



ISSN: 0975-833X

RESEARCH ARTICLE

ASSESSING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) RESOURCES IN
POLYTECHNIC LIBRARIES IN GHANA

^{1,*}Christopher Mfum Owusu-Ansah and ²Kwabena Osei Kuffour Adjei

¹University of Education, Winneba, Kumasi, Ghana

²Kumasi Polytechnic, Kumasi Ghana

ARTICLE INFO

Article History:

Received 02nd October, 2014
Received in revised form
15th November, 2014
Accepted 15th December, 2014
Published online 23rd January, 2015

Key words:

Polytechnic,
ICT,
Ghana,
Librarians,
Academic Libraries.

ABSTRACT

The main purpose of the study was to determine the status of information and communication technology (ICT) in academic libraries in polytechnics in Ghana. The study utilized an e-mail survey of ten (10) polytechnic librarians with the use of structured questionnaires of open and close ended questions. The respondents were purposively selected. The findings were analyzed using SPSS software and presented by use of descriptive statistics. The study found that majority of the respondents does not have adequate ICT facilities in the polytechnic libraries, and therefore cannot support modern academic library services. The findings indicate that ICT-based services that enhance the delivery of library services are generally inadequate in these libraries which are expected to offer value-added services to users. Based on the research findings, the study suggests among others that polytechnics should acquire adequate ICT facilities in their libraries to provide modern academic library services to their users. Polytechnic libraries must position themselves strategically in terms of ICT to be able to sustain their services to help achieve their mission.

Copyright © 2015 Christopher Mfum Owusu-Ansah and Kwabena Osei Kuffour Adjei. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Universities and polytechnics in Ghana have embarked on computerization from as far back as the mid 1980s and some of them have been successful in providing services like the use of CD-ROM, internet connectivity and access to databases of full text journal articles and abstracts (Asamoah-Hassan, 2003). Over the past few years, there has been an influx of computer applications for library and information work in Ghana. This has brought tremendous changes in the role of libraries. Libraries have taken advantage of the new information technologies to provide a wide range of services and products, which were not possible, a few decades ago. Today, CDROMs and online search services have revolutionized the provision of services to users. There is no doubt that without information technology, libraries would have never been able to satisfy the changing needs of users in an information era of today (Singh and Joshi, 2013). Academic libraries in polytechnics, like in all other higher educational institutions are expected to support their parent institutions in the achievement of their teaching, learning and research goals. However, the role of the academic library has evolved quickly in the age of the information superhighway.

Libraries in polytechnics also have new demands placed on them by their users in terms of providing information on demand irrespective of location or kind of information. Funding institutions like the polytechnic administration are asking what polytechnic libraries are doing to be worthy of their budgetary allocation except for the obvious reason of accreditation requirement. Other information providers like the internet and bookshops are also asking traditional library clientele why they want to spend their precious time reading old books. These competitors are obviously strengthening the library if the libraries are to accept the opportunity been presented them, an opportunity whose answer lies in library automation and computerization of services.

Polytechnics play crucial roles in the manpower development needs of countries where they are located. The rationale of polytechnic education was to produce the critical core of middle-level manpower for their countries. Given the nature of technological advancement in the world, polytechnics are expected to emphasize the acquisition of hands-on practical and entrepreneurial skills to train career-focused technical workforce required to meet the needs of the labour market. For the achievement of these noble goals, many support services are required. Notable among these is the academic library, which provides important information support being the heart of the academic agenda of every higher educational institution. However, due to economic challenges in developing countries,

*Corresponding author: Christopher Mfum Owusu-Ansah
University of Education, Winneba, Kumasi, Ghana

it has been the norm that governments in developing countries devote much more financial support to universities to the detriment of polytechnics, being popularly considered “second-class universities”. This situation has consistently led to a situation where polytechnics have been unable to provide needed resources like ICT which academic libraries the world over have taken advantage of to computerize and automate much needed services for the academic community. Funding and support for polytechnic libraries has been a far cry from the level attained in Ghanaian public universities due to the sparse resources available to their parent institutions. This situation has consequently discouraged academic libraries in polytechnics from venturing into library automation and computerized services. In exceptional cases where polytechnic libraries have implemented computerization, the services may be mainly donor-driven and the over reliance on donor support is making sustainability of their service difficult (Dadzie, 2005). Polytechnics have however enjoyed tertiary status which requires that academic library provision must be professional and in tandem with the needs of its community of users, who obviously require ICT facilities especially in their libraries to ensure unhindered access to quality information. This study therefore intends to investigate into the state of ICT facilities and resources in polytechnic libraries in Ghana in the light of the challenges polytechnics are confronted with.

