PROCEEDINGS OF THE 2ND INTERNATIONAL
CONFERENCE OF THE CONSORTIUM
OF ACADEMIC AND RESEARCH LIBRARIES
IN GHANA (CARLIGH)

THEME:
TRANSITION FROM INFORMATION MANAGEMENT
TO KNOWLEDGE MANAGEMENT:
THE ROLE OF THE INFORMATION PROFESSIONAL

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TRANSITION FROM INFORMATION MANAGEMENT
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THE ROLE OF THE INFORMATION PROFESSIONAL

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WELCOME ADDRESS - CHAIRPERSON, CARLIGH MANAGEMENT COMMITTEE

Welcome to Ghana and to the 3rd CARLIGH International Conference, proudly hosted by CARLIGH. This year's agenda offers a wonderful opportunity to exchange ideas and experiences, hear the latest information about knowledge management and the role the information professionals in organizations. We are so excited for you to be part of the dialogue or conversation. As in the first conference, CARLIGH provided an excellent forum for exchanging information and discussion on a wide variety of interesting topics.

As part of this conference, we expect lots of learning and networking amongst participants. This year, the response to the conference's call for papers has been outstanding, and we expect that the attendance will be equally impressive. Many individuals and organizations contributed to the success of this conference. We would like to acknowledge the tremendous efforts of the………..

We welcome you to Accra, Ghana and CARLIGH and looking forward to spend wonderful time with you. It is our great honor and pleasure to accept the responsibilities and challenges of Conference. We hope that the conference will be stimulating, informative, enjoyable and fulfilling experience to all who attend it.
With Gratitude

Dr. Joel Sam
(Chairman, CARLIGH Management Committee)

KEYNOTE ADDRESS

THE INTERNET OF THINGS AND KNOWLEDGE MANAGEMENT
by
FA KATSRIKU, Ph.D
Department of Computer Science, University of Ghana, Legon.

Mr. Chairman, Special Guest of Honour, Invited Guests, Conference participants, respected ladies and gentlemen, I would like to thank the organizers of this conference for the invitation to deliver the keynote address. This is a topic that is of great importance in modern times as we shall see shortly and I commend the organizers for recognizing the importance of the subject of knowledge management and its relevance to our economy and development. For far too long we in the developing world have been observers in an ever-changing world, contributing very little to technological advances. And this is not because we do not produce knowledge in our societies. For our societies to survive to date implies that we do produce knowledge. The question is more of how we are using the knowledge we produce for advancement of our societies. Any advances made in any society, has been made on the basis of knowledge. The 21st century however is characterized by the fact that knowledge has a far more critical role to play than in previous centuries as such the need for us to find ways of leveraging this knowledge in a systematic way for our progress. Today, I would like to look at how the Internet of things is driving the 21st century.

The outline of the talk is as follows:
- I will briefly explain what is the Internet of Things (IoT)
- This naturally leads to the concept of Big Data
- I will draw the link between these two concepts and knowledge, explaining the
- Key Concepts of
    - Knowledge
    - Knowledge creation
    - Knowledge sharing and
    - Knowledge Management Systems
- I will then take a brief look at Some Issues
- And finally, the Way Forward

Advances in the fields of instrumentation, communications and computer science is ushering in a new era. This is the era of the Internet of Things, an era in which everything and anything is connected and interconnected. We enter into a new world in which every conceivable object is connected. Physical devices, are being embedded with sensors,

electronics, software and networking capability. Soon it will be animals and humans who will be embedded with sensors. In fact, animals are already being embedded with sensors for tracking and shepherding. This is bringing about a paradigm shift in the way we acquire information and ultimately knowledge.

Everyone here is aware of the Internet and what it enables. The Internet and in fact networks is what makes the IoT possible. IoT is built upon existing network communication infrastructure, enabling objects to be sensed and/or controlled remotely. Our physical world can therefore be more easily integrated into cyber world. It brings to actualization the cyber-physical world. The integration of the physical world with computer-based systems will result in improved efficiency, accuracy and economic benefit. As a result, we have new technologies emerging, such as smart grids, smart homes, intelligent transportation and smart cities etc. Other application areas include Wireless Sensor Networks (WSN) for detection of forest fires and monitoring of aquatic environments. In such a system each object is uniquely identified but has the capability of interoperability with other objects. It is estimated that the IoT will consist of almost 50 billion objects by 2020. This opens up many areas of research. At the university of Ghana, Department of Computer Science is working on a Vehicular Ad-hoc Networks (VANET) system to support intelligent transportation. This work is being done in collaboration with Middlesex University. The idea is to use roadside units to support communication between vehicles on roads. This has the potential of helping us manage our road traffic in an intelligent manner.

This vision of the Internet of Things has been made possible due to the convergence of multiple technologies, including ubiquitous wireless communication, real-time analytics, machine learning, commodity sensors, and embedded systems.

But why is this story of interest to you gathered here, who are mainly interested in information science? Well the answer is simple the Internet of Things, is creating what is called a data tsunami. A situation in which we find ourselves overwhelmed by the sheer volume of data that is being generated by all this billions of interconnected devices. It has been estimated that more data has been generated in the last two years than throughout history. A new discipline of data science has emerged or Big Data. The emergence of 'Big Data' is leading to real transformation in the business world. Governments and commercial enterprises in Africa are beginning to take interest in the use of Big Data for the analysis of data in real time.

But what exactly is big data?
Initially Big data has been defined in terms of the three V's, Volume, Velocity and Variety, however of late, two other parameters have been included, Veracity and Value. In the literature volume has been defined as how much of data there is
.

Velocity is defined in terms of the speed with which new data is generated and how quickly the data is processed. Dynamic data streams such as those from sensors and the web are being logged and connected in real time by other applications, hence the need for real time data analytic tools to meet the increasing rate at which data is generated.

Variety on the other hand has been used to define the format of the data, structured semi-structured and unstructured. Variety has also been used to refer to the structural heterogeneity in a dataset. In recent times organizations are shifting from merely analysing traditional transactional data such as sales, inventory details, procurement data, customer data etc. to data with embedded objects such as images, sentiments expressed in product reviews, unstructured text from call records and service reports, online behavior such as click streams, images and videos and geospatial and temporal details all of which greatly complicates the problem. This is an attempt to gain greater insight 'knowledge', and hence a competitive advantage. These data types add richness and high value to support more detailed analysis for organizational decision-making and strategic development.

One of the two new dimensions of big data is **Veracity**. Veracity is used to refer to the trustworthiness of the data and the other dimension *Value*, refers to the gain businesses' can derive from the data. Other dimensions have also been used, *volatility* and *validity* however these have not gained widespread acceptance and use. It would appear that each new publication dreams up a new V.

How big is Big Data
It is noteworthy that these definitions only provide a qualitative view of what is described as big data. At the University of Ghana Legon, a number of questions have been asked with regards to these definitions. With regards to the volume, a key question however is how big must the data be to qualify as *big data*?

No values have been given in the literature to suggest what values of velocity will qualify data as being big. We have argued elsewhere that ultimately, the volume and velocity are intimately linked to the processing capacity of the system under consideration and hence the business needs. Assigning a numerical value to what will qualify in terms of volume as big data is thus not very useful. What may qualify as big for one enterprise may not be so for another enterprise.

A helpful definition will be when *the data arriving exceeds the processing capacity of the conventional database and data warehouse solutions available to an enterprise*.

New Conceptual model of Big Data

For many businesses therefore, big data becomes an evolving target, as they need to constantly develop new solutions for the data they process. The volume of data will be dependent on the rate at which new data is being generated and the rate at which it is arriving. As such volume and velocity are intricately linked. What has not been mentioned as far as velocity is concerned is the rate at which the data is being processed. This constitutes another aspect of velocity not intricately linked to volume. Even though it may be argued that the processing rate affects the volume of data yet to be processed it does not affect the total volume of data an organization has.

It is our view that big data has to be defined as a function, of volume, velocity, and variety. The exact nature of this function we are yet to determine.

$$Big\ Data = f(volume, velocity, variety)|_{veracity} \rightarrow value$$

With all this amount of data being generated, we are also generating new volumes of information, managing this new volume of information thus becomes a real challenge. Even when you are able to manage this successfully, key question is what knowledge can you derive from it? These are not trivial questions. We are thus experiencing information overload, in businesses, schools and in our minds. We therefore require new systems for managing the knowledge we now create.

Knowledge

It has been often said that the 21st century economy is characterized by knowledge, and the statement that we live in a knowledge economy has become something of a cliché. As such there has been a growing interest in treating knowledge as a significant organizational resource. The increased interest in organizational knowledge and knowledge management has resulted from the transition into the knowledge economy, where knowledge is viewed as the principle source of value creation and sustainable competitive advantage. Accordingly, a new class of information systems, referred to as knowledge management systems (KMS) have also been emerging. The objective of KMS is to support construction, sharing and application of knowledge in organizations.

Certainly, knowledge is a key concept today. How do we transition from data to information to knowledge and vice versa? Do people have a role in this transition? Is it all about technology? How do we develop systems and methodologies to achieve trans-disciplinary knowledge exchange using information and communications technologies? Crucial to knowledge creation will be the conversion of tacit knowledge to explicit knowledge and vice versa. Can this process be formalized using artificial intelligence techniques? Data in its native form has no meaningful value unless that can be turned into

information and ultimately knowledge to aid the decision process. Traditionally, information management has been about getting the right information to the right people at the right time and about capturing, codifying and sharing information. In doing this, the emphasis has been to rely on ICT. The assumption here is that the knowledge already exists and if only we can capture and codify this knowledge. According to this view of knowledge management, the practice of KM begins sometime after knowledge is produced.

Invariably information technology given the arguments made thus far will continue to be at the core of knowledge management systems. We however will argue that there are other critical factors and that the science of knowledge management cannot be established only through information technology. As has previously been argued by other researchers, we suggest that knowledge science is made up of data, information, people and systems.

Many different definitions have been given in the literature to suggest what constitutes knowledge. These definitions may either be epistemological, conceptual, practical, and may be narrow or broad in scope. The study of knowledge referred to as epistemology, seeks to understand the nature of knowledge to know truth from false, a dynamic process of justifying personal belief in ascertaining or finding the truth. Plato regarded knowledge as having absolute and permanent attributes. Today this can be regarded as data. Data are building blocks that are unitary, independent, and timeless. Data are raw facts and numbers, which can be informative but by themselves provide little value for decision making, planning, or any other action. Data gain meaning once they are put into context and when the relation between the data and context is understood and given relevance and purpose then it becomes information. By combining information with individual or group experience with understanding of patterns rather than relations that guides decision-making we obtain knowledge. Knowledge thus deals with truths and beliefs, concepts and people experience.

Experts have categorized knowledge as being individual, structural and organizational. Structural knowledge is often codified as reports and manuals and is built upon available data in data warehouses and people experience. This form of knowledge, structural knowledge, is referred to by some experts as explicit knowledge (Nonaka and Takeuchi, 1995). Explicit knowledge because it is codified, lends itself to transmission using formal methods. Individual knowledge is personal in origin, difficult to formalize and codify and articulate and may not be documented. This form of knowledge is referred to as tacit knowledge.

Knowledge Generation

An important question is how are we as a nation using or planning to use the knowledge we generate? How much knowledge do we generate as a nation? To answer the question how much knowledge we generate I will refer you to SCImago. The amount of knowledge being generated by a nation can be linked to the number of publications coming from that nation.

SCImago has developed an indicator based on the widely known Google PageRank™ algorithm, which shows the visibility of the journals contained in the Scopus® database of Elsevier, a well reputed international publisher, since 1996. These indicators can be used to assess and analyze scientific domains. Between the periods of 1996-2013 the number of publications emanating from Ghana in all fields of computer science was 270. This may be compared with the 8,068 coming from South Africa, the highest in Africa and 674,876 of the USA the highest in the world. Progress and innovation is achieved through research and the solutions to the many challenges that nations face can be addressed through research. With this more than half of those publications cannot be readily classified into a well-defined and established subfield and is classified as miscellaneous. Research output is measured through the number of resulting publications, an indicator of how a country is attempting to find solutions to its challenges. I am using computer science only as an example what I say is symptomatic of all other subject areas. If the figures in this table are anything to go by, then Ghana is lagging woefully behind in its attempt to find solutions to the problems it faces. We cannot rely on other countries to do the necessary research for us because who will better understand our problems than Ghanaians. This necessitates the need to focus more on education and research in general on knowledge creation. When we generate new knowledge at the rate that is currently being done, due to the IoT then we need to manage this knowledge in a systematic way.

Knowledge Management

Knowledge management is the systematic and organized approach to identify, capture and share information and knowledge (both explicit and tacit knowledge) within an organization for creation of new knowledge, competition and improvement of organizational processes. These activities are not discrete and independent, but may be dependent on processes, tools, techniques, and the individuals or groups they are addressed (Hayward, 2000). This will imply that there will be an organizational knowledge repository, to which groups, teams and individuals will contribute. These knowledge repositories need to be managed.

Knowledge Management Systems (KMS)

Knowledge management systems are the integration of technologies and mechanisms that are developed to support KM processes. Every KMS has a number of components:

knowledge discovery (creation), knowledge capturing, knowledge sharing.

Knowledge Creation
At the core of the knowledge management system is the creation of knowledge. All organizations, including higher education institutions, create knowledge. Creation of knowledge can occur through a variety of means, such as scientific discovery or discussions. Scientific knowledge, obtained through scientific investigation is regarded as most reliable and adds up to what may be termed public knowledge. Such knowledge is objective, unique, universal, and repeatable. On the other hand, knowledge obtained in social science includes meanings given by people inevitably, which are wisdom-based knowledge, insight-based knowledge, and experienced-based knowledge. These kinds of knowledge are subjective, vague, ambiguous, and circumstantial.

A key question to consider is how new knowledge is created. Is knowledge a systems creation or a people creation? Of course, the answer to this lies in the way in which we define creation and what it really means. Creation does imply bringing into being something new. New Knowledge however cannot be created in a vacuum. New Knowledge is created on the basis of information and experience direct and indirect and on the basis of previous knowledge. Some researchers are of the view that new knowledge is created through the interaction process between tacit and explicit knowledge. Tacit knowledge itself is created through socialization and social networks. Such knowledge may express itself in the form of mental models and technical skills. Such knowledge maybe articulated into explicit concepts that may be combined into knowledge systems. It should be noted however that the explicit knowledge maybe internalized through learning process (knowledge acquisition) resulting in yet tacit knowledge. Knowledge creation is thus a cyclic process, evolving from lower levels to higher levels. To learn requires you to be aware of gaps between your current state and your goal state. The detection of these gaps constitutes problems for which there is lack of knowledge for effective solution. Learning leads to knowledge claims. These knowledge claims are simply assertions, arguments and theories that may lead to the closure of knowledge gaps. People may form groups and their claims and assertions subject to peer review within the group.

