

Short Communications

Use of Internet Services in Ghanaian University Libraries

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Abstract

This study investigated how students, lecturers and research fellows have been using the Internet services provided by the three oldest public university libraries in Ghana – the Balme Library of the University of Ghana, Legon; the Kwame Nkrumah University of Science and Technology Library (KNUSTL); and the University of Cape Coast Library (UCCL). These libraries have well established IT facilities and provide Internet services dedicated to teaching, learning and research. Data were collected through a questionnaire administered on 240 users of the libraries and through interviews with the library staff in charge of IT services in the libraries. The study found that most of the respondents used the services only once in a while and mainly for sending and receiving information. The study recommended that the university libraries should expand their computer facilities, train users in different online skills, and compile and publicise the Internet sites useful for obtaining different types of research information.

Introduction

University libraries in Ghana, like in most other African countries, usually face challenges in gaining adequate access to global scientific and research literature. This affects the libraries' ability to provide current and scientific information to support academic and research work. In the 1990s, CD-ROM, E-mail, Internet and Inter-Library Loan and Document Delivery Services were introduced at different times to the public university libraries in Ghana. The services first began in the Balme Library, University of Ghana in 1994, and later in the other four public university libraries. This paved the way for a dramatic transformation of the libraries' roles as information providers. University libraries in Ghana are now making further progress in the acquisition of information technologies that permit access to global electronic resources in order to strengthen their ability to provide current, adequate, reliable and timely scientific and research information to their users.

The advent of Internet access in the university libraries has clearly helped to transform the level of access by users of Ghana's public universities to primary, secondary and human information sources. The Internet facility has enabled links to the online

public access catalogues (OPAC) of other libraries, as well as access to remote electronic databases. E-mail is being used to provide reference, inter-library loan and document delivery services. E-mail has also facilitated the way scholars interact with each other. It has enhanced the exchange of ideas and collaboration between researchers, faculty and students. E-mail has provided better links between libraries in Ghana, especially academic and research libraries resulting in the birth of Consortium of Academic and Research Libraries in Ghana (CALIGH). The Internet access services has augmented the information resources of the university libraries for the improved satisfaction of user needs, and the university libraries can now be seen as providing a more cost-effective information service for teaching, learning and research.

Research Objectives

An important research issue in this connection pertains to how the Internet services being provided by the libraries are currently being used. Understanding the current patterns of use is crucial in order to determine how effective the services are, and how they can be further developed. This requirement directed this study which sought to find out how students, lecturers and research fellows are making use of the Internet services being provided by the public university libraries in Ghana. Specifically, the study set out to answer the following research questions:

- (i) How often do students, lecturers and research fellows (users) use the Internet services?
- (ii) For what purposes do the users exploit the Internet services?
- (iii) Which Internet facilities are used most often by the users?
- (iv) What challenges do the users face when using the Internet services?

Literature Review

According to Tedd (1993), Information Technology (IT) is a "combination of computing and telecommunication for the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numeric information." According to Sidiqui

(1997), IT facilitates speedy and easy access to unlimited information from different sources. It also provides round the clock access to users, and makes information flexible for all users according to their needs. In this study, IT services were defined as those services that use computer and telecommunications to make available electronic information resources to meet the information needs of users.

In today's networked global village, ready connectivity or access to the Internet is clearly the most useful IT service that a library can provide for its users. The Internet is an information resource which brings a wide range of materials from around the world to the user. The availability of huge mass of online information from computer files, library catalogues, databases, government organisations, and newsgroups, industrial and commercial sources, as well as from individuals, makes the Internet indispensable for academic and research work. McNab and Winship (1996) perceive the Internet as a low-cost means of communication, which is heavily used by academic libraries to reach a variety of valuable services.

E-mail is considered the most widely used Internet resource. It has greatly increased the patronage that Internet enjoys. Kennedy (1999) expressed the view that E-mail should suffice for anyone who needs one good reason to justify looking up to the Internet. Through e-mail, distance and time are no more barriers to effective communication. Academic libraries offer a variety of services to the academic community via e-mail. Notable among such services are inter-library loan, document delivery, and reference services. E-mail has become essential for academics at all levels to enhance their research activities, publications and other professional activities, as well as in communicating with colleagues and students both locally and internationally. E-mail also enhances the building up of the "invisible college" network of scholars, which keeps scholars in touch with the latest development in their fields. Adams and Bonk (1995) are of the view that the large percentage of faculty who used e-mail and the high frequency of e-mail use as found in their study make e-mail "an optimum service venue". Alemna (1999) also states that the introduction of e-mail in academic libraries in Ghana has brought notable improvements. He pointed out that e-mail has offered a fast and

relatively inexpensive means of document delivery, a task that has always posed a major problem for Ghana and many other African countries.