The present study however recognizes the dearth of studies into computer and ICT applications in polytechnic libraries of developing countries of which the study intends to draw attention to the growing need for policy makers and polytechnic administrators to consider making sustained investments. There is an even more impetus to this call in the face of policy makers considering transforming polytechnics in Ghana to the level of technical universities. It is the hope of this research that the findings would enable academic library managers and polytechnic administrators understand the need to make strong cases for ICT investment in polytechnic libraries to ensure that there would be strong information infrastructure to realize the teaching, learning and research goals of the parent institutions. It is also instructive to say that due to the ubiquity of the Internet, academic libraries’ visibility has the potential to propel higher learning institutions to attract global attention and networking support as they have their online catalogues and databases networked to the international pool of information networks, a situation which is in itself opportunities for consortia building and institutional networking. This study is expected to provide a basis for comprehensive information on information and communication technology (ICT) facilities and availability in Ghanaian Polytechnic Libraries. The study will hopefully, contribute to the existing gaps in the literature concerning the adoption and implementation of ICT in the operations of academic libraries in Polytechnics in achieving their statutory functions.

Purpose of the Study

The purpose of the study is to ascertain the availability and level of use of ICT in polytechnic libraries in Ghana. The study highlights the advantages or merits associated with ICTs on Polytechnic libraries in Ghana.

Objectives of the Study

The specific objectives of the study are to:

1. Ascertain the level of computerization/automation of Polytechnic Libraries.
2. Determine how skillful and knowledgeable the staff are in the use of ICT resources.
3. Assess the usefulness of ICT resources in Polytechnic libraries.
4. Determine the challenges associated with the application of ICT in Polytechnic libraries.
5. Recommend measures to improve ICT application in polytechnic libraries.

Literature review

Information and Communication Technology (ICT) in libraries and education

Many academic libraries in Africa are still grappling with the implementation of ICT in spite of its obvious advantages. In a study to investigate the extent of adoption of information and communication technology (ICT) in university libraries in Nigeria, the findings showed that six university libraries are fully computerized, nine are about to be computerized; while seven of the surveyed libraries have installed local area networks, five have online public access catalogue and only four libraries provide internet service. The study identified major obstacles confronting the effective adoption of ICT in university libraries as inadequate funds and the poor state of electricity in Nigeria (Ani, Esin and Edem, 2005). In spite of these known challenges, often the inability of libraries to implement ICT has been an issue of planning and policy-making. In a similar study, Anie and Achugbue (2009), opine that most Nigerian Universities have not developed and adopted library ICT policies, and in some cases where the policies have been adopted and implemented, the libraries are faced with various constraints. Sarka De (2005) shares this view and suggests that libraries that have not developed and implemented ICT are challenged in terms of slow growth of technology and consequently lessening of support for economic and social development. Similarly, the Association of College and Research Libraries (ACRL) Standards for Libraries in Higher Education (2011) identifies the need for the library to adopt effective use of technology in the discovery of all formats of information and organization of knowledge.

Academic libraries in resource-constraint environments also have the advantage of generating income from ICT related services and resources. In a study at the University of Botswana, Boadi and Letsolo (2004) asserts that financial challenges faced by academic libraries as a result of the library’s dwindling funding often has negative implications on the quality of services provided by the university libraries and adversely affect the quality of teaching and research in their parent institutions. To combat this challenge, he suggests among others that, academic libraries could generate income from Information Technology related services through consultancy programmes. The role of modern ICT tools in the education system is also one of the most discussed in the

literature. One study focused on laptop use at the University of Minnesota (Cutshall, Changchit and Elwood, 2006). The authors opine that although many higher education institutions view the use of laptop computers as advantageous, it is important to consider the logistical and technological factors critical to a successful laptop before implementing the programme. Among the students, both those who support and those who do not support pointed to the following factors as critical for using technology: availability of a wireless network in place; sufficient power outlets available in class; having access to printers; having onsite maintenance; having a breakdown of all associated costs.