Having said that knowledge may be created through socialization and social networks, a good question to ask at this point is how much knowledge is contained within a social network? Is there a way this can be quantified?

Researchers in the field of information science hold a different view. For them, there is a hierarchy of knowledge at the bottom of which is information engineering, the study of computers and their applications, and at the next level, we have knowledge science, and

its objects, finally, at the higher level there are many applications. At the heart of such systems can be found data warehousing, groupware, document management, imaging, and data mining and a host of technology related tools.

We thus see that, two approaches to knowledge management can be defined. One is knowledge management by the persons concerned where there is a strong people element. This thinking is more inclusive of human resource, process, and social initiatives. Knowledge is something that is produced in human social systems, and this achieved through individual and shared interactions. The other is knowledge management by information and communication technology. However, there is clearly a limit in the approach to knowledge management from only one discipline. We think it is necessary to develop a systems methodology that uses both approaches systematically.

Sources of Knowledge
Davenport and Prusak (1998) have identified five types or sources of knowledge:
• *Acquired knowledge* as the name suggests is external to the organization and thus may be bought leased or rented from consultants. In such cases the key thing is the usefulness of the knowledge rather its originality.

• *Dedicated resources* in this situation, an organization sets aside some staff members or an entire department (usually research and development) to develop within the institution knowledge for use by the organization. These dedicated resources are usually protected from competitive pressures to develop profitable products. Offices of institutional research are by themselves good examples of dedicated resources to the extent that they generally serve specific purposes, which are not duplicated or shared by other departments and offices. This is particularly true when institutional research functions are centralized within one office.

• *Fusion* is knowledge created by bringing together people with different perspectives to work on the same project. The resulting projects represent more comprehensive expertise than possible if members of the team represented one perspective. As noted by Davenport and Prusak that fused knowledge may lead to conflict situation, as such the team must be given time to reach a shared knowledge and language. Cross-functional teams are becoming popular in higher education institutions and are examples of fusion. Institutional researchers are often called upon to participate in various teams due to their expertise.

• *Adaptation* is knowledge that results from responding to new processes or technologies in the market place. The expansion of on-line instruction offered by higher education institutions is an example of adaptation.

• *Knowledge networking* is knowledge in which people share information with one another formally or informally. Knowledge networking often occurs within disciplines; for example, an institutional researcher communicating with another.

Knowledge Capturing
However, knowledge can be easily lost or not used if it is not captured. From a technological perspective, capturing knowledge can be achieved through digitization, documentation, extraction, representation, and storage. How exactly you do this depends on the type of knowledge, tacit or explicit.

Knowledge Sharing
Far more important in the process of knowledge management is knowledge sharing. Finding inputs to complete a task, especially more complex ones, is becoming time consuming and frustrating in the absence of if well-organized, readily available infrastructure and frameworks that contains the type of information needed. As noted earlier, Information comes from many different sources, some easily accessible, others volatile and highly personal. "Knowledge workers need to share things, and need access to the right information at the right time. This is so hard today." What is true? Which solution is better? Or what are the solutions? The tacit knowledge possessed by individuals is crucial and instrumental to an organization's operation and survival. However, reaching the point where employees willingly share what they know "is one of the toughest nuts organizations have to crack" (Bukowitz and Williams, 1999). Technology has made it relatively easy to organize, post, and transfer certain types of information. "On the other hand, contribution is not only time consuming, but is also seen as a threat to individual employee viability" (Bukowitz and Williams, 1999). Unless the organizational environment rewards knowledge sharing, the entire effort to institutionalize a knowledge management system will falter.

Collaboration is another key process that should permeate the organizational knowledge management approach. Every organization does have task forces, committees, project teams, or work groups. The manner in which a modern organization is governed, the way curricula are determined, and the statements written in institutional policies all inexplicitly involve the expectation that individuals work collaboratively. Groupware activities, including sharing of calendars, collective writing, e-mail handling, shared database access, electronic meetings with each person able to see and display information to others, among others, contribute to facilitating virtual and easy collaboration.

To share the knowledge is not nearly the end of knowledge management. What often fails in knowledge management is the inability to shepherd the entire process. Szulanksi (1994) found four barriers to successful sharing and transferring of knowledge: ignorance on both ends of the transfer, absorptive capacity, lack of relationship between the giver

and receiver, and slow rate of adoption. Many corporations have tuned in to these four barriers. These potential hidden obstacles hampering knowledge management have been widely recognized by corporations. Another painful truth is that even though some organizations have been managing knowledge in one form or another, they have not organized the knowledge in a meaningful fashion. Therefore, organizations and employees have been struggling with a convoluted potpourri of data, information, and knowledge without specific mechanisms to leverage their power. Organizing knowledge in a meaningful taxonomy is a challenging task, especially in large organizations with many different individual and group needs. At the same time, the access to knowledge must be relatively easy. A well-thought-out taxonomy would definitely facilitate the ease of access, as would notification mechanisms and personalization of information.

Finally, the ultimate test of any knowledge management system is its use. The best-built portal structure will have little value if the employees do not use it. Some institutional researchers may have experienced the frustration of developing and deploying decision support systems only to find themselves providing the same reports that one could easily obtain from available systems. As with any new endeavor, resistance to change is one of the barriers to successful implementation of knowledge management systems. However, if the perceived (and actual) benefits of such systems are greater than the perceived effort to learn a new tool or adopt a new model of operation, then the chances of success are very high.

KM Technologies

Technologies that support KM include artificial intelligence (AI) technologies encompassing those used for knowledge acquisition and case-based reasoning systems, electronic discussion groups, computer-based simulations, databases, decision support systems, enterprise resource planning systems, expert systems, management information systems, expertise locator systems, videoconferencing, and information repositories encompassing best practices databases and lessons learned systems.

There are two basic approaches to KM for which IT can provide support: codification and personalization (Hansen et al. 1999). With the codification approach, more explicit and structured knowledge is codified and stored in knowledge bases. The main role of IT here is to help people share knowledge through common storage so as to achieve economic reuse of knowledge. An example of such IT tools is electronic knowledge repositories. With the personalization approach, more tacit and unstructured knowledge is shared largely through direct personal communication. The main role of IT here is to help people locate each other and communicate so as to achieve complex knowledge transfer.

Technologies that support KM include artificial intelligence (AI) technologies encompassing those used for knowledge acquisition and case-based reasoning systems,

electronic discussion groups, computer-based simulations, databases, decision support systems, enterprise resource planning systems, expert systems, management information systems, expertise locator systems, videoconferencing, and information repositories encompassing best practices databases and lessons learned systems.

Some Issues

Information Congestion- Communication channel bottlenecks in our computer networks. We sometimes hear that the Internet access is slow during peak hours at work because too many of us are searching the Web at the same time. Sometimes the speed with which we can tap into available internal data warehouses or transactional operational systems is less than desirable because too many of us are accessing vast amounts of data, thus putting a significant strain on our systems. If we had the mechanisms to target very specifically the data or information we are looking for, the overall speed of our networks would be consistently at its best capacity.

Technological Developments Contributing to Emergence and Growth of Knowledge Management
Whereas knowledge management is not defined by technology, technologies support knowledge management (Hildebrand, 1999; Hayward, 2000). Without the advent of powerful and sophisticated hardware and software tools, the field of knowledge management would have been at most a good subject for theoretical lectures and philosophical exercises. Knowledge management processes perform best when enabled by powerful, yet fairly easy to use once implemented, technologies. However emphasis on technology alone will not achieve the required progress toward knowledge management, but even the strongest commitment to knowledge management that is not supported by robust technology will not succeed.

Way Forward
As we have seen, nations must harness the knowledge available nationally and internationally for rapid economic advancement. These can be done partially through the deployment of KMS. Such systems are built upon ICT. This means that priority must be given to the development of those technologies and systems. Our nations cannot and should not be sourcing for this from the outside world. This must be done internally. What this means is that departments of computer science must be strengthened to deliver and support the technologies required to manage knowledge.

Practically every institution in Ghana has a library. At the University of Ghana, Legon, departments and units have their own libraries apart from the university wide library. Will these libraries remain as information centres, storing large volumes of information, or would we see their transition into knowledge centres with chief knowledge officers?

It is quite critical that leadership recognizes the importance of knowledge management and what is required to bring it to actualization. The critical role that computer science can play in this endeavour cannot be overstated.

Computer science and the technologies it enables, in particular Information Communications Technology (ICT), form the engine, which drives all modern economies. There is ample evidence to support the crucial role played by Information Communications Technology (ICT) in any modern economy.

Crucially, there is an acute shortage of the skills and expertise required to effectively deliver solutions based on ICT.

It will come as no surprise to note that in this country there is not a single research institute or centre dedicated to computer science research.

In the view of what has been said I will call on government, to take steps to strengthen departments of computer science across the country.

I will ask that special dispensation be granted to Departments of Computer Science to recruit and strengthen their staff base.

Government should consider as a matter of urgency setting up a national centre for Computer Science and Information Technology Research, to provide solutions to IT problems the nation encounters.

KNOWLEDGE MANAGEMENT: THE BEDROCK OF GHANA'S DEVELOPMENT.

BY
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Abstract

Knowledge Management (KM) tools and capabilities have increasingly been recognized by most governments in the world as strategic resources within the public and private sectors. The research study identified salient points of KM that could be adopted to the work environment. The methodology included the survey of 225 members of staff in positions such as Managers, Human Resource (HR) /Administrative Officers and Administrative Assistants in Eastern Region, Akosombo. They explained and investigated the five (5) lenses to extrapolate key knowledge sharing about the importance of Knowledge Management for today's organizations, as bedrock for development. It also looked at why Knowledge Management is important to Ghanaians, the benefits and challenges of KM and recommended important aspects of Knowledge Management and Capabilities.

Keywords: Knowledge Management, knowledge assets, knowledge sharing, learning organization, organizational learning, knowledge repositories, intellectual capital, information capital, knowledge mapping

Introduction

Davenport et al. (1998) describe four broad objectives of Knowledge Management Systems in Practice:

¨ create knowledge repository
¨ improve knowledge assets
¨ enhance the knowledge environment
¨ manage knowledge as an asset

Knowledge Management involves a strategic commitment to improve the organization's effectiveness, as well as to improve its opportunity enhancement. The goal of knowledge Management as a process is to improve the organization's ability to execute its core processes more efficiently (Davenport and Prusak, 1990).

Many organizations in present Ghana are already making significant strides towards positioning their organizations to become world class entities poised for excellence at home and abroad. This includes providing learning and development opportunities to employees at all levels of their organizations in a planned and systematic manner to ensure that their people have the requisite knowledge and skills for current and future work programmes. This involves improvement in such areas as: training delivery systems and facilities, talent management, and succession planning. This approach can provide a guide to employee training and career development in the country as a whole.

The field of Knowledge Management has really come of age in recent years, and it now time to reap the benefits in Ghana. International experience shows that an effective Knowledge Management function can support these other initiatives.

Organizations that have figured out how to secure meaningful value from helping people share knowledge are thrilled with their results and cannot imagine working any other way.

Organisations worldwide are making fundamental changes in their existing Knowledge Management Systems (KMS) to take advantage of these developments. The United Nations (UN), a knowledge-based, knowledge gathering and knowledge disseminating organization, is in the process of changing to ensure that the full potential of the new tools of Knowledge Management is harnessed to assist countries in achieving the Millennium Development Goals (MDGs).

So what is Knowledge Management all about? "Knowledge Management is a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. These assets may include databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers.

Knowledge Management is applied today across the world, in all industry sectors, public and private organizations and institutions and international organizations. Ghana is now joining the global community of KM-enabled organizations, with companies like Volta River Authority, Bank of Ghana, Ghana Grid Company (GRIDCo), Northern Electricity Distribution Company (NEDCo) embracing this approach. Most importantly, effective Knowledge Management is now recognized to be 'the key driver of new knowledge and new ideas' to the innovation process, to new innovative products, services and solutions.

Effectively used, Knowledge Management, as a discipline will result in all of us better achieving, or even exceeding our own and the country's shared objectives. The purpose of Knowledge Management must not be to just improve our performance as individuals, but to be able to create, transfer and apply knowledge across the whole of Ghana with the

purpose of better fulfilling the potential that we share. Knowledge Management, especially accelerated knowledge creation, is the driver for innovation. Increasingly, products and services are becoming 'smarter' and more knowledge based. Our ability to better collaborate in physical and virtual teams, as knowledge workers, is driving the process of new knowledge creation. Ideas can now be turned into innovative products and services much faster.

Knowledge Management (KM).

So what is involved in Knowledge Management? The most obvious point is the making of the organization's data and information available to the members of the organization through portals and with the use of content management systems.

Knowledge Management methods and tools will offer new opportunities for the country and the approaches should be integrated into the National Development Plan

The researcher has the following five (5) lenses to extrapolate key knowledge sharing about the importance of Knowledge Management for today's organizations, as bedrock for development.

Lens 1: Don't lose knowledge repositories

It was indicated that vast amount of knowledge have been lost because knowledge repositories such as libraries, archives and museums were destroyed or knowledge did not spread beyond one individual, community or empire. Let us look at Library of Alexandria, Egypt, built before Christ (BC). The Library was a good number of times burned by Christians and Muslims. It has stored knowledge over the years. The library in Alexandria, Egypt is a legendary one. It held a collection of several hundred manuscripts and was the greatest repository of knowledge in that time. Compare it to the Library of Congress today. Pyramids are also important because they are part of history. They give an insight into the ancient Egyptian culture. They are one of two things that can be seen from space and are really beautiful landmarks. They are still important today because they are part of the ancient Egyptian civilization. Many legends also passed down from ancient civilizations, mention the Pyramid as a repository of sorts to protect the knowledge of a highly advanced civilization from "a flood." The Ghana Empire could have learnt lots of lessons from the Egyptians. Because some empires failed to preserve or transfer knowledge, many brilliant ideas had to be re-invented again and again. Now technology and gadgets offer new ways to electronically preserve and transfer knowledge. An example is the role Virtual Libraries are playing in the areas of dissemination of information and knowledge. For Virtual Libraries, physical location is not relevant. For institutions in Ghana, it is imperative to capture organizational data, information and knowledge. The emergence of Internet and many electronic technologies definitely changes the way people live.

