentage
CDs	11	13.1
DVDs	21	25
Videotapes	10	11.9
Digitized information resources	27	32.14
Any other	15	17.86
Total	84	100

4.6 Difficulties in accessing e-resources

Difficulties of accessing e-resources had various answers with those who cited expensive to acquire hardware being 8 equivalent to 13.33%, those who said for effective access one needed faster internet in terms of speed were a majority with 23 respondents equal 38.33%. Those who said the library lacked computers were 29 equivalent to 48.33%, while those with limited technological skills were equal to 0%. Those who preferred use of print media were 8 equivalent to 13.33%. Internet stability is seen to be the biggest hindrance for the access of e-resources in this library. This is shown in table 7.

Table 7: Difficulties in accessing e-resources

Reasons		N	P	ercentage
Expensive to acquire in terms of Hardware		8		13.33
For effective access one needs faster internet in terms of speed 38.33			23	
Lack of computers in the library		29		48.33
Limited technological skills		0		0
Preference to the print media	0		0	
Total				60
99.99				

4.7 Collection development tools

Respondents indicated that different tools were used for collection development with most of them saying that print publishers were mostly used which were 17, online publishers catalogues were 11, booklist were 10 while book reviews from magazines and newspapers were 3. The rest were CDROM databases at 2 and online sites were 3. Book displays were 5 while user suggestions through the library management system were 9. This can therefore be interpreted to mean that manual selection tool was more commonly used than electronic selection tools in this library. Table 15 below shows this.

Table 8: Collection development tools

Collection development tools		N		Percentage
Print publishers catalogue		17		28.33
Online publisher's catalogue	11		18.33	
Booklists	10		16.66	
Book reviews from magazines		3		5
CDROM Databases	2		3.3	
Online sites	3		5	
Book displays	5		8.33	
User suggestions through library management system	9		16	
Total	60		100	

5.1 Summary

The purpose of the study was to find out the impact of application of information communication technology at the KIE library. The study as carried out as a case study type of study. Population consisted of 84 respondents. The instrument used for data collection was the questionnaires that were administered to 100 respondents though only 84 were successfully filled and returned. Analysis showed that ICTs were under utilized in most library activities that included collection development at the KIE library.

5.2 Recommendations

Use of ICT in user needs assessment at KIE library need to employ technological methods to find out whether there is information that is routinely sought out by users, and users' attitudes to and perceptions of the collection. Additionally, Web 2.0 technologies and social networks (blogs, wikis, RSS feeds, Twitter and Facebook) provide a perfect technological method of communication between the library and its users. Such methods should be used in marketing the library, its collection, and most importantly to assess the perceptions of users towards the library collection. The budgetary constraints faced by KIE library and the demand for accountability by organizational administration calls for efficient and effective use of the financial resources available. There is a need, therefore, to use an automated system to manage and control the financial resources available. This will ensure informed stakeholders as well as upholding integrity within the whole organization. The components of the CDP should be communicated to users, and particularly the people involved in different aspects of collection development. An electronic collection development policy would be easier to communicate through the library website or the institution's intranet.

The collection development policy should be consulted regularly, and reviewed and revised frequently. An electronic policy document would be easier to refer to and revise regularly. The use of various electronic selection tools not only simplifies selection but also increases recommendations by staff and library users. The use of online networks such as the internet and

intranets to expedite book selection and ordering should be emphasized. Online publishers' catalogues, CD-ROM databases, online book reviews, online sites, and online alert services provide updated information and more details about items. Online shopping for locally available information materials and those that are acquired from overseas countries should be embraced.

For collection evaluation and weeding use of ICTs should be embraced. Usage statistics generated by the integrated library systems, computerized data on annual expenditure, computer generated acquisition reports, and online user surveys are valid, efficient and effective tools of examining the state of a collection. Such tools should be used often to evaluate the collection and the collection development process. Transaction log analysis of electronic resources should be used to evaluate electronic journals and databases so as to know which ones are being used and the ones that are not being used. Due to changing information formats and users' preference for electronic resources, KIE library need to put more emphasis on electronic information collections. It should seek to build a collection that is either hybrid or one that is more electronic-based than print-based. Use of ICTs in cooperative collection development ICTs can be used to overcome budgetary constraints by adopting cooperative collection development, whereby libraries agree to enter into agreement with one another regarding collection development. Each library agrees to concentrate collection develop in specified subject fields and then borrow from each other. The use of online catalogues to search the database of member library can enable each library to know what the other library has in its collection. This agreement can also be extended to electronic resources and access provided using remote access and electronic document delivery among the member libraries.

5.4 Conclusion

Kenya Institute of education library need to apply and fully utilize information communication technologies in collection development activities in order to meet changing user information needs and use available funds effectively. Currently, there has not been any effort to apply ICT in collection development though the library runs with an integrated library management system that is mainly used at the circulation desk. ICTs need to be applied to all the activities of library and more so for collection development to ensure complete efficiency and effectiveness and to add value to information resources so that they can be used more effectively.

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