Academic librarians are increasingly utilising ICT tools for knowledge-sharing in preference to the traditional ones. However, ignorance of existing ICT knowledge-sharing platforms, limited ICT skills and an unhealthy technology environment remain major challenges (Ngozi I. Anasi, *et al.*, 2014). The authors conclude their study that in the light of new technologies, academic librarians should take advantage of continuing professional development and skill acquisition programmes to enable them function effectively in the ICT era. Yuen, Law and Wong (2003) discussed ICT implementation for teaching and learning. Their study showed that the strategy adopted by a school in instituting such change and the resulting variation of pedagogical practices using ICT is strongly dependent on the school leaders' vision and understanding of the role and impact of ICT in the curriculum, their goals and objectives for ICT integration, as well as the history, culture and background of the school and its general vision and mission. This finding is in tandem with that of Campbell (2007) who identified communication, culture and purpose as three success factors critical to the implementation of any ICT endeavour in an institution.

History of polytechnic education in Ghana

The government white paper on the reforms to the tertiary education system in 1991 provided the basis for innovations in tertiary education in Ghana. One of the objectives of the reforms was to introduce programmes and courses for advanced technician training in appropriate tertiary institutions. Consequently, polytechnic institutions were elevated to tertiary status, to offer practical technician training programmes to develop middle-level manpower leading to the award of Higher National Diplomas. Following the submission of the University Rationalization Committee's report, the government issued a white paper in 1991 on the reforms to the Tertiary Education System. The white paper formed the basis of the recognition of the tertiary education system. Polytechnics were upgraded to tertiary status in 1993. Polytechnic institutions were created to provide career-focused education and skills training to students. The objectives of Polytechnic institutions as stated in PNDC Law 321 are;

- To provide full time courses in the field of manufacturing, commerce, science, technology, applied sciences; applied arts and such other areas as may be determined by the authority responsible for higher education.
- To encourage study in technical subjects at tertiary level and

- Provide opportunity for development, research and publication of research findings.

These objectives were reinforced by the white paper on the report of the Education Reform Review Committee, 2004 which indicates that, "Government will continue to equip the polytechnics to make them offer tertiary education in their own right, to emphasis practical skills that are needed to run the productive economy and build a nation". Government further underscores the importance of hands-on experience and undertakes to resource polytechnics to enable them offer degree programmes.

Since Ghana has ten regions, and the polytechnics were intended to meet the needs of each regional constituency there was the need to establish polytechnics in every region which did not have any. The government white paper of 1991 also recommended the 'upgrading of the courses offered by the polytechnics to tertiary level, in addition to an expansion in the number of institutions which would be undertaken on a regional basis. It was expected that this notional upgrading would in itself ensure that the country's need for higher-level technician training and practical research would be adequately met. However little attention was paid to the amount of polytechnic education which the country could afford and how it would be distributed, nor the choices which would have to be made given the resources likely to be available between political and geographical concerns, existing provisions and its quality, social demand and how these competing concerns might be prioritized (Girdwood, 1999).

MATERIALS AND METHODS

The study utilized the survey method. This method was considered appropriate for the study due to the dispersed nature of the study population which could be located in the all ten regions of Ghana. The respondents were the heads of the libraries of the ten polytechnics in Ghana who were purposively selected due to the nature of their jobs and their unique position to be aware of ICT and its related developments in their libraries. All the polytechnics in Ghana were selected for the study. They are as follows:

Accra Polytechnic, Greater Accra Region; Bolgatanga Polytechnic, Upper West Region; Cape Coast Polytechnic, Central Region; Ho Polytechnic, Volta Region; Koforidua Polytechnic, Eastern Region; Kumasi Polytechnic, Ashanti Region; Sunyani Polytechnic, Brong Ahafo Region; Takoradi Polytechnic, Western Region; Tamale Polytechnic, Northern Region; and Wa Polytechnic, Upper West Region.

The researchers made use of electronic mail to administer the questionnaire to the respondents. All ten questionnaires sent to the respondents were retrieved. Data was collected through the use of questionnaires. The questionnaires were analysed using the Statistical Package for Social Science (SPSS). The questionnaires were coded into this software and frequencies generated – the frequency tables that were generated thus expressed the opinions or views of respondents on each question. The findings were presented by use of descriptive statistics.