E-mail is useful not only for one-to-one exchanges, but also for enabling participation in multi-lateral information exchange, such as mailing lists, electronic discussion groups, and electronic bulletin boards. These other facilities provide opportunities for users of e-mail to engage in scholarly discussions and information exchange. Mailing lists are used to share knowledge and expertise with people who have similar interests, thereby keeping them up to date with the latest research and development on particular topics. According to Krol (1994), three things may happen when using the mailing list: (i) Someone might post a news item announcing a great find (new discovery); (2) Great finds (new discoveries) would probably be collected into a group of frequently asked questions (FAQ). FAQs are posted to the newsgroup periodically (usually monthly). By reading FAQs, subscribers can instantly be brought up-to-date on whatever the newsgroup is discussing. (3) If one does not find what he/she wants in a FAQ, one can "go fishing". In this case, one writes a posting to his/her interest newsgroup putting one's need across. It is easy to cast out and see what one can catch. Under normal circumstances, one would have to subscribe to a mailing list in order to receive mails that members exchange.

Electronic bulletin boards also enable millions of users worldwide to exchange information on a vast range of topics. A bulletin board organizes discussions under a set of broad headings called newsgroups. The pieces of information or "articles" that make up the "news" are written by people interested in the topics. Articles are posted to the newsgroups so that others can read, reply and comment on them. There are moderated scholarly discussions and news groups where contributions are edited and scrutinized, so that only useful contributions get to subscribers. Inside each newsgroup, there are usually multiple discussions going on in an orderly manner, under specific subjects.

Methodology

The descriptive survey methods, that included a questionnaire and interviews, were used for the data collection. The study covered the main libraries of the three oldest public university libraries in Ghana: Balme Library (BL), University of Ghana, Legon; Kwame Nkrumah University of Science and Technology Library (KNUSTL); and University of Cape Coast Library (UCCL). These libraries have well established IT facilities and provide IT services dedicated to teaching, learning and research. As noted above, the IT-based services that had been introduced into the university libraries in Ghana are CD-ROM, E-mail, Internet and the Interlibrary Loan and Document Delivery (ILL/DD). At the time of this study, however, the CD-ROM and the ILL/DD services had ceased functioning in the three university libraries. This study therefore focused on the Internet and email services, which were being provided in the libraries.

The population of the study comprised the students, the lecturers and the research fellows who had registered to use the IT services in the main libraries of the three public university libraries. The user population for each library was provided by the libraries as follows: BL, 1203; KNUSTL, 750; and UCCL, 600. Hence, the total population was of 2,553 users. An adequately representative sample size was then determined based on Alreck and Settle's (1985) proposal that a sample of ten per cent is usually adequately representative. Ten per cent of the population of 2,553, i.e., 255, was therefore drawn from the population as the study's sample. The total sample was then proportionately divided among the three university libraries, and systematic random sampling was used to select the users from within each library. Ideally, because the study population consisted of different categories of users (students, lecturers and research fellows), stratified sampling should have been adopted. However, stratified sampling was abandoned because the user population at the various libraries was highly unevenly distributed among the three categories of users. Table 1 shows the population and sample size of the users of the IT services.

Table 1: Population and Sample Sizes of Users of IT Services in the Universities Libraries

Copies of questionnaires were administered to the 255 sampled users of IT services in the three university libraries, out of which 240 copies were completed and returned representing a response rate of 94%. Tables 2 and 3 summarise the academic status and faculty of the respondents.

Table 2: Response Rate by Status

Table 3: Response Rate by Faculty

Apart from the questionnaire survey, both the professional librarian and the library assistant in charge of the IT services in each of the libraries were interviewed to gain more insight and clarify some of the issues that emerged from the information provided by the respondents. The Statistical Package for Social Science (SPSS) was used to analyse the questionnaire responses.