On the other hand, a Knowledge Repository is also an online database that systematically captures, organizes, and categorizes knowledge-based information. Bloomfire and Expertise Locator are examples of online knowledge repository.

Lens 2: Improve Knowledge Access and Transfer

Knowledge access and transfer are vital in the knowledge economy. To Improve knowledge access and transfer, the emphasis should be on connectivity, access and transfer. Technologies such as video conferencing systems, document scanning, skype, facebook, twitter and sharing tools and telecommunications networks are central. Organizational knowledge is knowledge held, created, and shared in an organizational context; to foster creativity and innovation for competitive advantage. According to Nonaka, knowledge is defined as "justified true belief" (Nonaka, von Krogh, & Voelpel, 2006). Knowledge can also be defined as experience or previous knowledge that has been put into context, and is now actionable and therefore of value to the organization (Hatch, 2009). Organizational knowledge is about people-the ideas, experiences, expertise, and knowledge contained in the minds of individuals integrated with experience, context, interpretation, and reflection. Organizational knowledge consists of the critical intellectual assets within an organization

Lens 3: Learning Organization

Learning is important to our day-to-day activity. In other words, learning and development are critical processes for enhancing productivity and organizational performance. The management of these learning and development processes is central to the effectiveness. Learning is a strategic enabler of change — an indispensable tool that supports new initiatives, re-skills our workforce and prepare Ghanaians to address key market shifts and organizational transformations, such as those associated with the rapidly approaching on demand era.

Learning and development encompasses a wide range of activities designed to improve the capabilities of people. Capabilities comprise not only the technical skills and knowledge people have, but also their attributes, attitudes and behaviors. Learning and development activities can be designed to deliver specific skills in a short period of time to meet an immediate need, or designed to achieve broader requirements over a longer period (Goodluck, 2011).

Most Countries can also collapse because of insufficient access to education. Education is the key means of cultivating human capital. Human capital is every country's key resource. The Internet makes it easier than ever for individuals around the world to access information and grow their knowledge. Now there are lots of public and private universities.

Organizational learning is the process of creating, retaining, and transferring knowledge within an organization. An organization improves over time as it gains experience. From this experience, it is able to create knowledge.

This knowledge is broad, covering any topic that could improve the organization. Examples may include ways to increase production efficiency or to develop beneficial investor relations. Knowledge is created at four different units: individual, group, organizational, and inter-organizational. An organization learns successfully when it is able to retain this knowledge and transfer it to, or spread it throughout, the various divisions within an organization. Organizational learning in an organization allows it to stay competitive in an ever-changing environment. It is a process of improvement that can increase effectiveness, efficiency and accuracy.

Balanced Scorecard and Knowledge Management. The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications.
The Learning and Growth Perspective focuses on:

- Human Capital-Jobs and people issues
- Information Capital- Systems and technology issues
- Organization capital- Organizational climate and quality of work-life

The Learning and Growth objectives describe how the people, technology, and organizational climate combine to support strategy. Measures in this perspective are lead indicators for improvements in the internal processes, customer and financial perspectives. The Balanced scorecard improves learning in organisations.
The researcher looked at the five disciplines that should be mastered when introducing learning into an organization: system thinking, personal mastery, mental models, team learning and bearing shared vision (Senge 1990). Did you?

Lens 4: Preserving Institutional Memory
This has to do with recording all activities carried out in an organisation. It also encompasses monitoring and evaluating staff performance for preservation. This involves monitoring and preparing reports on what has been done.
 Preserving institutional memory is very vital in Ghana. Institutional memory is a collective set of facts, concepts, experiences and know-how held by a group of people
In order to prevent the loss of institutional knowledge and plan for knowledge transfer, organizations must develop strategies to ensure business continuity.

The preservation of Institutional Memory will look at:

1. Establish mentoring programmes.
2. Establish ongoing process to determine which employees have the most critical knowledge
3. Time Capsule
4. Expertise Location.
5. Documentaries
6. Storytelling Development

Memory institutions including Galleries, libraries, archives and museums (GLAMs) transmit experience and creativity across the borders of time and space, language and custom, tribe and individuality. As institutions, the GLAMs have their own memories, enshrined in their collections, buildings and the traditions of their staff and visitors. Those memories are as changeable as human memory, evolving over time in response to professional imperatives, community expectations and opportunity. This knowledge is retained in various 'human' and 'non-human' repositories on specific organizational levels (Walsh and Ungson, 1991). However, the organizational knowledge retained through employees—also defined as human capital—is the most valuable source of competitive advantage (e.g. Grant, 1996). This retained knowledge is an integral part of the organizational learning process. (Grant, 1996). It is gained by organizations translating historical data into useful knowledge and wisdom. Memory depends upon the preservation of data and also the analytical skills necessary for its effective use within the organization.

While we often discuss the problem of employees' turnover in the country, a problem often not addressed is the loss of an organization's institutional memory and the loss of important information due to poor record-keeping and donor files. The late P.V Obeng, the late Louis Casely-Hayford, etc. have gone with institutional memories. It is troubling to think that over 95% of businesses in Ghana have no plan, no method and no system to capture and use their own hard-won, expensive Institutional Knowledge. We should stop re-inventing the wheel and stay focused to put Ghana on a higher pedigree.

As modern KM practices centering on a people-to-people approach grow in importance and effectiveness, there is a cyclical process by which knowledge in people's heads (tacit) is embedded into explicit resources—in documents, operations manuals, training manuals, videos, databases, storyboards, wall charts, web-based team repositories, Human Resources orientation packages, e-learning resources, etc. For KM to be effective these explicit resources must be made available to employees for reuse and for application to new work; the cycle never ends. According to Ashkenas (2013), three strategies are considered for maintaining institutional memory: build an explicit strategy; identify the few key things and use technology to create a process.

Lens 5: Manage Intellectual Capital

To help in competitive advantage, managing intellectual capital is very, very significant to institutions in Ghana. The value of a company or organization's employee knowledge, business training and any proprietary information may provide the company with a competitive advantage. According to Hamzah and Ismail (2008), an organisation's intellectual capital is said to be a source of competitive advantage and there is evidence that business success can be partly explained by its intellectual capital.

Wang and Chang (2005) have proved the positive relationship between Intellectual Capital management and business output. According to Hamzah and Ismail (2008), an organisation's intellectual capital is said to be a source of competitive advantage and there is evidence that business success can be partly explained by its intellectual capital. Intellectual capital is a real business asset, although measuring it is a very subjective task. Companies spend millions annually training their employees in business-specific topics and otherwise paying for increased competence in the staff.

As technology and process improvements become more of a differentiating factor within modern companies, intellectual capital is likely to become an even stronger force in the marketplace. In other words, Valuable knowledge assets held in the heads of staff are made available for use to create wealth for the enterprise. Some of the subsets of intellectual capital include human capital, information capital, brand awareness and instructional capital (Xiaojun, 2004).

In today's fast changing and non- linear business environment the only way to gain competitive advantage is by managing intellectual capital, which is more commonly known as Knowledge Management (KM). There are basically three broad objectives of KM: leveraging the organization's knowledge; creating new knowledge or promoting innovation; and increasing collaboration and hence enhancing the skill level of employees. Intellectual capital includes the intangibles such as information, knowledge and skills that can be leveraged by an organization to produce an asset of equal or greater importance than land, labor and capital.

According to Harrison and Sullivan (2002), an organisation's context is the organisation's internal and external realities. Organisation's internal realities are concerned with direction, resources and customers. Meanwhile the organisation's external realities are related to opportunities, threats and focus on the fundamental forces affecting the long-term viability of the industry as well as the immediate opportunities available to the organisations. There is the need to manage staff who possess specialised knowledge and skill sets. Organisational knowledge should be protected. The VRA uses the intranet to share knowledge among staff so that it is not exposed to outsiders. Organisations need to protect knowledge in order to remain competitive.

Overview of Volta River Authority, Ghana Grid Company, Volta Lake Transport Company and Ghana present

The Volta River Authority (VRA) was established on 26th April 1961, under the Volta River Development Act, Act 46 of the Republic of Ghana. The Authority's primary function is to generate and supply electrical energy for industrial, commercial and domestic uses in Ghana. The Authority was to plan, execute and manage the Volta River Development. The detailed description of its functions fall under the two (2) broad heading of Power and Non Power Activities. In addition, Volta River Authority started with the development of the hydroelectric potentials of the Volta River and the construction of a nation-wide grid transmission system. Today, it has assumed, as secondary function, responsibility for the development of other energy potentials of the Country.

Ghana Grid Company (GRIDCo) was established in accordance with the Energy Commission Act, 1997 (Act 541) and the Volta River Development (Amendment) Act, 2005 Act 692, which provides for the establishment and exclusive operation of the National Interconnected Transmission System by an independent Utility and the separation of the transmission functions of the Volta River Authority (VRA) from its other activities within the framework of the Power Sector Reforms.

Volta Lake transport Company (VLTC) was incorporated in 1970 to provide North-South water-borne transport for persons and freight on the Volta Lake. The Company operates a fleet of passenger vessels, cargo ships and barges, totaling nineteen (19) sailing vessels.

Scope of Operations

The Company operates in two main areas:

·   North-South Services

·   Ferry-Crossing Services

VLTC is a subsidiary of VRA

The Asuogyaman district is the location of a hydroelectric dam in South Ghana, the Akosombo Dam, in the town of Akosombo. The Asuogyaman District is one of the twenty-one (21) districts of the Eastern Region of south Ghana. VRA, GRIDCo and VLTC are in the Asuogyaman District. The capital is Atimpoku. (Wikipedia, 2016)

Ghana, according to Wagadu (2014), the earliest known empire of the western Sudan, first entered the historical consciousness of North Africa near the end of the eighth century but probably originated long before. The empire's legacy is still celebrated in the name of the Republic of Ghana; apart from this, however, modern-day and ancient Ghana share no direct historical connections.

The present Ghana was the first place in sub-Saharan Africa where Europeans arrived to trade - first in gold, later in slaves. It was also the first black African nation in the region to achieve independence from a colonial power, in this instance Britain. Despite being rich in mineral resources and endowed with a good education system and efficient civil service, Ghana fell victim to corruption and mismanagement soon after independence in 1957. In 1966 its first president and Pan-African hero, Kwame Nkrumah, was deposed in a coup, heralding years of mostly-military rule. In 1981 Flight Lieutenant Jerry Rawlings staged his second coup.

The country began to move towards economic stability and democracy. In April 1992 a constitution allowing for a multi-party system was approved in a referendum, ushering in a period of democracy. The current president is John Dramani Mahama (Wikipedia, 2016)

Specific Objectives

1. To investigate five (5) lenses to extrapolate key knowledge sharing about the importance of Knowledge Management for today's organizations, as a bedrock for development.
1. To determine why Knowledge Management is important to Ghana
2. To investigate the challenges of Knowledge Management to Ghanaians
3. To recommend important aspects of Knowledge Management Capabilities.

Statement of Problem

Today, knowledge is assumed to be the key asset, the effective exploitation which determines success for the firm (Michailova and Nielsen 2006). In a way, Knowledge Assets or Digital Records are not being captured, managed or appropriately preserved in a consistent and efficient manner. This creates significant risk since critical organizational knowledge assets, institutional memory and intellectual capital may be lost, not accessible or only recovered at a high cost.

Many organizations know the important role knowledge repositories, learning, intellectual capital, institutional memory and mentoring play in knowledge management. There are no mechanisms of capturing, sharing and transferring of tacit and explicit knowledge in Ghana.

Research Methodology
Demographic information

This section presents the background of the staff in terms of organisations, departments and sections they work, sources of data, population, sample size, research sampling techniques, data collection guidelines and modes of data collection and respondents.

Sources of data

Data for the study was collected from both primary and secondary sources. The primary data was collected using two main instruments: interviews and questionnaires. The secondary data included VRA documents, books, the Internet and academic journals.

Population and sample size

The target population from which the sampling frame was chosen in this study consists of a diverse group of professional, high-skilled and skilled individuals employed in Volta River Authority. Volta Lake Transport Company, Ghana Grid Company and Asuogyaman District Assembly, in other words, the target population for our study was the managers and senior staff of Volta River Authority, Volta Lake Transport Company, Ghana Grid Company and Asuogyaman District Assembly a total of 1,500 out of which 225 were selected, making a sample size of 15%. Justification for 15% was also that of the proximity and distances of offices. The offices were closer for data collection.

Table 1: *Population and Sample Size*

Subject	Total Number	Sample Size	%
1. Volta River Authority 2. Volta Lake Transport 3. Ghana Grid Company 4. Asuogyaman District Assembly	1200 100 100 100	180 15 15 15	
Total	**1,500**	**225**	**15%**

Research Sampling Techniques

The sample technique of the study was quota sampling. Quota sampling involves selecting groups to complete questionnaires or to be interviewed that were representative of the general population in Eastern Region, Akosombo. It also allowed a smaller number of people to partake in the survey to represent a larger number. Quota sampling was utilized with the objective of representative data for Ghanaians.

Quota sampling was used as it can represent different categories of people in society (Bryman & Bell, 2007). Quota sampling can be useful in exploratory work or when developing new measures and theory can be generated (Bryman and Bell, 2007).

Non- probability sampling focuses on the sampling techniques that are based on the judgement of the researcher. The justification for Eastern region was that of the proximity to the respondents' offices.

Data Collection Instruments

To carry out the research investigation, the researcher gathered data with which to answer the research questions. The researcher collected data for this study by means of questionnaires and interviews. It constructed in a combination of grading scales, multiple choices, closed and open-ended questions. Besides, the researcher also constructed a questionnaire that had similar set of questions asked in the interview guide. The researcher provided a brief explanation to the topic at the beginning of the questionnaire. Leedy (2010) also observes that the questionnaire method provides a more complete picture of a particular phenomenon.

The questionnaire for the study had four (4) sections bearing in mind the study's objectives. The questionnaires were further administered through email and personally by the researcher. Some questionnaires were collected on the same day and some were retrieved in two (2) or more days after.

There are several advantages for using interview as a tool of data collection since it is flexible and has high response rate and easy to administer. More so, more complex questions could be used, and could control the environment, order of questions and could record spontaneous answers. An interview guide was prepared comprising of a number of questions based on the objectives of the study.

The officers mentioned were chosen because they would use knowledge management at various Departments at VRA, GRIDCo, VLTC and Asuogyaman District Assembly.

In this case, personal interviews and questionnaires were sent and conducted on fifty - eight (58) Managers at the Department, ninety-two (92 HR/Administrative officers and seventy-five (75 Administrative Assistants. All interviews were conducted privately and face to face. Notes were also taken during the interview. Observation however played a vital complementary role to the interview method.