Presentation of findings

Background of respondents

Table 1 above presents a summary of the demographic distribution of the participants used for the study. From the table it could be observed that majority of the participants were male (80%) and at the same time, majority of the participants were Assistant Librarians (50%). 30% of the participants were Acting Librarians and 20% were Librarians. Analysis of the responses regarding their number of years worked indicating their occupational experience, showed that exactly half of the participants (50%) have been working between 1 – 5 years, whereas 20% have also been working between 6 – 10 years. 30% of the rest of the participants have been working either between 11-20 years or more than 20 years. (38.6%) were aged between 21 – 30 years whereas 26.9% were aged between 31 – 40 years.

Table 1. Demographics of Respondents

Variable Name	Category	Frequency	Percentage (%)
Rank	Assistant Librarian	5	50
	Acting Librarian	3	30
	Librarian	2	20
No. of Working Years	1-5	5	50
	6-10	2	20
	11-20	3	30
Gender	Male	8	80
	Female	2	20

Source: Survey Data, 2014

Awareness of ICT resources

To establish a basis for the first objective of the study, it was important to find out about the awareness of ICT resources among polytechnic librarians who participated in the study. From Table 2 above, the findings showed that all the respondents (100%) are overwhelmingly aware of ICT in the service offering of academic libraries where they ply their trade. This finding is perhaps not surprising as many libraries in Ghana have recently automated and have access to electronic resources.

Table 2. Awareness of ICT by academic librarians

Category	Frequency	Percentage (%)
No	0	0
Yes	10	100
Total	10	100

Source: Survey Data, 2014

Level of ICT Skills

This question was intended to elicit the level of skills possessed by librarians in the polytechnics. Table 3 indicates the rate of ICT skills of the participants (n=10) under study. Eliciting from the findings, exactly half of the participants (50%) report high ICT skills. This was followed by 30% of the participants, who declared that they have moderate ICT skills. Precisely, 20% said that they have very high ICT skills. This

shows that more than half of the participants (70%) have very high ICT skills. The findings of the study suggests a positive future for the profession as most (70%) of the respondents report “high” to “very high” skills rating. This shows that given the right attitude, librarians in polytechnics can champion ICT deployment in their libraries.

Table 3. ICT skill rating

Category	Frequency	Percentage (%)
Very High	2	20
High	5	50
Moderate	3	30
Total	10	100

Source: Survey Data, 2014

Availability of ICT

Table 4 shows the availability or unavailability of ICT facilities in the surveyed libraries. It is clear from the findings that 9 participants, representing 90% of the participant libraries report inadequate ICT facilities leaving only 1 participant library reporting adequate ICT facilities available to them. This is rather a gloomy picture of the libraries concerned, that all but one of the libraries surveyed believe they have inadequate ICT facilities.

Table 4. Availability of adequate ICT facilities

Category	Frequency	Percentage (%)
No	9	90
Yes	1	10
Total	10	100

Source: Survey Data, 2014

Availability of ICT technologies

From Table 5, the availability and access of technologies in the libraries are shown. The results reveal that exactly a quarter of the respondents had e-mail services and another quarter had Internet facilities. Very few (4.2%) had Telnet and Library websites. It is refreshing to note that half of the respondents have either one of e-mail or Internet facilities which are basic communication technologies for information sharing in the library and the institution

Table 5. Availability of technologies in library

Access to technologies that are available in the library	Responses		Percentage of Cases (%)
	N	Percentage (%)	
Email	6	25	75
Internet	6	25	75
Intranet	2	8.3	25
Library Software	4	16.7	50
Internal OPAC	2	8.3	25
Library website	1	4.2	12.5
Telnet	1	4.2	12.5
Web OPAC	2	8.3	25
Total	24	100	300

Source: Survey Data, 2014

Availability of hardware technologies

Table 6 shows the availability of hardware devices in the Polytechnic libraries. The findings indicate that majority of the

respondents (14.3%) had printers and Personal Computers. Very few unsurprisingly, had CCTV cameras (1.6%) and CD/DVD players (1.6%).