Results

Use of IT Services

Whittaker (1993) has noted that if a library's services are well communicated, then, they are likely to be well used. In turn, if a library's services are well used, it is a fairly certain indication also that they are meeting the needs of its users. Accordingly, one of the main objectives of this study was to find out how often the IT services provided by the three university libraries were being used. Respondents were asked to indicate how often they used the IT services. Two hundred and forty (240) users from all the three university libraries were served with the questionnaire. Seven users (3%) did not respond. Table 4 summarises their responses.

Table 4: Frequency of Use of the IT Services

Table 4 shows that the majority and almost half (49%) of the respondents used the IT services only once in a while, whereas 75 (31%) and 41 (17%) of the respondents used the services often and very often respectively. What is evident from the data is that, generally, the IT services provided in the three university libraries were not being used often by the respondents. A large number of them used the IT services only once in a while.

Use of Internet Services

The response in relation to Internet use revealed an overwhelmingly high 228 (95%) level of use. Respondents from the Social Sciences and the Sciences used the Internet service more than those from the Humanities. A possible reason for this was suggested by Wiberley and Jones (2000) that the humanists often use primary materials and obscure

sources that are unlikely to be digitized. They may therefore not use the Internet as often as the social and the natural scientists. This notwithstanding, the university libraries should come up with strategies and programmes that will encourage the humanists' greater use of the Internet services. The humanists could, for instance, be introduced and provided with the necessary skills to participate in discipline-based scholarly discussion groups like the Electronic Bulletin Boards and online databases that address their information needs.

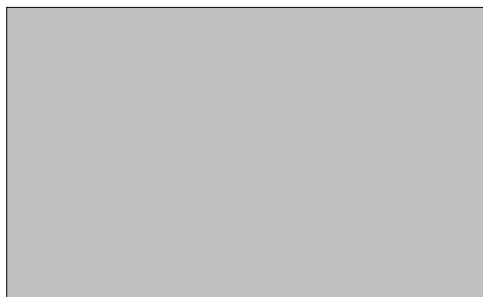
Use of the E-mail Services

The responses obtained in respect of the use of e-mail indicated that 187 (78%) of the respondents used the e-mail services provided by their libraries. Regarding frequency of use, it was found that 47% (113) of the respondents used e-mail often, 28% (67) of them used it very often, whilst 25% (60) of them used it once in a while. In terms of the different categories of users, the largest percentage (80%) of the undergraduate respondents as against 74% of postgraduate respondents used the e-mail services in the libraries. The data also showed that 71% of the lecturers and 62% of the research fellows also used e-mail. These relative percentages might be accounted for by the ease with which the different categories of users are able to obtain affordable access to the Internet outside the libraries.

Use of Mailing Lists

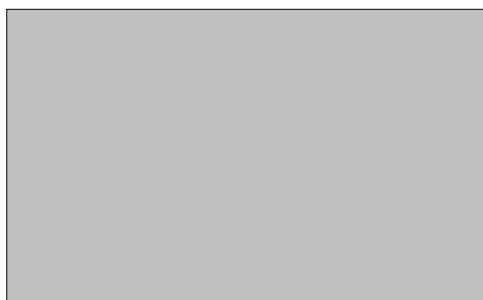
One of the survey questions sought to find out if the e-mail users subscribed to mailing lists. Table 5, which summarizes the responses, shows that only 18% (42) of the respondents subscribed to mailing lists. The high level of non-use of mailing list indicates that the university libraries need to implement strategies to promote the use of this facility by their users. The libraries also need to anticipate the future needs of users as new services evolve. In this regard, compilations of the various bulletin boards and mailing lists in the different disciplines could be prepared by the libraries and sent to users. Seminars could also be organized to show users how they could use and benefit from mailing lists, bulletin boards, and other Internet-based facilities.

Table 5: Use of Mailing Lists



Similarly, the responses in Table 6 show that a relatively low percentage (28%) of the respondents subscribed to bulletin boards. Although the response shows a high level of non-use for both mailing list and bulletin boards, it must be noted that more respondents subscribed to bulletin boards than mailing lists. The low level of subscription to mailing lists and bulletin boards, taken along with the high level of use of e-mail reported earlier, seems to indicate that most of the users have not yet caught on to using e-mail to access mailing lists and bulletin boards, although they might be aware of such facilities. Discipline-based discussion groups are very useful for teaching, research and learning, and the university libraries need to promote awareness and knowledge among users of the value of these facilities. The high level of use of e-mail by lecturers, postgraduates and research fellows is a good indication of the potential use of such facilities by these categories of users, if the facilities are effectively promoted by the libraries.