Mode of Data Collection

Both the primary data and secondary sources were used for the research. The researcher reviewed thirty seven (37) Managers and seventy- nine (79) HR/Administrative Officers and sixty -four (64) Administrative Assistants from VRA; Two (2) Managers, eight (8) Administrative Officers and five (5) Administrative Assistants from VLTC; Four (4) Managers, five (5) Administrative Officers and six (6) Administrative Assistants from GRIDCo; Three (3) Managers, seven (7) Administrative Officer and five (5) Administrative Assistants from District Assembly; The respondents were very helpful. Babbie (1992) is also of the view that, a response rate of at least 50% is sufficient for reporting and analyzing a research.

Table 2: *Mode of Data Collection and Respondents*

Subject	Managers			HR/Administrative Officers	Administrative Assistants	TOTAL
1. Volta River Authority	37	2	4	79	64	180
2.Volta Lake Transport	3			8	5	15
3.Ghana Grid Company				5	6	15
4.Asuogyaman District Assembly				7	5	15
TOTAL	46			99	80	225

A response rate of 60% is good and that of 70% is very good, arguing that the overall response rate is one guide to the representativeness of the sample respondents. The above information is data analysis of VRA, GRIDCo, VLTC and Asuogyaman District.

From this perspective, the research findings identified that a number of knowledge transfer technologies in Ghana are utilised to successfully perform projects by staff (such as e-mail systems, digital cameras, etc). Knowledge Management when integrates companies into processes will improve project performance and learning. Knowledge Management is more likely to be successful when Ghanaians are integrated into the knowledge mapping applications. Furthermore, Respondents stressed that specific knowledge assets are utilized for effective knowledge transfer between sections and other. It was observed that the current situation in Ghana is that knowledge is held up in silos, that means companies or institutions do not know where and how to get the type of knowledge needed to apply in employee's daily routines and work processes are duplicated and policies and standards are not adhered to. A number of workers are not abreast of new developments within Ghana. Workers are also not abreast of new trends in their various fields to be able to learn before, during and after best practices to adopt. To leverage and improve the knowledge assets and mapping in Ghana, there is the need to effectively employ best practices to improve KM processes and learning that will lead to good decision making, innovation and one stop shop of information that leverages knowledge. The researcher grouped all Managers, HR/Administrative Officers and Administrative Assistants together, for analytical purposes.

Importance of Knowledge Management
The researcher sought from respondents of the study if knowledge management was important to the nation and governmental institutions in the country. All respondents

answered in the affirmative that knowledge management is very important to government and nation, if only we want to make progress in the 21st century. In relation to the above, the research tried to find out from respondents why they think knowledge management was important to the nation and government institutions. The responses are in Table 3 below

Table 3: *Importance of Knowledge Management*

Responses	Frequency	Percentages (%)
Increases productivity as it helps harness skills and knowledge	64	28.44
Helps increase effectiveness and efficiency in organizations	42	18.66
Helps attract investment into governmental organization	20	8.88
Helps in problem solving and making critical decisions	18	8
It helps avoid costly mistakes and decision lapses in organizations	25	11.11
Knowledge management helps in the exchange and sharing of governmental information	25	11.11
Knowledge management breeds innovation	31	8
Total	225	100

This section sought to find out the importance of Knowledge Management. Respondents were asked whether it was necessary to use Knowledge Management to breed innovation and 8% agreed. On the issue of Knowledge Management increasing productivity as it helps harness skills and knowledge about 28.44% agreed. Furthermore, the respondents were asked whether KM helps increase effectiveness and efficiency in organizations and about 18.66% confirmed that view. 8.88% of the respondents agreed that Knowledge Management helps attract investment in governmental organization. Besides 8% were of the view that Knowledge Management helps in problem solving and making critical decisions. It was also noted that 11.11% respondents agreed that Knowledge Management helps in the exchange and sharing of governmental information, In addition,

it was indicated that 11.11% agreed that Knowledge Management helps avoid costly mistakes and decision lapses in organizations. Using high, semi high or low choices.

How can knowledge be managed to derive the maximum benefits?

The researcher sought to find out from respondents how knowledge could be managed in order to derive the maximum benefits from it. Multiple choices, high, semi high and low, were allowed from respondents. Out of the total responses, a slight majority of 38.66% (87) agreed that gathering knowledge both implicit/explicit is crucial in deriving maximum benefits from Knowledge Management. In addition, 20.44% (46) responses also affirmed to the fact that knowledge needs to be made accessible and usable to derive its maximum benefit.

In addition, 15.11 (34) and 13.33% (30) responses also believed that devising a means of creating new knowledge and combining and integrating knowledge in the organization respectively needs to be done to achieve benefits. Furthermore, 12.44% (28) responses added that a culture of sharing knowledge must be established to acquire the needed benefit and use of knowledge.

Table 4: Knowledge Management to derive maximum benefits

Responses	Frequency	Percentage (%)
Gather knowledge (both Explicit/tacit)	87	38.66
Combine and integrate knowledge in the organization	30	13.33
Make Knowledge accessible and usable	46	20.44
Create culture of sharing knowledge	28	12.44
Device means of creating new knowledge	34	15.11
Other	-	-
Total	**225**	**100**

How can Ghana derive maximum benefits from knowledge management

In relation to the above, the researcher sought to find out how a nation like Ghana can derive maximum benefits from knowledge that needs to be managed. This was made an

open-ended questionnaire to give respondents room to express their opinion over the subject. Summary responses can be found in Table 5 below

Table 5: Ghana can derive maximum benefit

Responses	Frequency	Percentages (%)
A policy on knowledge management in government organizations and institutions should be formulated to guide the process	35	15.55
Preservation of Institutional memories should be encouraged	45	20.44
Organizational learning should be encouraged in government organizations and institutions	55	24.44
A culture of knowledge gathering and sharing should be encouraged	35	15.55
Importance of knowledge repositories such as libraries/archives should be highlighted and preserved	20	8.88%
Necessary technologies for knowledge management and gathering should be invested in organisation	15	6.66%
Regular training and workshops should be facilitated to inculcate the attitude of knowledge gathering and sharing within organizations.	15	6.66 %
Total	**225**	**100%**

The survey tried to find out that a policy on knowledge management in government organizations and institutions should be formulated to guide the process. 15.55% of respondents agreed on that view. Respondents were asked about preservation of Institutional memories should be encouraged, 20.44% affirmed that view. Besides, 24.44% of the respondents agreed that organizational learning should be encouraged in government organizations and institutions. Because of major benefit of knowledge management to Ghanaians, 15.55% of the respondents affirmed also that a culture of knowledge gathering and sharing should be encouraged. For the importance of knowledge repositories such as libraries/archives should be highlighted and preserved, 8.88% respondents were in favour. Another major concern regarding the necessary technologies for knowledge management and gathering should be invested in

organisations about 6.66% saw the need. In addition, regular training and workshops should be facilitated to inculcate the attitude of knowledge gathering and sharing within organizations. 6.66% affirmed their support in that direction.

Implications for the Lack of Knowledge Management in Ghana
Every organisation worries about losing the knowledge and expertise of its key employee. There is no mechanism to capture the tacit and explicit knowledge. In order to ensure this does not happen in Ghana, a robust and dynamic Knowledge Management strategy is a good place to start. The impact of improving the management of knowledge can be far reaching: whether the focus is internal to individual organizations or more broadly applied across Ghana as a whole in an effort to become a more effective player in the global knowledge economy or becoming a more competitive knowledge leader.

Challenges of Knowledge Management in Ghana
In relation to the above, the researcher sought to find out the challenges of KM in Ghana. This was made an open-ended question to give respondents room to express their opinion over the subject. Summary responses can be found below:
- No knowledge sharing culture
- No knowledge assets and mapping techniques
- Organisational eLearning are not well established in Ghana·
- Insufficient resources are available to structure and update the content in repositories.
- Poor quality and high variability of content quality results from insufficient validating mechanisms.
- Content in repositories lacks context, making documents difficult to understand.
- Individual employees are not rewarded for contributing content, and many fear sharing knowledge with others on the job.

Conclusion
Knowledge Management tools and systems have increasingly been recognized by most governments in the world as strategic resources within the public and private sectors. Some of the common challenges that affect the public and private sectors worldwide include enhancing efficiencies.

The changes in the nature of business, the shift to the "knowledge economy" and the new information age have brought new resources that companies in Ghana must recognize to support their business processes. Knowledge, it has been said, is power. It is also one of today's most vital forms of capital – the bedrock on which innovation is founded, and the

fuel that drives growth and expansion. But many companies and countries pay insufficient attention to how knowledge is captured, nurtured, shared and perpetuated. This can lead to the degradation of a business's information resources, and a failure to maximise employee potential. Knowledge Managers should be partner with people at all levels of society to help build nations that can withstand crisis, and drive and sustain the kind of growth that improves the quality of life for everyone.

Knowledge Management in its many forms can be used to expedite and improve the way organisations communicate and transfer knowledge both internally and externally. Now almost every organization in the world has recognized that in order to survive in today's competitive and global environment, it has to face knowledge-based economy revolution.

Lessons learnt, after action review, retrospect, peer review, knowledge retention were not practiced and leverage. Also, since knowledge is a prerequisite of learning, therefore it is effective management can result in improvement in capabilities and business activities of a learning organization which as a result can add value to its services or products, thus improving its overall performance and giving a competitive edge to it. Learning was not adhered in the Empire.

From the data analysed it came clearly that Knowledge Management add competitive values to products and services in the country. Therefore, the purpose of this study was to investigate five (5) historical lenses to extrapolate key knowledge sharing about the importance of Knowledge Management for today's organizations, as a bedrock for development, to determine why Knowledge Management is important to Ghanaians, challenges of Knowledge Management and to recommend important aspects of Knowledge Management Capabilities. Our findings did reflect that the Ghana Empire fell because the people that did not value, preserve, store knowledge and learn across regions. (findings are based on modern Ghana)

For Knowledge Management to be a bedrock for today's librarian, we should use its capabilities for handling, acquiring, processing, managing, sharing, retaining, storing and disseminating information to enhance productivity and efficiency.

Recommendations
We should make best practices our practices, build a knowledge-sharing culture and improve business drivers at various sectors of the economy.

1. Knowledge Management should be included in the National Development Plan
2. Organisational Learning should be encouraged at all institutions
3. Institutional memories should be preserved at all institutions

4. Intellectual Capital should be encouraged in Ghana
5. Ghanaian should not lose Knowledge Repositories, such as libraries, archives Documentation Centre, museums

6. Align and integrate learning and development initiatives with corporate and business planning by reviewing existing activities and initiating new learning programs to support corporate plans.
7. The inclusion of Knowledge Management within ISO 9001:2015. For the first time one of the global business standards explicitly mentions Knowledge as a resource and specifies expectations for the management of that resource.
8. Compile a database of Experts of Ghanaians. Every Institution in Ghana should have a knowledge repository to preserve and store knowledge and value should be realized at all levels.
9. The process of Knowledge Management should be part of our everyday business activities, supported by government, to support the role Ghana can play in the global Knowledge Economy. Technological innovation is taking place at a breath- taking pace.

However, Ghanaians should, to be effective, look at knowledge collaboration, best practices, lessons learnt, organisational learning, knowledge online, expertise location, subject matter experts, after action review, retrospect, data mining, data and information governance, data warehousing, communities of practice, working policies and procedures, learning by doing, etc. When Knowledge Management is practiced and supported in Ghana properly, workers will connect to people, will make them work smarter and will be getting results to achieve the ultimate achievable goals for the country.

References
Ackerman M. S., Pipek, V., & Wulf, V. (Eds) (2003). *Sharing Expertise: Beyond Knowledge Management.* Cambridge, MA: MIT Press
Argyris, C. (1977). Organizational Learning and Management Information Systems. *Accounting, Organizations and Society*, 2, 113-123.
Ashkenas, R (2013). *How to preserve institutional knowledge.* Available at https://hbr.org/2013/03/how-to-preserve-institutional/. Retrieved on the 3rd March, 2016
Argyris, C., & Schön, D. (1978). *Organizational Learning: A Theory of Action Perspective*. Reading, MA.: Addison-Wesley.
Babbie, E. (1992). *The Practice of Social Research*. 6th ed. Belmont: Wadsworth Publishing Company.

Bryman, A., & Bell, E. (2007). *Business Research Methods Revised Edition*
        Oxford: Oxford University Press

Davenport, T., De Long, D., & Beer, M. C. (1998). Successful knowledge management
        projects. *Sloan Management Review*, 39 (2), 43-57

Goodluck, I. (2011). Budgeting for knowledge management in organizations. *Chinese
        Librarianship: An International Electronic Journal*, [electronic], *32*. available:
        http://www.iclc.us/cliej/cl32goodluck.pdf. Retrieved on the 21st November, 2015.

Grant, R. M. (1996). 'Prospering in dynamically-competitive environments:
        Organizational capability as knowledge integration', *Organization Science*, 7,
        375-387.

Gupta, B., Iyer, L. S., & Aronson, J. E. (2000). Knowledge Management: Practices And
        Challenges. *Industrial Management and Data Systems*, *100*, 1-2.

Hamzah, N., & Ismail, M. N. (2008). The Importance of Intellectual Capital Management
        in the Knowledge-based Economy. *Contemporary Management Research*, *4*(3),
        237–262

Harrison, S., & Sullivan, H. P. (2002). Profiting from intellectual capital: learning from
        leading companies. *Industrial and Commercial Training*, *32*(4), 139-148.

Kumar R. (1999). *Research Methodology: A step by step Guide for Beginners*. SAGE
        Publications: London.

Kumekpor, T. K. B (2002). *Research Methods and Techniques of Social Research*.
        Accra: Sonlife Printing Press.

Leedy, P. D., & Ormrod, J. E. (2010). *Practical Research Planning and Design* 9th ed.
        Boston: Pearson.

Marr, B., & Schiuma, G. (2001). Measuring and managing intellectual capital and
        knowledge assets in new economy organisations. In Bourne, M. (Ed.), *Handbook
        of Performance Measurement*, Gee, London.

Michailova, S., & Nielsen, B. B (2006). MNCS and Knowledge Management: Typology
        and Key Features. *Journal of Knowledge Management, 10*(1), 44-54

Nkpa, N. (1997*). Education Research for Modern Scholars*. Enugu: Four Dimension.

Nonaka, I., Von Krogh, G., & Voelpel, S. (2006). Organizational knowledge creation
        theory: Evolutionary paths and future advances. *Organization Studies*, *27*, 1179-
        1208.