Table 6. Available hardware technologies

Available hardware in library	Responses		Percentage of Cases (%)
	N	Percentage (%)	
PCs	9	14.3	100
Laptops	3	4.8	33.3
CCTV camera	1	1.6	11.1
CD/DVD players	1	1.6	11.1
Digital camera	2	3.2	22.2
Fax machines	2	3.2	22.2
Multimedia projectors	3	4.8	33.3
Photocopiers	8	12.7	88.9
Printers	9	14.3	100.0
Scanners (digital)	3	4.8	33.3
Television	1	1.6	11.1
UPS (power supply)	6	9.5	66.7
USB pen drives	7	11.1	77.8
VCR/VCP	1	1.6	11.1
Wireless LAN	5	7.9	55.6
LCD/Overhead projectors	2	3.2	22.2
Total	63	100	700

Source: Survey Data, 2014

Information access technologies

Table 7 reports the availability of information access technologies in the libraries. The study shows that that Email services (25%) and Internet (25%) are the most available information access technologies in the libraries. Coming quite a distance behind are Library websites (4%) and Telnet (4%) as these seem unpopular with the libraries. This confirms the findings of Table 4 which also points to E-mail and Internet Services as the most accessible services. This is perhaps good news but it is important the libraries make these services available to users by the provision of computer terminals or Wi-Fi facilities or both, since these access technology services play important roles in academic library services by facilitating communication between and among librarians, lecturers and learners to achieve teaching and learning goals.

Table 7. Available information access technologies

Available information access technologies	Responses		Percentage of Cases (%)
	N	Percentages (%)	
Email	6	25.0	75
Internal OPAC	2	8.3	25
Internet	6	25	75
Intranet	2	8.3	25
Library software	4	16.7	50
Library website	1	4.2	12.5
Telnet	1	4.2	12
Web OPAC	2	8.3	25
Total	24	100	300

Source: Survey Data, 2014

Availability of Library software

Table 8 shows that, out of the 10 respondents, 4, representing 40% use a Library management system. Interestingly, another 40% indicate they do not use any Library management system. Table 9 indicates that, out of the 10 respondents, 4, representing 40% use KOHA Library Management System, while another indicated using Library Gold. Surprisingly, five

(5) respondents did not answer this questionnaire item, which is likely indicative of the fact that they do not use any type of library management systems to support their functions. The finding suggest that KOHA as the most popular Open Source Software for many of the respondents.

Table 8. Use of Library Management Systems

Category	Frequency	Percentage (%)
No	4	40
Yes	4	40
Missing	2	20
Total	10	100

Source: Survey Data, 2014

Table 9. Types of library management software

Category	Frequency	Percentage (%)
Koha	4	40
Library Gold	1	10
Missing	5	50
Total	10	100

Source: Survey Data, 2014

Satisfaction with electronic resources

Table 10. Level of sufficiency of E-resources

Level of sufficiency of E-resources	Responses		Percentage of Cases (%)
	N	Percentage (%)	
Audio-visuals	1	8.3	20
CD-ROMs	3	25	60
E-books	3	25	60
E-journals	2	16	40
Online databases	2	16	40
Online theses repository	1	8.3	20
Total	12	100	240

Source: Survey Data, 2014

Table 10 indicates that CD-ROMS and E-Books had a tie (25%) level of sufficiency among the electronic resources in the participating libraries. There was also a tie (16%) for electronic journals and online databases. Audio-visual resources and online theses repository also tie at 8.3%, this forming the minority of the resources available. Electronic resources are one of the most heavily used library resources. However, in a developing country like Ghana, books are still preferred by many users. Online databases, for instance provide the most current research materials that are often not available through search engines. As such, the expectation is that such resources are made available to users through libraries.

RESULTS AND DISCUSSION

The results of the study show that most of the participating librarians were relatively young and are therefore able to adopt technology. It is important that such a workforce yearn and agitate for ICT resources as it is easier for a relatively younger librarian to work with technology and achieve goals with them. The adoption of computers in libraries requires the staff to acquire relevant computer skills which can enable them to manipulate the machines (Adomi and Anie, 2006). This is very important because librarians who do not possess relevant ICT skills may not be motivated to acquire ICT resources for their

library functions. In relation to this, the study also showed that a considerable number of the respondents have high ICT skills and are aware of available ICT infrastructure respectively. This development can partly be attributed to the activities of professional bodies like the Ghana Library Association (GLA), the Consortium of Academic and Research Libraries in Ghana (CARLIGH) and other organizations that have imparted ICT skills through training programmes for librarians in Ghana. However, this awareness must translate to actual desire to adopt and use these technologies. Otherwise the library user is most likely to lose the advantages of ICT related services which are very important to solving their information challenges. Again, in determining the usefulness of essential ICT resources, the findings indicate that ICT-based services that enhance the delivery of library services are generally inadequate in these libraries which are expected to offer value-added services to users.