Table 6: Use of Bulletin Boards



Main Purposes for Using the IT Services

The survey sought to find out the main purposes for which IT services were used in the libraries. The analysis revealed that respondents used the IT services mainly for sending and receiving information (54% of the respondents), for literature search

(35%), and for communicating with colleagues in the same area of specialization (11%). This presents communication as the major purpose for respondents' use of IT services.

Use of IT Services for Sending and Receiving Information

All the four categories of respondents (lecturers, research fellows, postgraduates and undergraduates) used the IT services substantially for sending and receiving information. Eighty-two per cent of the lecturers, 80% of the undergraduates, and 72% of the postgraduate students used the IT service for sending and receiving information. Comparatively, only 66% of the Research Fellows used the library IT services for sending and receiving information. Also, comparatively more respondents from the science faculties (81%) than from the social studies (78%) and humanities (64%) faculties used the IT services for sending and receiving information.

Use of IT Services for Communicating with Colleagues

Communicating with colleagues in the same subject area of specialization enhances collaboration, sharing of ideas and research findings, thus keeping academics and researchers in touch with current developments. Such communication can also lead researchers to other useful information resources. Data collected in the study show, however, that apart from the lecturers who had the highest percentage of usage (61%), the other users, including postgraduates (26%) and undergraduates (33%) did not use the IT services much to communicate with colleagues in the same field. Research fellows, most surprisingly, registered the lowest percentage (11%). These findings are in consonance with the earlier findings that few of the respondents subscribed to mailing lists and discussion groups, and that research fellows probably had access to the Internet other than through the IT services in the university libraries. The data also indicate that 38% of respondents from the humanities used the services, whilst 35% of the respondents from the social studies and 25% of those from the science faculties used the IT services to communicate with colleagues in the same field.

Use of IT Services for Literature Search

The use of the IT services for literature search by the different user categories showed that high percentages of research fellows (89%), lecturers (82%) and postgraduate students (74%) used the IT services for that purpose, compared to only 49% of the undergraduates. This finding agrees with the expectation that research fellows, lecturers and postgraduates, being more involved in research-oriented academic work, should also use the services for literature searches more than the undergraduates. In terms of faculty, the highest proportion of respondents who used IT services for literature search belonged to the Social Studies faculty (64%), followed closely by respondents from the Humanities faculty (62%), and then by respondents from the Science faculty (56%). The lowest proportion for respondents from the Science faculty is surprising in view of the earlier reported finding that the respondents from the Science faculty used the IT services more often than those from the Social Studies and the Humanities. It is also very surprising because, out of the nineteen online databases provided by the Consortium of Academic and Research Libraries in Ghana (CALIGH), there are seven science-oriented online databases, in addition to eight other databases which cover all subjects, including science. This means that out of the nineteen databases, fifteen provide science-oriented information that could satisfy to some extent the information needs of users from the Science faculty. The issue then is why respondents from that faculty were not using the IT services to search the databases as much as the humanists and social scientists. Could it be that they had access to Internet facilities elsewhere, or lacked the skills for effective literature search, or that the available materials do not satisfy their information needs? It is important for the University Libraries to investigate the reasons respondents from the Science faculty do not use the IT services for literature search as much as expected.

Self versus Mediated Literature Searches

The study sought to find out whether or not users conducted searches for electronic information themselves. The majority of the respondents, i.e. 182

(76%), conducted their own searches, whilst the remainder depended mostly on library staff to do the search on their behalf. A follow up interview with the staff indicated that mediated searches were conducted for users (mostly undergraduates) who were not conversant with searching strategies. The staff further explained that only postgraduate users were trained to use the IT services, and other users were either guided to conduct their own searches or had their searches conducted for them. Although mediated search goes a long way to help such users, it is not always the best. Tedd (1993) advises that if mediated search is being undertaken, it is a good idea, if possible, for the original enquirer to be present during the search, so that additional information can be obtained when necessary. The findings signpost the need for the university libraries to provide training for all categories of the users of their IT services in order to empower them to conduct searches on their own.