Skyrme, D. J., & Amidon, D. M. (2003). New measures of success. *The Journal of
        Business Strategy*, *1*, 20-24

Olcker, C. (2011). *Research Design and Methods*. Pretoria University, SA.

Senge, P. M. (1990, revised 2006). *The Fifth Discipline: The Art & Practice of The
        Learning Organization* New York: Doubleday

Tuomi, I. (1999). *Data is More Than Knowledge: Implications of the Reversed Hierarchy
        for Knowledge Management and Organizational Memory*. In Proceedings of the

Thirty-Second Hawaii International Conference on Systems Sciences, IEEE Computer Society Press, Los-Alamitos, CA.

Wagadu P. (2014). *Ancient Ghana*. Available at http://www.abibitumikasa.com/forums/...php/100871-Ancient-**Wagadu**-(**Ghana**). Retrieved on the 20th March, 2016

Walsh, J. P., & Ungson, G. R. (1991). Organizational Memory. *The Academy of Management Review, 16*(1),57-91

Wang, W. Y., & Chang, C. (2005). Intellectual capital and performance in causal models: evidence from the information technology industry in Taiwan. *Journal of Intellectual Capital*, *6*(2), 222-36.

Weber, R. O. (2007). Addressing failure factors in knowledge management, *Electronic Journal of Knowledge Management*, [electronic], *5*(3), 333-346. Available: at http://www.ejkm.com/issue/download.html. Retrieved on the 12th January, 2016

Wikipedia (2016). *Ghana*. Available at https://en.wikipedia.org/wiki/Ghana. Accessed on the 28th July, 2016.

Wikipedia (2016). *Asuogyaman District* Available at https://en.wikipedia.org/wiki/Asuogyaman District. Accessed on the 28th August, 2016.

Xiaojun, X. (2004). *Managing intellectual capital transformation*, working paper. School of Management, Fudan University, Shanghai

Yin, R. K (2009). *Case Study Research. Design and Methods*. 4th ed. Thousand Oaks: Sage Publications Inc.

KNOWLEDGE MANAGEMENT PRACTICES OF THE LIVING LIBRARIES (*BAANSI*) OF DAGBON, NORTHERN GHANA.
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Abstract

The study focused on knowledge management practices of the living librarians (baansi) of Dagbon, in the Northern Region of Ghana. The paper is a qualitative study and the instruments used for data collection from 2011-2013 includes: in-depth interviews, focus group discussions, observations, storytelling, phased assertion, documents' analysis, field notes, historical profiles, and acoustic appreciation. The findings from the study revealed that knowledge acquisition of the living librarians (baansi) was virtually practical, collective, social or interpersonal and lifelong. Again, the findings indicated that the living librarians, the baansi are indispensable in traditional discourse management among the Dagbambas. They have been a major repository of the history of Dagbon. Management of history through indigenous forms of practices clearly presents new perspectives of local epistemologies.

Keywords: Knowledge Management, Knowledge production, Dagbon, Baansi, Living librarians, Storage of Oral traditions, Dissemination.

Introduction

According to Mahama (2004), *Dagbon* society is divided into identifiable social classes. One major social class within the Dagbon traditional setup is the *baansi (*which consist of the eulogist and drummers), also known as the living libraries and are the focus of this study. The living librarians *baansi* are not mere entertainers but also holders of cultural wisdom and history. In fact, they live and relive the history of the Dagbamba.

In Dagbon state (see fig. 1), the palace is the center of the universe, and it has the *baansi*, who educate, inform, entertain, and record history, playing a key role in everyday life of the Dagbon state.

Oppong (1971) is of the view that the living libraries, *baansi* are the court historians and musicians. They are recorders of historical and present events. This means that the history of the Dagbon nation has been kept by the *baansi*, who recount it at important ceremonies such as rituals performed at installation, naming of babies, funeral ceremonies observance and during festivals. Salifu (2008) re-echos Oppong, (1971) by

emphasizing that the living librarians act as family historians, royal advisors, cultural specialists and entertainers and in the view of Chista and Abdullahi (2010) they are "walking or living libraries''

Figure :1 . The people of Dagbon showing major towns

(Source: https://sites.tufts.edu/dagomba/about-the-dagomba/)
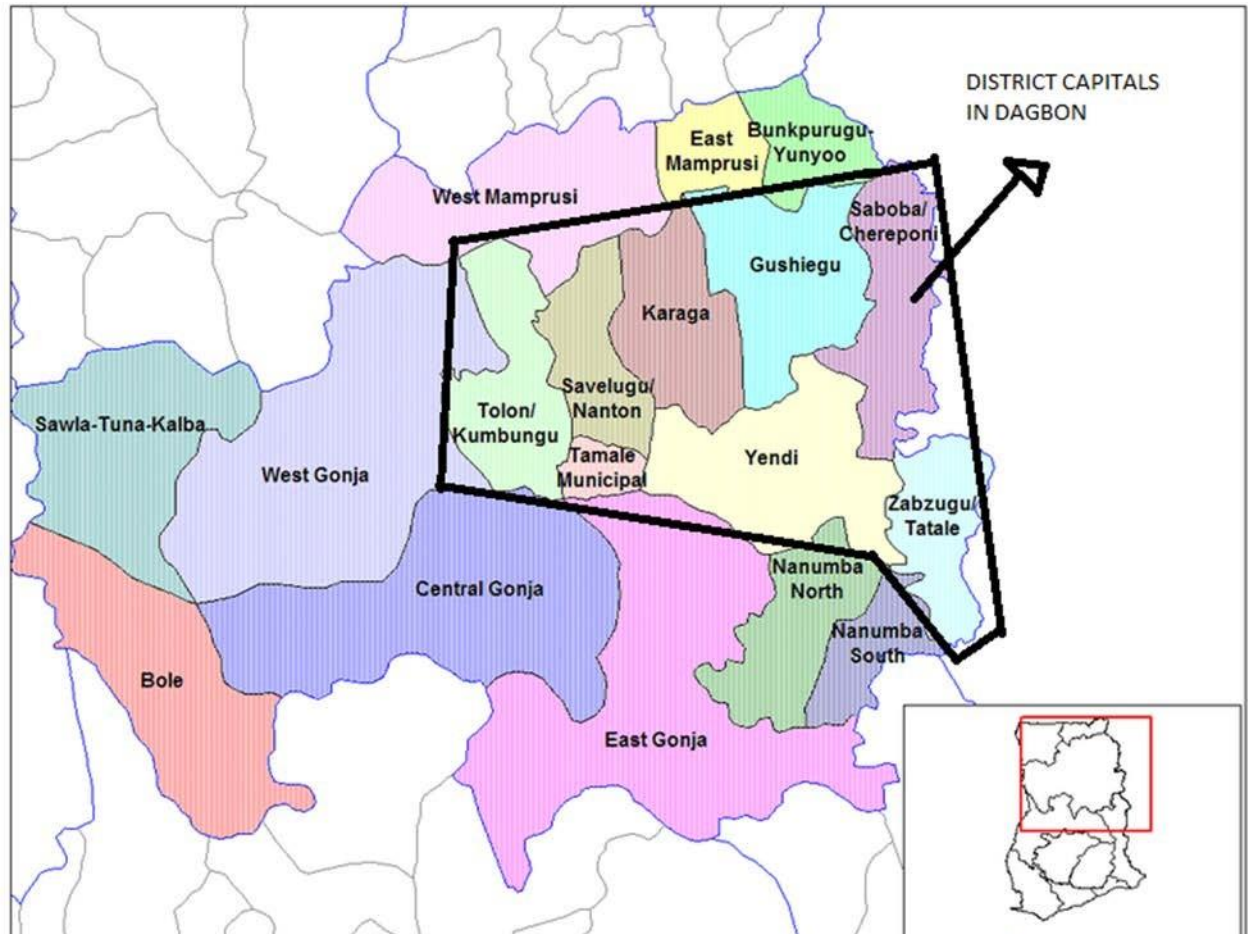
The Living libraries *baansi* are indispensable in traditional discourse management among the Dagbambas. Knowledge Management is a term which includes deliberate efforts to maximise an organisation's performance through creating, sharing and leveraging knowledge and experience from internal and external sources (Hildreth et al, 1999). Therefore, knowledge management is a combination of information management, communication and human resources (Trivedi, 2007). Knowledge management is used to improve library service. This study therefore aims at examining the knowledge management of the living libraries of Dagbon, *baansi* in the Northern Region of Ghana. A lot have been written about the people of Dagbon. However, no one has written about the knowledge management practices of the *baansi*. This is the research gap this paper wants bridged.

Methods and Objectives
This paper is about the knowledge management of the *baansi* of Dagbon. It presents and analyses data collected from community-based interactions. A thematic approach has been used in reporting the findings. Main and sub themes have been generated from the data collected, using various instruments such as in-depth interviews, focus group discussions, observations, storytelling, phased assertion**,** documents' analysis, field notes, historical profiling, and acoustic appreciation. These themes are in line with the main and sub research questions that have guided this research. The major thrust of the questions asked during the interviews and focus group discussions are centered on knowledge acquisition (the learning process); how the knowledge is collected; how the knowledge is stored; and how it is disseminated. The data was collected from June 2011 to August 2014.

The study is the second in the study of the living libraries of Dagbon. The first part of the study, titled *"Decolonizing Our Library System: The Living Librarians (Baansi) of Dagbon, Northern Ghana" **is*** about the various categories of the *baansi* and this can be found in *Library Philosophy and Practice (e-journal)*. This is the second part of the study.

Discussion
The *Baansi* Knowledge Acquisition Process
The focus of socialization and development is learning the gathering of knowledge about how the world works. Such knowledge equips people to manage their existences: to enhance their acquisition of rewards; to minimize their experience of punishment; and in the extreme, to ensure their survival. But learning is not only of instrumental value it also enlightens. …. (Holdbrook et.al.: 2005).

Maslow (1999: 74-75) stipulates that "acquiring knowledge makes the person bigger, wiser, richer, stronger, more evolved, and more mature. It represents the actualization of human potentiality, the fulfillment of that human destiny foreshadowed by human possibilities" (Holbrook et.al, 2005). Knowledge acquisition therefore plays an important role for society. Knowledge acquisition is the process of absorbing and storing new information in memory, the success of which is often gauged by how well the information can later be remembered and retrieved from memory (Kadarusman, n.d).

The *baansi* are indispensable in traditional discourse management among the *Dagbamba* (Salifu, 2008:37). They have been a major repository of the history of *Dagbon.* For example, the *Dagbon* royal family depends on them for guidance when picking suitable appellations when they ascend the skin. Drumming, an indigenous source of wisdom and knowledge is an institutionalized occupation with professional drummers *baansi* well

trained to perform using oratory instrumentation and sign. One is nominally a *Banga* by virtue of being born into the drum caste and starts receiving instructions immediately after they have been weaned from their mother. Meaning, the training starts from childhood. See Fig. 2. Below:

The study also revealed that the training is virtually practical. African knowledge, and its method of acquisition, is practical, collective and social or interpersonal. Mpofu (2002) and Nsamenang (2006) indicate that indigenous conceptions of intelligence, for example, emphasize the practical, interpersonal and social domains of functioning and are quite differentiated from the cognitive 'academic' intelligence that dominates Western concepts of the construct.

Fig. 2: Young children under training

 (Source: Fieldwork, October, 2011).

In order to acquire knowledge, a learner must become directly and actively involved or socially participate in a community. The student practices what she or he has been taught orally and learns to decode it on the drum. That is, the learner imitates the drum beats. A respondent indicated that: *learning is tradition and a way of life*. As you practice and interact with society you acquire knowledge. According to Lauzon (1999) learning from this perspective is a process of social interaction that takes place within a framework of

participation whereby the learner acquires the necessary skills, tools, knowledge, beliefs and values to actively participate in the community. The student drummer practices his lessons on market days by drumming the stock phrase *dakɔli n nyɛ bia* "the bachelor is inferior" at the market.

Again, the process of knowledge acquisition as I gathered in the field, is a lifelong learning continuous and takes a lifetime. According to the Commission of the European Communities (2006) Lifelong learning is continuous, voluntary and self-motivated a pursuit of knowledge either personal or professional reasons. It also improves social inclusion, active citizenship, and personal development, and self-sustainability, rather than competitiveness and employability. In African society, learning is continuous. For example, learning takes place throughout the various stages in life. That is from birth to death or in other words it is rite of Passage. This also applies to the *baansi* of Dagbon.

Below are some of the views from my respondents numbered in serial order in Box 1.

Box 1: **Lifelong Learning**

1. Once you enter till you die.
2. As long as life.
3. It has no end; it also depends on your competencies, position, and role in the society.
4. it's a school of life.
5. The student cannot be complacent to say that I now know what to do; you must be a learner all the time.
Source:(Field work, 2013)

All these views from some respondents attest to the fact that being a *baanga* is a lifelong learning situation. Once you are born into it, you continue learning till you die. Chernoff (1979:101) confirms that, "drumming has no end." When I asked my informants how long they took to learn the trade, one of them said the following:

> As early as two I was given immature drum where I learnt how to drum. Then at about age ten, I and others gathered around the compound with our teacher every evening after supper. We were taught the appellations of Dagbon kings and we recite them, starting from our family, the overlord of Dagbon, extending it to other kings till we were able to commit them to memory. This went on for some time, while followed others to social gatherings till I became a master of my own and was

> appointed "Luna" that is the chief drummer. Even that I am
> still learning. (Lunsi, Interview, 2011)

Currently, he has a lot of drummers under him by virtue of his status as a chief drummer. He also works with the Centre for National Culture at Tamale. Even though he is illiterate, his boss at the Centre considers him a professor of *baansi* in his own right. The boss at the Centre recognizes him probably because he is also a native of Dagbon and understands the role of the *baansi* in the society. Shanbhag (2006) alludes to the fact that the participation of various societies, peoples and agencies outside of academia and outside the western world stay unacknowledged.

In response to the content of the knowledge, I was informed by a respondent that one begins with one's ancestral praise poetry, when the teacher becomes satisfied then there is a progression the next stage; *be kpiimba* (old ancestral praise; then you move to the *Nam* (chieftaincy institution). The chieftaincy institution comprises of: the Yendi skin; Past Ya - Naa (kings of Dagbon); their siblings; those who ascended the skin before their demise; gate systems and the birth name, children, and prince-hood; Particular kings; Praise names; Chiefs who went to war or their representatives. These statements underscore the fact that the training of the *baansi* takes a lot of time and this fits into Higgins' (n.d) definition of science as ……., "Knowledge acquired by study, mastery, trained skill".