These challenges have been confirmed in the literature (Adzobu, 2014). It is clear from the study that libraries use computers primarily to perform housekeeping operations as library automation has been recognised for its ability in delivering improved services (Amekuede, 2005). Thus, many of these libraries recognise the need to automate and where funding is a challenge, some have implemented open source systems which has little capital requirements. Again, due to dwindling funding for library development, a situation made worse with the unavailability of “virile local book publishing outfits and poor resource sharing strategies” (Olu Adeyoyin, 2006). The application of ICT has therefore been advocated to ensure the survival and sustainability of fledging academic libraries in Ghana particularly in terms of its power to promote the vision and mission of Polytechnics. The study found that majority of the respondents does not have adequate ICT facilities in the polytechnic libraries, and therefore cannot support modern academic library services in terms of the provision of electronic materials. There is a need for management of the Polytechnics to consider honouring the budgets allocated to the libraries to improve the ICT infrastructure of their libraries. This is a step beyond merely providing a budget but not releasing funds, a situation typical of many African institutions.

The findings also suggest that many libraries involved in the study overwhelmingly invest in PCs and photocopiers to the detriment of other important hardware devices. The move away from library-centered service to user-centered service requires that laptop computers and wireless LANs are available for users. There is therefore a need for these libraries to decentralize their budgets to acquire other equally important hardware devices that would go a long way in supplementing available service points to improve user services in the libraries. In relation to the application of library management systems by the libraries, the study found that academic libraries have seen the importance of library automation in improving their services to their user community. However, often due to financial challenges, they are unable to embark on automation. Open source systems have been identified by researchers and practitioners as a panacea to the digital challenge in African institutions (Egunjobi and Awoyemi, 2012). Interestingly, some of the libraries have seen the need

to resort to open source systems in computerizing their services. This is in line with Egunjobi and Awoyemi (2012) who refer to the strengths of KOHA and points out the following advantages to libraries using it or for those considering it: it is free; it is user friendly; possibility of logging in at different times and places; and a user community. Libraries in financial challenges can therefore resort to Open Source Systems to automate their functions to improve and enhance their services to their users.

In terms of electronic resources provision, the results suggest that CD-ROMS and E-books are more popular; therefore it must be sustained and improved by marketing them to all users’ particularly graduate students and teaching staff. Online theses repositories present lots of researching opportunities to such users as they are able to access previous research works without coming to the library. Their low popularity may suggest inadequate marketing. It is therefore important that librarians highlight the importance of the other resources through their marketing campaigns. Furthermore, the low availability of online journals and databases is a cause for concern as these resources provide current research for researchers. It could be inferred that the libraries are not subscribed to these databases. It is therefore important to source for funding to subscribe to these resources which are very relevant for the research agenda of their institutions. It is also important for library staff to point out pertinent issues regarding the use of some of these resources in terms of fair use and plagiarism through Information Literacy Instruction programmes.

Conclusion and recommendations

The purpose of the study was to ascertain the level of use of ICT in polytechnic libraries in Ghana. The research work highlights the advantages or merits associated with ICTs on Polytechnic libraries in Ghana. The study has been able to confirm that the level of computerization/automation of Polytechnic Libraries is below expectation. However, these libraries have skillful and knowledgeable staff who are ready to implement ICT in providing effective and efficient services. Among others, the challenges associated with the implementation and applications of ICT in Polytechnic libraries include a lack of adequate ICT facilities, poor funding for ICT resources and lack of planning for ICT services. On the account of the findings of the study, the following suggestions are proffered to improve ICT deployment in polytechnic libraries in Ghana:

1. The Polytechnics should acquire ICT facilities in their libraries to provide modern academic library services to their users.
2. The librarians should make all efforts by appealing to their management to acquire more ICT facilities for their libraries apart from PCs and photocopiers so as to help in achieving library automation.
3. Library staff should be sent for conferences, seminars and training workshops to upgrade their skills and knowledge on how to use ICT facilities as well as the management of these facilities.