Problems Affecting the Effective Use of the IT Services

Respondents were asked to state the problems that prevent them from making effective use of the IT services in the libraries. Almost all the respondents, i.e. 98%, stated that the IT services laboratories for users in the libraries were too small; that the available computers were inadequate to serve the population of users; and that users sometimes had to queue. The need for training was indicated by 57% of the respondents, whilst 25% of them indicated difficulty in assessing some of the online databases. The university libraries should note and find solutions to these challenges in order to encourage the patronage of the IT services provided in the libraries.

Discussion

The study revealed that students, lecturers and research fellows used the IT services provided by the public university libraries, although most of them did so only once in a while. The users applied the services mainly for sending and receiving information, for literature search, and for communicating with colleagues in that order.

Most of the users conducted search for information themselves, with only a few depending on the library staff for mediated searches. Users'

ability to do independent searches means they have been able to learn and use the search strategies, and are therefore capable of applying them without support. Regarding the few respondents who rely on the staff for mediated searches, the university libraries should come up with programmes that will address their problems. Periodic training programmes to assist users acquire skills for performing searches on their own are desirable. This will help users develop more confidence in the use of the IT services, which, in turn, would promote use of the services.

The study observed high levels of E-mail use for sending and receiving information but comparatively lower levels of use for accessing mailing lists and discussion groups. The high level of the use of E-mail for sending and receiving information by the respondents supports the findings of Milne (1999), Schauder and Chu (1994), and Liebscher, Abels and Denman (1997), who found that among the academics who use the national or international computer networks, over ninety per cent use them for E-mail. The observed moderate to high uses of the IT services in the libraries for information searching by the respondents is also consistent with Markwei's (2001) findings that academics in Ghana have started using the Internet intensely.

The use of Mailing List and Bulletin Boards has however not caught up well with the respondents. This finding corroborates Applebee, et al (2000) who also found a low use of Electronic Discussion groups among Australian academics. Collaboration and exchanges of ideas and knowledge by lecturers, researchers and students with their counterparts elsewhere in the global village are desirable for productive and globally visible academic and research work. Accordingly, the university libraries should implement strategies to encourage their users to exploit internet facilities such as mailing lists, bulletin boards, discussion groups and blogs to interact and exchange ideas with other scholars.

This study found that the majority of the respondents used the IT services in the libraries for sending and receiving information, but only minimally for communicating with colleagues in their areas of specialization. These two findings suggest that personal or social, and not research-oriented, communication was the major purpose for the

respondents' use of the IT services. This conclusion is in consonance with Diaba's (2001) finding that a great deal of E-mail communication is done more for social and family matters and networking with colleagues than for serious academic-related matters.

Conclusion and Recommendations

The study revealed that, overall, the IT services provided in the three university libraries are not used often by the respondents, with only about half of the respondents reporting doing so. Although e-mail was used very frequently, such uses of email were mainly for personal communications, and less for research-oriented communication and collaboration, such as participating in bulletin boards or mailing lists, communicating with colleagues in same field, or literature search. The study also revealed that respondents from the science faculty were not using the IT services to access the databases subscribed to by the libraries as much as one would have expected. Furthermore, the study found that the IT laboratories provided by the libraries are very small relative to the number of potential users, and that the numbers of computers in the laboratories are also not enough to facilitate the frequent use of the IT services.

These findings highlight the need for more or larger laboratories to facilitate user access to the services, as well as user education programmes by the libraries to promote the use of Internet services for research-oriented purposes. Accordingly, the study makes the following recommendations:

- (i) The university libraries should expand their computer laboratories in order to increase user access to and use of their IT services.
- (ii) The libraries should institute periodic programmes to train different categories of their users to help them acquire skills to conduct effective online information searches within and outside the libraries.
- (iii) The libraries should introduce users to scholarly discussion groups and electronic bulletin boards in the various disciplines through appropriate training programmes.
- (iv) The libraries should compile and publicise suitable Internet sites on topical issues in anticipation of

user needs for research, learning and teaching.

- (v) The libraries should liaise with the various faculties to find out ongoing research activities, so that relevant literature will be prepared in anticipation of research needs.

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