The training is holistic. Holistic education is based on the premise that each person finds identity, meaning, and purpose in life through connections to the community, to the natural world, and to spiritual values such as compassion and peace (Miller, 1999). According to Kargbo (2006) indigenous knowledge is holistic, with all elements of matter viewed as interconnected which cannot be understood in isolation. The study revealed that acquiring knowledge to be a *baansi* involve other knowledge not only from your own family but the entire Dagbon social, economic, political and spiritual knowledge.

The discussions furthermore revealed that the work of the *Baansi* entails a diverse range of skills and great reservoir of knowledge. One can specialize as a singer with the knowledge in the proverbs, history and the genealogy or a player of the drum. According to Locke (1990) the quality such men possess include gifted musicianship, expert understanding of the history, and sensible judgment.

Storage of Dagbon Oral Traditions
African nations are going through many changes under globalization; economically, politically, socially and ecologically. These changes, which are affecting African

societies, have had implications for African cultures and especially social and knowledge traditions (Macomb, 2004). According to Kargbo (2006), indigenous knowledge (IK) is vital information that is sadly diminishing at an alarming rate; as such there is an urgent need to collect it before much of it is completely lost. There is therefore the growing need to preserve indigenous knowledge as indigenous communities around the world are facing a great challenge to the survival of their cultural heritage and knowledge traditions (Stevens, 2010).

According to the World Bank (1998), IK faces extinction unless it is properly documented and disseminated. IK is an underutilized resource in the development process. However, the World Bank (1998) asserts that by investigating first what local communities know and have one can improve understanding of local conditions and provide a productive context for activities designed to help the communities. Understanding IK can increase responsiveness to clients. Adapting international practices to the local setting can help improve the impact and sustainability of development assistance. I therefore interrogated the respondents on how they store the knowledge they produced. The response has been grouped under the following headings. Social Immersion Memorization, Symbolization and Constant Practice.

Social Immersion
Social Immersion is regarded as an essential design element for any interactive application and represents in itself an important tool for dispensing certain types of educational materials in an effective manner. This often consists of user interaction and user experience from a content driven approach. Education and socialization take place through living together and among others, imitating existing activities and skills of adults. Dialogue and collaboration are important methods in the process of knowledge productions. In order to acquire knowledge, a learner must become directly and actively involved or socially participate in a community. According to Lauzon (1999) learning from this perspective is a process of social interaction that takes place within a framework of participation whereby the learner acquires the necessary skills, tools, knowledge, beliefs and values to actively participate in the community.

An informant had this to say: *as you interact with society you always learn. The whole society helps in my education.* It is said that when the *baansi* from different communities in *Dagbon* meet, it is an occasion for socialisation as well as a platform for learning from one another. Learners also learn from others through the following: personal visit to different kingdoms; interactions among themselves at social gathering; debate, consultation, discussions, and through migration.

Oral transmission was a major means of preserving knowledge before the advent of modern tools of codifying knowledge. Things that society wanted to remember were composed into songs, proverbs, myths, poetics forms, and oral pose narratives including folktales and riddles. Also, the processes of learning and membership in a social environment are inseparable (Ngulube, 2003). It fosters collective memory and taps on social capital.

Memorization

Memorization in the forms of songs, chants, and recitations is an effective teaching tool. This pedagogical approach involved all students of varying ages and advancements in recitation at the same time. Both recitation and memorization were viewed as primary tools of learning (McKey, 2009). This method of teaching and learning is also adopted by the *baansi* of Dagbon to commit the history, social and the political knowledge of Dagbon into memory. Richards, Platt and Platt (1992) define memorization as the concepts of learning mechanically, repeating material many times over and giving little attention to understanding or meaning.

The act of memorization is often a deliberate mental process undertaken in order to store in memory for later recall items such as experiences, names, appointments, addresses, telephone numbers, lists, stories, poems, pictures, maps, diagrams, facts, <u>music</u> or other visual, auditory, or tactical information. Memorization may also refer to the process of storing particular data into the memory of a device.

I learned from the study that the history of Dagbon has been recorded dating back to 700 years and this is mainly from oral information. This has been corroborated by Chernoff (1997: 3) when she said that, the Dagomba assert that the *baansi* have the "facts" about historical and social realities and have through their art preserved over five hundred years of folk history. But this knowledge has been transmitted from the older generation to date and it is mainly kept in memory. However, according to Oliver and Utermohlen (1995), educators have lamented the fact that often students were trained to be passive receptors of information instead of being taught to critically analyze information. Clearly, memorization does not foster understanding, analysis or retention of information. Caleb Gattegno proposed that the purpose of teaching is to serve the learning process and not to dominate it (Larsen-Freeman, 2000).

Millar and et al. (2012) point out that indigenous knowledge systems in our communities do not have library with books and computers, but they have their own way to produce, codify, store and retrieve knowledge and information. Again, Ngulube's (2003) assertion that oral transmission was a major means of preserving knowledge before the advent of modern tools of codifying knowledge is instructive. Essentially, the *baansi* are walking

libraries, preserving their ancient stories and traditions through song. Social and technical skills are shared and used throughout communities, and in the process, passed to children. However, Ngulube (2002) is of the view that indigenous knowledge, which has generally been passed from generation to generation by word of mouth, is in danger of being lost unless it is formally documented and preserved.

Fellow up discussion revealed that, the *baansi* are able to keep so much text into memory. They replied that practice makes one perfect. Continuous practice helps the *Baansi* to master the text very well. The *Baansi* admit that they are given herbal charms or concoction to improve their memory.

Baansi cherish the power to have a good retentive memory and will go to any length to improve their capacity to investigate deep into their mental faculties to retrieve their knowledge. My investigations revealed that the *baansi* have their own mnemonic devices that aid them during performances. Things that society would want to remember are composed into songs, proverbs, myths, poetics forms, and oral prose narratives including folktales and riddles. According to Ngulube (2003) using socialization processes like dance, music, storytelling and the development of technologies to manage and communicate IK. IK may be preserved without taking it away from the people.

Symbolization
This is the use of symbols to convey meaning. Symbols are a means of complex communication that often can have multiple levels of meaning. Human cultures use symbols to express specific ideologies and social structures and to represent aspects of their specific culture. Thus, symbols carry meanings that depend upon one's cultural background; in other words, the meaning of a symbol is not inherent in the symbol itself but is culturally learned (Womack, 2005). Symbols take the form of words, sounds, gestures, or visual images and are used to convey ideas and beliefs.

The *baansi* of Dagbon use sound as a symbol or code to communicate with their audience. Codification entails activities and processes for converting tacit data and information which is possessed by the elders as part of their oral tradition through meaning-making mechanisms that turn them into the knowledge which allows for the transfer into explicit form.

According to Primadesi (2012), in its simple term, a code is a rule for converting a piece of information into another - usually shortened or covert - form or representation, not necessarily of the same type. Hence, before any data or information becomes knowledge (meaningful) it should have been coded. Such coding takes various forms. Sometimes they are coded in easy or simple language that is readily accessible to all. In other times

the codes are complex formats that require specialized expertise. Proverbs for instance are complex codes of traditional knowledge. It is often those who are educated in the art that are able to understand and use them effectively. By and large, the *Baansi* of Dagbon use such complex codes that often require their audiences to decipher the message by decoding their pithy statements.

The *Baansi* of Dagbon have ways of codifying the oral tradition. The drum language is basically a special beat played on the drum (including other instrument of communication in Dagbon) which is given a particular meaning. For instance*, Namogyilli mal kpiong pam* a beat on the drum means *Namongu* is very powerful.

Constant Practice

Constant practice is similar to the concept of procedural knowledge. According to Echabe and Castro (1993) procedural knowledge is knowing "how to do or how to act". This is basically learning by practice. Sami and Kai (2005) added that learning is an interactive process of participating in various cultural practices and shared learning activities that structure and shape cognitive activity in many ways, rather than something that happens inside individuals' minds. Accordingly, learning is seen as a process of becoming a member of a community and acquiring the skills to communicate and act according to its socially negotiated norms. This means that as one practice, the knowledge becomes part of that person and it is difficult to forget. The axiom "practice makes perfect" illustrates the fact that repetition is crucial for learning. According to Banda (2004) the method of learning and storing of knowledge include, among other things, songs, folktales, proverbs, riddles, figures of speech and oral literature. In addition, imitation, play and participation in adult activities such as agriculture, flooding, cattle rearing and housekeeping were also important.

Young and even adult *baansi* of Dagbon acquire and store knowledge by participating in the activities of the adult people. Zablong (2010: 4-5) recount how he was able to store this knowledge.

> At age six, I was introduced to the drum poetry an introduction which I term as the ABC known as *Dakol nnye bii ba*. The teaching was in portions. Whenever I was taught a portion my trainer made sure I could recite that portion by heart without mistakes before more was added. I graduate at the primary level including tenses and word formation. I moved on to the construction of sentences. This is mainly the drum names. …Anytime my teacher travelled, I practiced on my own till he returns. I also perform on market days to keep me on track and also to refresh my memory. I also sang whenever I was on my way to farm or on farm working. It was after I was able to recite everything from A.B.C. to Z that I move

on to another stage……During the weekends when I returned from farm, my teacher and I will take one drum each. Whatever he plays on the drum he instructs me to do the same.

This narration shows how the knowledge is stored as they continue to recite and practice both orally and the playing of the drum. This has kept the knowledge intact from generation to generation. According to Haverkort (2009) knowledge is inseparable from practice as posited in the endogenous development (ED) tradition.

Some of my informants acknowledge that constant practice at home, markets, and other social functions like weddings, funerals, outdooring, festivals helped them to easily store and remember the knowledge they produced. Echable and Castro (1993) stipulate that knowledge produced through constant practice is very important in the process of development of social identities.

Media and Forms of Dissemination of Information

Dissemination of indigenous knowledge provides an effective tool for research and innovation (Abioye, Zaid and Egberongbe, 2011). Lodhi and Mikulecky (2010) add that the dissemination of indigenous knowledge to a wider community adds the developmental dimension to the exchange of knowledge and could promote a wider and deeper ripple impact of the knowledge transfer. *The question is how do the baansi of Dagbon disseminate their information?*

Etebu (2009) says that, in Africa, information is viewed as a vital resource for the upliftment and development of the people both in rural and urban dwellings. Traditional indicators are still widely used as modes of forecasting and land use management. The indicators are mostly local and are well understood in communities. These traditional indicators include: plants, birds, insects (bees, butterfly, red ants, termites), stars, hill shadows, moon, winds (direction, strength, and time of starting and ending), clouds (position and movement), lightning (location and pattern), springs and swamps, cowries, and so on (Okoola, 1996).

Etebu (2009) again posits that apart from the traditional indicators, there are other ways in which information is provided. The common one is the oral communication. In most rural communities, town criers use wooden or metal gongs or drums to stir up the people and deliver their messages orally. Another means of oral provision of information is organizing meetings. Most villages and towns have squares and centres where the people meet to discuss issues and make decisions. Through this means the leaders provide information for their wellbeing and development. Inferred from the above, indigenous means for disseminating information to the public include; drums or *gongon* used by the

town carrier and social or political meetings by the chief and elders of the community or by the people.

Omongo (2013) also identified other forms and media for information dissemination in rural Africa similar to the one above which include: interpersonal or face to face communication; socio-political meetings; town carrier and performances comprising of song, dance, drama, and role play.

During the field work, I gathered from the various interactions I had with some of the respondents and also observed that songs, drum and dance are used by the *baansi* to disseminate information.

Fiofori (1975) in Omogor (2013) stated that the traditional networks exist as speech surrogates. Speech surrogates are defined as 'communication systems which replace the use of speech' (Marsh, 2013). According to Omongor (2013) surrogate speech played on musical instruments is widespread in many Sub-Saharan African cultures such as the Ga, Dagomba and Akan of Ghana, the Ewé of Ghana, Benin (Formerly Dahomey), and Togo, the Fon of Benin, and the Yorùbá of South-Western Nigeria and Benin. These are talking drums, gongs, oral narratives, stories, songs, incantations, drama, body movement-dances, games and expressive play activities. An informant had this to say about how the *baansi* disseminate their knowledge: *The sound of the drum tells the type of event that is taking place. Different rhythms and different types of music carry different messages.* Suad (2011) stipulates that the people of different African tribes relied on the use of drums to express themselves and important messaging was done through series of drum beats along the length of the jungle.

Festivals are integral parts of *Dagbon* communities. During such festivals, there is a musical dance ensemble at various places across the breadth and length of the Dagbon Kingdom. The *baansi* narrate, recall historical events, important scenarios, heroic events and titles of the past chiefs or kings and bitter experiences of the past events. It is evident from these acts that the public is updated as to the history of the people. Twice in the year, drummers in major towns gather outside the house of the chief to sing selected parts of Dagbamba history. These occasions are known as *Sanban' Luŋa.* This performance begins in the evening and lasts until dawn. As they perform, they review and disseminate the Dagbon history to the general populace.

Awa (1988) observes that many issues, persons and village events are discussed in market places more than elsewhere. In Dagbon, there is what is called *Daa Lung* which means market drum. *Daa Lung* cuts across all the life cycle events of the Dagbomba people. This means from birth to death all performances that take place except *Sanban' Luŋa*. *Daa Lung* are all types of performances of the *baansi* outside the palaces. These

are performed at market places and even in drinking bars. These types of performance employ praises and genealogies and provide music for all social occasions including naming ceremonies, weddings, funerals, and all social gatherings. These performances are aimed at disseminating knowledge to the public. Individuals who need any information concerning the Dagbon people can consult them. During the study it came to light that the young *baansi* practice their lessons on market days where they disseminate information by singing and praising the people they come across.

Traditional mass media serve both utilitarian and aesthetic purposes. They form the vehicle for acquisition and dissemination of information to rural people. Ngwaimbi (1995: 24) stipulates that the traditional media is the live theatre of rural people. Town criers, marketplace and word of mouth are popular among African rural people in terms of their longevity of use and their effectiveness in transmitting messages. He explained that in many rural areas town criers are village messengers who go from street to street delivering messages. Occasional striking a bell or drum, they report the news to attendant villagers. He gives the news headlines thereby arousing the villagers" interest. As already stated, the *akarima* and the *lunsi* are message carries. They use their instrument to communicate messages to the chief and people of Dagbon. There are different methods used by town criers to communicate information.