4. Library budget dedicated to ICT facilities should be shared equally in the acquisition of ICT equipment.
5. Librarians should be able to apportion a percentage of library budgets to procure ICT facilities with at least 40% of the budget invested in ICT.
6. Libraries and librarians should put in more efforts to acquire Library Management Software for the management of the library operations. In cases where funding challenges pose challenges, Open Source Systems should be implemented as they offer equally important functionalities like proprietary ones. In addition, the Polytechnic libraries could join consortia like the Consortium of Academic and research Libraries in Ghana.
7. Finally, it is proposed that Polytechnic libraries establish ICT units within their libraries as it persist within many of the universities in Ghana to champion ICT services in library services provision.

REFERENCES

- Adomi, E. E. and Anie, S. O. 2006. An assessment of computer literacy skills of professionals in Nigerian university libraries. *Library Hi Tech News*, 23(2), 10–14. Retrieved from <http://www.emeraldinsight.com/journals.htm?articleid=1545406&show=abstract>
- Adzobu, Y. A. N. 2014. Building digital collections in a public university library in Ghana: priority-setting and user needs assessment. *Collection Building*, 33(2), 38–45. doi:10.1108/CB-10-2013-0040
- Amekuedee, J. 2005. An evaluation of library automation in some Ghanaian university libraries. *The Electronic Library*, 23(4), 442–452. doi:10.1108/02640470510611508
- Ani, O. E., Esin, J. E. and Edem, N. 2005. Adoption of information and communication technology (ICT) in academic libraries. *The Electronic Library*, 23(6), 701–708. doi:10.1108/02640470510635782
- Anie, S. O. and Achugbue, E. I. 2009. Library information and communication technology in Nigerian universities. *Library Hi Tech News*, 26(7), 8–10. doi:10.1108/07419050911000490
- Asamoah-Hasan, H. 2003. Information: the oil in the wheel of national development”, *Ghana Library Journal*, Vol. 15, pp. 1-14
- Boadi, B.Y. and Letsolo, P. 2004. Information needs and information seeking behavior of distance learners at the Institute of Extra-Mural Studies in Lesotho. *Information Development*, 20(3), 189-99
- Campbell, M. and Uys, P. 2007. Identifying success factors of ICT in developing a learning community. *Campus-Wide Information Systems*, 24(1), 17–26. doi:10.1108/10650740710726464
- Cutshall, R., Changchit, C. and Elwood, S. 2006. Campus Laptops: What Logistical and Technological Factors are Perceived Critical? *Educational Technology and Society*, 9 (3), 112-121.
- Dadzie, P. S. 2005. Electronic Resources: access and usage at Ashesi University College. *Campus-wide Information Systems*, 22 (5). Retrieved from <http://www.emeraldinsight.com> on 5th September, 2013.
- Egunjobi, R. a. and Awoyemi, R. a. 2012. Library automation with Koha. *Library Hi Tech News*, 29(3), 12–15. doi:10.1108/07419051211241868
- Girdwood, A. 1999. *Tertiary education policy in Ghana - an assessment: 1988-1998* (No. 20261) (pp. 1–84). The World Bank. Retrieved from <http://documents.worldbank.org/curated/en/1999/05/437232/tertiary-education-policy-ghana-assessment-1988-1998>
- Ngozi I. Anasi, S., J. Akpan, I. and Adedokun, T. 2014. Information and communication technologies and knowledge sharing among academic librarians in south-west Nigeria. *Library Review*, 63(4/5), 352–369. doi:10.1108/LR-10-2013-0124
- Olu Adeyoyin, S. 2006. ICT literacy among the staff of West African university libraries. *The Electronic Library*, 24(5), 694–705. doi:10.1108/02640470610707286.
- Sarka De, S. 2005. *ICT Policy*, available at: www.14donline.Net/June05Policy.Fully.Asp (accessed 24 February 2007).
- Singh, D. and Joshi, M. K. 2013. Information literacy competency of post graduate students at Haryana Agricultural University and impact of instruction initiatives. *Reference Services Review*, 41(3), 453–473. doi:10.1108/RSR-11-2012-0074
- Yuen, A.H.K., Nancy, L. and Wong, K.C. 2003. ICT implementation and school leadership Case studies of ICT integration in teaching and learning. *Journal of Educational Administration*, Vol. 41 No. 2, pp. 158-170