Social political meetings are part of life of the rural people. Yazidu (1973) identified social meetings, traditional meetings such as weddings, naming and funeral ceremonies and harvest festivals as occasions for interpersonal communication. These meeting places serve as fora where the *baansi* communicate with their patrons and audiences.
I also learned that when the need arises sacrifices must be performed when long portions of the oral history are to be performed. It is believed that sickness or death will befall any drummer who recites too much of this history to outsiders. According to Oppong (1971) this tradition is managed and kept intact by sanctions and taboos such as sickness and death against any drummer from reciting the whole history at any one time. When the need arises, sacrifices must be performed when long portions of the oral history are to be performed.

Conclusion
The production of knowledge is a natural human process. The ongoing production of knowledge is a critical element in the use of information and knowledge. A cultural perspective of knowledge production suggests that knowledge is socially constructed, approached from a localized viewpoint, approached from the view point of participants, dynamic process that is defined by the world in which it is situated and an ideological construct that organizes belief and actions and expectations (Gibson et. al. 2004).

The investigation points to the fact that the *baansi* are the living libraries/archives for Dagbon. They *use* this knowledge to remind *Dagbamba* of who they are (identity and ancestry, and where they are coming from (migratory tradition). There is no doubt that the *baansi* are very important to the *Dagbon* society. This is in line with Salifu's (2010) statement that, Ghana is a multilingual state (which has about sixty languages) and a market place, where each person should look out for kith and kin. The living libraries, the *baansi* remind us of where we are coming from. They also show us the way forward and if the importance of history cannot be overemphasized, it goes without saying that the *banga* is very vital to the survival of Dagbon's culture. Also, according to Connerton (2007: 2) our experience of the present very largely depends upon our knowledge of the past. We experience our present world in a context which is causally connected with past events and objects. We will experience our present differently in accordance with the different pasts to which we are able to connect that present.

The results also indicate that the social life of the *Dagbamba* depends on the *baansi* and this draws on Locke's (1990) assertion that, work associated with rites of passage remains vital, the important calendric sacred and secular festivals are still celebrated, and despite the popularity of mass media, the traditional social dance is still enjoyed. This shows how the *baansi* are the link to every social fibre of the Dagbon society. Above all they warn and guide the society, and they also reconcile the people.

Furthermore, the living libraries (*baansi)* act as a bridge between the past, present and the future generations so their importance in the survival of the cultural traditions of Dagbon cannot be overemphasized. Mahama (2004) emphasised that the history of Dagbon is firmly locked up in the minds of the drummers. Everything from Tohazie, the wandering Red Hunter to Na Gbewa the founding father of ancient Dagbon (i.e. Mamprugu, Dagbon and Nanung) from Na Nyagsi to Na Luro, and from Na Zangina, the wise King to Na Andani II the last Ya-Na before the advent of the white man to Dagbon, are all recorded in the minds of the *baansi.* There is no doubt that they have been able to manage the socio-political history of Dagbon from several centuries till now. Nyumba (2006**)** also revealed that despite limited documentation, people have managed to transmit knowledge efficiently from generation, conserving wisdom for centuries.

References
Awa, N. (1988). Communication in Africa: Implication for development and Planning. *Howard Journal of Communication, 3*, 137–143.
Banda, D. (2008). *Education for all (EFA) and the African indigenous knowledge systems (AIKs): the case of the Chewa people of Zambia*. Nottingham: University of Nottingham

Boon, J. A. (1992). Information and development: Some reasons for failure. *Information Society, 8*(3), 227-241.

Camble, E. (1994). The information environment of rural development workers in Borno State, Nigeria. *African Journal of Library Archives and Information Science, 4* (2), 99-106.

Chista, C. T. & Abdullahi, T. (2010). The challenges and opportunities of preparing LIS students for orally based communities. Paper presented *at World library and information congress:* 76th IFLA general conference and assembly, Gothenburg, Sweden.

Connerton, P. (2007). *How societies remember*. Cambridge: Cambridge University Press.
Etebu, A. T. (2009). Information for rural communities: A solution for sustainable development in the Niger Delta. *Library Philosophy and Practice* (e-journal). *302,* 1-6. Retrieved July 3, 2015 from http://digitalcommons.unl.edu/libphilprac/302

Echebarría Echabe, A., & Gonzalez Castro, J. L. (1993). *Social knowledge, identities and social practices. Papers on Social Representations,* 2, 117-125. Retrieved April 3, 3015 from http://www.psr.jku.at/

European Commission (EC). (2006). *Adult learning: It's never too late to learn*. Brussels: European Commission.

Fayose, P. O. (1998). *Information Management and Dissemination in Orally Literate Societies*. Ibadan: Option Books.

Fiofori, F. O. (1975). Traditional Media Modern Messages: A Nigerian Study. *Rural Africana,* 27, 43 -52

Gattegno, C. (1976). 'On mistakes' in Educational Solutions *Newsletter* 6:2-3.

Gibbons, M., Lomoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary societies*. London: Sage.

Haverkort, B. (2009, September). *Revitalising indigenous knowledges and sciences: Experiences in endogenous development, education and research*. Revitalising indigenous knowledges and sciences: experiences in endogenous development, education and research conference indigenous studies and engaged anthropology: opening a dialogue.

Hildreth, P., et al. (1999). *Knowledge Management: Are We Missing Something? – Information Systems-The Next Generation*. Proceedings of the 4th UKAIS Conference. York, UK, (online) Retrieved April 3, 2015 from http://www.cs.york.ac.uk

Holbrook, A. (2005). Attitude Importance and the Accumulation of Attitude-Relevant Knowledge in Memory. *Journal of Personality and Social Psychology, (*5), 749-769. Retrieved June 6, 2014, from https://pprg.stanford.edu/wp-content/uploads/2005-Importance-and-Memory.pdf

Kargbo, J. A. (2006). Indigenous knowledge and library work in Sierra Leone. *Journal of Librarianship and Information Studies*, *38*(2), 71-78.

Kadarusman, Y. (2012). *Institutions and Economies*, 4(2), 65-100. Retrieved on April 4, 2015 from doi:jie.um.edu.my/filebank/published_article/ 3943/Fulltext4.pdf

Larsen-Freeman, D. (2000). *Techniques and Principles in Language Teaching.* Oxford and New York: Oxford University Press.

Lauzon, A. C. (1999). Situating cognition and crossing borders: resisting the hegemony of mediated education. *British Journal of Educational Technology, 30 (3),* 261-276.

Locke, D. (1990). *Drum Damba: Talking Drum Lessons*. Crown Point, Indiana: White Cliffs Media Company.

Lodhi, S., & Mikulecky, P. (2010). *Management of indigenous knowledge for developing countries*.

Okoola, R. E. A. (1996). Space - *time characteristics of the ITCZ over equatorial Eastern Africa during anomalous rainfall years.* PhD Thesis, Department of Meteorology, University of Nairobi, Kenya.

McKey, P. E. (2009). Memorization—A Valid Teaching Tool. *Association Of Classical & Christian S Chools, XVI*(2), 7-11. Retrieved July 11, 2015 from http://www.accsedu.org/filerequest/3697.pdf 11/7/2015

Mahama, I (2004). *History and traditions of Dagbon*. Tamale: GILLBT.

Maslow, A. H. (1999). *Toward a psychology of being* (3rd ed.). New York: Wiley

Mchombu, J. K. (2004). *Sharing knowledge for community development and transformation: A handbook*. Canada: Oxfam. Retrieved June 6, 2010 from http://www.oxfam.ca/news-andpublications-reports/sharing-knowledge-handbook-2/file

Mpofu, E. (2002). Indigenization of the psychology of human intelligence in Sub-Saharan Africa. In W. J. Lonner, D. L. Dinnel, S. A. Hayes, & D. N. Sattler (Eds.), *Online Readings in Psychology and Culture* (Unit 5, Chapter 2), http://www.wwu.edu/~culture), Center for Cross-Cultural Research, Western Washington University, Bellingham, Washington USA.

McKey, P. (2009). Memorization—A Valid Teaching Tool. *Association of Classical and Christian Schools, 2(XVI),* 7-11.

Meyer, H. W. J. (2005). The nature of information and effective use of information in rural development. *Information Research, 10*(2), paper 214. Retrieved February 4, 2014 from: http://InformationR.net/ir/10-2/paper214.html

Miller, R. (2000). A brief introduction to holistic education. *The encyclopaedia of informal education.* Retrieved July 6, 2015 from [http://infed.org/mobi/a-brief-introduction-to-holistic-education/.

Nsamenang, A. B. (2006). Human ontogenesis: An indigenous African view on development and intelligence. *International Journal of Psychology, 41*(4), 293–297

Ngwaimbi, E. (1995). *Rural Mass Communication*. Westport C. T.: Greenwood Press

Ngulube, P. (2003). Using the SECI knowledge management model and other tools to communicate and manage tacit indigenous knowledge. *Innovation,* 27, 21-30

Oliver, H., & Utermohlen, R. (1995). An innovative teaching strategy: Using critical thinking to give students a guide to the future. (*ERIC Document Reproduction Services* No. 38970

Omogor, M. (2013). Channels of information acquisition and dissemination among rural dwellers. *International Journal of Library and Information Science,* (10), 306 - 312. Retrievd April 3, 2015 from htt p: // ww w . ac a dem i cjournal s.org

Oppong, C. (1971). *Growing up in Dagbon*. Legon: Institute of Adult Education.

Primadesi, Y. (2012.). *Preserving of Information Value in Oral Tradition of Minangicabau Society, West Sumatra*, Indonesia. Retrieved March 3, 2014, from http://eprints.rclis.org/17983/1/Preserving of Value in Oral Traditions.pdf

Richards, J. C., Platt, J., & Platt, H. (1992). *Longman Dictionary of Language Teaching and Applied Linguistics.* Harlow: Longman

Salifu, A. (2008). *Names that prick: royal praise names in Dagbon, Northern Ghana* (Doctoral dissertation).

Sami, P., & Kai, H. (2005). *The Knowledge Creation Metaphor –An Emergent Epistemological Approach to Learning*. Retrieved June 14, 2014.

Shanbhag, S. (2006). Alternative models of knowledge production: a step forward in information literacy as a liberal art. *Library Philosophy and Practice*, *8*(8)

Stevens, A. (2008). A different way of knowing: tools and strategies for managing indigenous knowledge. *Libri*, *58*, 25-33.

Suad, M. (2011). *The Mathematics of The Vibrating Membrane: The Case of The "Gungon".* (Unpublished doctoral dissertation). Kwame Nkrumah University of Science and Technology. Retrieved March 3, 2014 from doi:http://ir.knust.edu.gh/bitstream/123456789/4106/1/Mutawakil Suad THESIS 2011.pd

Womack, M. (2005). Symbols and Meaning: A Concise Introduction. California: AltaMira Press,

Yazidu, I. (1993). *The Study of Radio as a means of communicating Agricultural Information to Farmers in Northern State of Nigeria.* Unpublished M.Sc. Dissertation. Ahmadu Bello University, Zaria p.35.

Zablong Z. A. (2010). *The lunsi (drummers) of Dagbon: Tradition and change. Accra:* Institute of African Studies, University of Ghana, Legon.

DIGITISATION IN CONTEXT: CONSIDERING ETHICS IN INFORMATION USE AT THE COLLEGE OF HEALTH SCIENCES, UNIVERSITY OF GHANA

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Abstract

Digitisation has been a major area of concentration at the University of Ghana since 2010. Tremendous efforts have been made to digitise vital records and documents of the university community. Against this background, workshops have been organised by the University of Ghana Balme Library with support and sponsorship from the Office of Research, Innovation and Development (ORID) and the University of Ghana Computing Systems (UGCS) to train staff from various colleges and departments to equip them to start their digitisation projects. Despite these efforts, issues of intellectual property rights, copyrights and funding have been a great challenge, especially for the College of Health Sciences (CHS) library. Although projects at the Balme Library have been progressing at a fast pace, that of the CHS library continues to delay because of the lack of policy guidelines to direct the workflow among the many challenges including lack of supported equipment to get the project started. The paper aims to examine copyright issues and other challenges faced by CHS Library in digitising its materials with a view to identifying possible problems and making recommendations for their resolution. The study was being guided by the qualitative paradigm. Interviews were held with the College Librarian, head of technical services and the management of the digitisation unit concerning the delay of the project, policies and other ethical issues to be considered. A proposed model was developed as a policy guideline for digitisation at the CHS Library and to a larger extent for the University of Ghana.

Keywords: Digitisation, Digital Libraries, Digital Information, Copyright, Funding, Academic Libraries, Ghana

Introduction and Background

Developments in Information Communication Technologies (ICTs) have greatly improved the way most libraries serve their patrons to get access to information irrespective of their location, hence, the move for more digital libraries to complement conventional libraries. According to Radovan (2010), digitisation has become a fundamental activity in the process of collection development in libraries around the world, placing libraries strategically for future developments globally.

Digitisation is a powerful way to expand access to collections and enables their wide use for research, education, and other purposes. With more libraries digitising their collections, policy concerns and technology problems surrounding digitisation are becoming increasingly paramount (Ebikabowei et al, 2013). Academic libraries all over the world are embarking on digitisation to: increase access, improve services to growing users, reduce the handling and use of fragile or heavily used original material and also to create backup copies (Bansode, 2008). Notwithstanding, the majority of African university libraries are faced with lots of challenges in the implementation of digitisation projects, mainly regarding funding, skills, internet connectivity, telecommunications infrastructure, and copyright issues (Rosenberg, 2006).

Digitisation is part of innovations in the library systems and as stipulated by Manzuch (2009), one of the powerful ways to expand access to library collections to enable wider use for education, research and learning among others, is by digitising important and vital documents. In effect, not only does digitisation aid virtual and simultaneous use of information it also assists preservation which is the only way to safeguard vital materials for future generation (Castelli,2006). Making collections available online is a great way to promote and extend the library's services to its users and beyond. By implication, increase the profile and visibility of the library and librarians credibly. Thus, the roles of the librarians become more relevant to fit global trends in information access and use.

Digitisation projects are extremely capital intensive but worthwhile for any academic institution, in providing users with various formats and access to information. Like most institutions the College of Health Science library is financially handicapped regarding the budget for operations. Where to get funds for the college's digitisation project to get started remains a significant challenge. Another major barrier to getting the digitisation project started is the issue of ethics in information use. This is because copyright clearance, intellectual property and patent policies are not defined. Radvon (2010) emphatically noted copyright as the first problem with digitisation because getting copyright permission is not always possible and can derail a project that appears otherwise straightforward. This makes it difficult to get the project started because the majority of the materials we consider to be digitised are mostly old Health Sciences Journals that are still useful to faculty and students for research, teaching and learning.

Pressure is being mounted on the College's library by most faculty members to get it digitised so they can access materials in the library electronically. Since the copyright of such journals does not belong to the library, it becomes very difficult to have these materials digitised without copyright clearance from the publishers. Added is the fact that management priorities are shifted towards other ventures to get the college running. Although digitising the college's vital and important information is extremely necessary

for posterity and future use, on a scale of preference, issues of digitisation seem not to be highly prioritised by management. Again, there is a lack of policy guidelines to direct the whole digitisation project. For example, the problem of what to include and exclude has not been stated.

Digital technologies are mainstream and are influencing user expectations and behaviour in learning, teaching and research; therefore, the need for universities to reinvent academic libraries to meet these needs keep increasing (Waller and McShane, 2008). Digital information is transforming the way libraries work as well as the very work that they do. It is also helping to satisfy users daily information needs (Smith, 1999).

Study Setting
The University of Ghana is structured into four colleges namely: College of Health Sciences, College of Basic and Applied Sciences, College of Humanities and College of Education to achieve a world-class status in academic training, research and development. It is a homogenous entity; thus, systems of operation remain the same across the colleges although the strength of capital varies from one college to the other. This study looked at the situation at the College of Health Science which focuses on health education and research. The College of Health Science is into the training of health professionals and health researchers. The College has very vital documents (including transcripts of students dated back to the 1960s, old policy documents, administrative records, books and journals) which needs to be documented because they are gradually deteriorating. Against this background, it has become critical for these documents to be digitised before they are lost.

Objective of the Study
The study aims to examine funding, copyright issues and other challenges faced by the College of Health Science Library in digitising its materials and propose a model to facilitate digitisation at the College.

Literature review
The advancement in technology continues to put pressure on Academic libraries in Africa to go digital. With respect to this is a major challenge facing digital library projects in Africa; that is, the "readiness of academic libraries" concerning skills and knowledge to implement digital library services. This view is reinforced by Rosenberg (2006), who states that "skills in resources management, e-services development, full-text digitisation and teaching skills are lacking in African university libraries". According to Jasco (2002), there is increased demand for librarians with skills to initiate, manage and participate in digital library projects. The aim of digitising library materials is for preservation and easy

access by any user or researcher; hence digitisation makes the invisible become visible (Fabunmi et al, 2006; Rosenberg, 2006; Mbambo-Thata, 2007; Ezeani and Ezema, 2011).

Access to information and preservation of rare and unique materials underpin Academic Libraries digitisation. Not only are collections made accessible through digital surrogates as stipulated by Hughes (2004), but also digitised materials are of continuing value for research, learning, teaching, documentation and more importantly, public accountability. Digitisation also improves the global visibility of academic institutions as users worldwide can access one's institutional collections distantly. Systems have to be in place for any digitisation project to succeed. These processes involve project management, funding, selection of materials to digitise, legal issues (copyright); metadata, interoperability, and preservation. Any digitisation project will fail if these factors are not critically considered. The skills required for the digital age in African university libraries should address three main areas according to Chiware (2007) through training based on skills to handle resources, technology and context for digital interoperability.

Digitisation is composite and time-consuming. Therefore, there is the need for operational and effectual project management through budgeting, staff expertise and training, effective workflow, metadata processes and technicalities. These processes are crucial for any digitisation project. According to Chapman (2000), every digitisation project must have goals, planning and budgeting and the management of the workflow. In managing the digitisation project, accessibility and use of digitised materials are dependent on preservation, copyright, and management of metadata.

Deciding on which collection to select for digitisation is a very tedious task. Factors like copyright and cost need to be considered according to the library's priorities and goals. This can only be ascertained if there are policy guidelines to guide the digitisation process. In this direction, having a collection development plan for digital projects is necessary. Conversely, selection of collections to digitise must be driven by use.

Copyright, which is an important legal issue in any digitisation project must be one of the priorities to be considered during the whole process. Issues of fair use, ethical questions and intellectual property are binding when deciding to digitise one's collections. According to Lopatin (2006), libraries need to take into consideration whether or not materials to be digitised are protected by copyright or are in the public domain. Hughes (2004) explains that works can be freely used without paying royalties or asking permission if they are in the public domain. Most academic institutions for educational and research purposes use the principle of fair use. Notwithstanding, fair use is applicable

under the law for purposes of criticism, comment, news reporting, teaching, research and scholarship and this can be a daunting and confusing task.

Literature shows that digitisation is an important activity for libraries in the 21ˢᵗ century as it presents benefits for simultaneous access and use. Through digitisation, libraries can preserve fragile and original documents/materials, thereby making the libraries relevant in the technological age and most importantly projecting libraries and increasing the visibility of librarians (information professionals). However, its downsides such as quality assurance, integrity, authenticity, unauthorised access and use, metadata procedures, staff expertise, cost, indexes, copyright among others, remain inherent (Coyle, 2006; Chowdhury and Chowdhury, 2003). Yet, when priorities are set success can be achieved in the venture.

Research Methodology

Research methodology is the focus of a research process. In agreement with Ngulube (2015), research methodology gives direction to the researcher in making decisions on acquiring knowledge about the social phenomenon and getting answers to the research question(s) and achieving the objectives of a study. The qualitative method using a case study approach was adopted for the study. Connaway and Powell (2010) note that qualitative research tends to apply to a more holistic and natural approach to the resolution of a problem and gives more attention to the subjective aspects of human experiences and behaviour. Interviews were conducted with the management of the digitisation project, the Head of Technical Services and the Head of the College of Health Sciences library to understand better the issues of getting the digitisation unit well established and started. In addition to this, secondary sources of data were used to support the trends of digitisation and ethics in information use. Data collected was analysed using content analysis according to the objectives of the study.

Findings and Discussion

The findings of the study are discussed based on the objectives of the study.

Management priorities

Digitisation comes with a lot of advantages. One can search, browse and compare materials in useful and creative ways which provide easy access to diverse material and collections with varied searching facilities and less storage space (Hughes, 2004; Radovan, 2010). It is also possible to develop a digital surrogate of a rare or fragile original object. This means that people will have access to the object, and this will ensure that the original is not damaged by a lot of handling or mishandling. All these benefits of digitisation are outlined and management is aware of them. From the interview conducted, it was identified that management at the University had various priorities of

which digitisation was a part. Although digitisation is important, other equally important initiatives and activities, which need immediate attention, are prioritised. One reason given by the interviewees as associated with this problem was budgetary constraints. In an era when e-learning has become an inseparable part of education, and virtual campuses are growing worldwide, and information can be accessed and read in new, different and improved ways, digitisation has also become necessary and needs to be highly prioritised and given the needed support. In support of interviewees opinions, Tsebe (2005), identified management and organisational priorities and problems as serious issues undermining digitisation in Africa, and the urgent need for collaborative efforts between management; the university library and IT departments. Towards this direction, the Head of the Digitisation Project at the University of Ghana gave the assurance that they were going to collaborate with the college library and assist with some technological infrastructure and expertise to get the project started.

Funding
Digitisation is a capital-intensive endeavor and inherent in it are both the real cost and overhead cost. The cost of equipment and expertise (skilled staff) to embark on the project makes it cost draining on any institution that wants to undertake such a venture. There are indirect as well as direct costs. As part of priority measures according to Lesk (2005), it is necessary to consider what the worth of information is, and who is likely to be willing to pay to preserve digitised information. Hughes (2004) adds that the importance of focusing more on long-term strategies for digitisation is one of the ways to have it sustained. Funding to libraries are always inadequate and so understanding the costs of digitisation, in terms of time and financial resources, has a high impact on developing digitisation initiatives and programmes that will realise tangible and strategic benefits for institutions and their users; rather than opportunistic or short-term projects that are limited in their scope and emphasis (Hughes, 2004).

Respondents categorically stated budgetary constraints as a major hindrance to the advancement of digitisation project at the college. Regarding materials and equipment, they indicated they were handicapped.

Some studies have been carried out on the likely costs of digitisation. In a study carried out by Masakazi (2009) and Ezeani (2009), digitisation was seen as a capital-intensive venture that requires extensive resources concerning software and hardware technology, highly skilled personnel and other necessary infrastructure requirements such as adequate power supply which many African countries lack. To solve the problem of cost, Sanett (2002) has developed a cost model for the digitisation and preservation of digital contents and object. From the model, capital costs, direct operating costs and overhead costs (indirect operating costs) were outlined and identified as the cost that comes with digitisation and the future of the digital contents. The costs encompassed labour (staff),

space (workstation), materials and equipment (scanners, computers, UPS), application software among others.

Policy guidelines for digitisation
Every digitisation project must be done systematically. Issues in digitisation such as budgeting through to identifying the collection, metadata guidelines and copyright clearance all need to be outlined. Training procedures for digitisation staff also have to be instituted. In terms of policy guidelines for digitisation, they were non-existent (Though the digitisation project at Balme library is far advanced, they have no statutory policy guidelines for digitisation). The interviewees mentioned the fact that most of the faculty wanted almost every old book in the library digitised for easy access. If there were clearly stated policy guidelines, users would be informed on what materials the library has rights to digitise.

The Institute of Museum and Library Services (IMLS) survey in the USA (2001) showed that more than half of academic libraries are involved in digitisation projects; nonetheless, policies to control the format and execution of these digitisation projects are absent. It was therefore recommended that libraries need to implement policies regarding the standards, preservation, and selection of materials to be digitised. In agreement with Hughes (2004) four steps are critical in developing an institutional digitisation plan: collections survey; user needs analysis, cost-benefit analysis of the digitisation and a consideration of strategic and institutional issues such as grants and funding. Looking at the situation in most African countries, these plans are not clearly established, and so digitisation projects get started, and in the middle of their implementation, everything slows down. The situation at the College of Health Science Library is no different. For instance, a book scanner has been donated to the digitisation unit to kick start the project; however, because there are no strategic plans in place, nothing has been started because the other tools needed are not available as a result of lack of funds.

Copyright issues
Copyright outlines frontiers between legal actions and actions that risk costly legal predicament. Intellectual property rights are protected by the principle of copyright laws and licensing. These laws indeed do not operate in a void. Rather, they shape the ability of users to learn from each other through practices. Copyright laws vary from country to country. Once these laws are not obeyed people suffer from their consequences. These laws are highly regarded when it comes to digitisation. There are rules and exceptions to the extent to which one can use another person's intellectual inputs. In academic and research institutions, principles of fair use by creative commons license allow people to use other scholars' works to an extent depending on what the information will be used for (research or learning purposes or for commercial purposes). Where creative commons

license is not applicable, then there is the need for copyright clearance (Sturges, 2009; Creative Commons, 2010). One problem identified during the study is that there was pressure on the librarian to digitise some materials for use outside the library by faculty. However, most faculty members do not understand the effects of copyright violation on the library and to a larger extent, the College and University as a whole. In the absence of clearly stated policy guidelines for digitisation as stated by one interviewee, infringement of copyright laws cannot be overruled.

Recommendation

The following recommendations are made based on the findings of the study:

1. Management priorities: Digitisation of rare and historical materials should be a part of management priority to ensure access to information. Therefore, all the support needed to embark on such initiatives must be fully supported by management.

2. Funding: Budgeting is a crucial phase in any digitisation project. Funds have to be secured for each phase of the project, so it does not become stagnant. Management can apply for funding opportunities in organisations that are interested in such endeavours.

3. Policy guidelines for digitisation: There is the need for policy guidelines to help direct the digitisation project at the College of Health Sciences. By so doing priorities will be set as to what to digitise for the benefit of users and what not to digitise to cut down on cost.

4. Ethical aspects of digitisation (copyright): The ethical aspects of digitisation need to be clearly defined and explained to users. Issues of copyright clearance and intellectual property rights must be clearly outlined. The principles of ethics in information use must be critically enforced.

Figure 1: Proposed model for digitisation at the College of Health Science Library

The above model (figure 1) has been proposed to facilitate and direct digitisation workflow at the College of Health Science Library. The proposed model has been divided into six phases, and under each phase, there are various activities which must be followed, planned and done sequentially.

Phase 1: Project Management
The project management phase is where the operational effectiveness of the digitisation project is planned. Systems must be outlined about the whole activity, giving time lags for each process. Budgeting, staff expertise, workflow, metadata processes, technicalities, and policy guidelines have to be developed.

Phase 2: Funding
This phase is where the team has to decide where to source for funds for the digitisation project to commence. Funding can come from the mother institution or through grant facilities.

Phase 3: Collection Survey
This phase is where the selection of materials for digitisation is done. Things to be considered are user needs analysis, cost-benefit analysis and strategic or institutional interest.

Phase 4: Copyright Issues
Legal laws such as intellectual property rights have to be streamlined. Where there is the need for copyright clearance, it is important to sort them out, and where there is the need to apply the fair use principle under the common creative license, it needs to be done appropriately to avoid legal risks on the institution.

Phase 5: Interoperability
It is crucial to test whether the entire technological infrastructure is compatible. Software and hardware compatibility is paramount here. If not checked, the whole system can fail.

Phase 6: Preservation
One main focus of digitisation is for long-term preservation and access to information. Preservation measures such as software and hardware migration have to be instituted to enhance longevity and access to vital information by future generations.

Conclusion
Digitisation is an important means of preserving our rare materials and cultural heritage as well as enabling advanced research to be conducted on historical materials.

Digitisation offers many new and exciting ways for patrons (stakeholders and users) to access information and materials on a virtual platform. However, there is the need for institutions to exercise some caution, and not just jump on every digital vogue. It is important to assess the cost-analysis benefit to both patrons and stakeholders. The knowledge revolution the world is experiencing has made digitisation relevant. It is therefore important for librarians to convince management to see digitisation as not just a financial burden but as long-term benefit on access to information and knowledge for our patrons in their learning, teaching and research.

References

Bansode, S. (2008). Creation of digital library of manuscripts at Shivaji University, India. *Library Hi Tech News, 25*(1), 13-15.

Castelli, D. (2006). Digital libraries of the future − And the role of libraries. *Library Hi Tech, 24*(4), 496-503

Chiware, E. R. T. (2007). Training librarians for the digital age in African university libraries". Paper presented at World Library and Information Congress: 73rd IFLA General Conference and Council, Durban South Africa. Retrieved April 20, 2016 from www.ifla.org/iv/ifla73/satellite1programme-en.pdf

Chowdhury, G. G., & Chowdhury, S. (2003). *Introduction to Digital Libraries*. London: Facet Publishing.

Connaway, S. L., & Powell, R. R. (2010). *Basic research methods for librarians* (5th edition). California: ABC-CLIO.

Coyle, K. (2006). Mass digitization of books. *The Journal of Academic Librarianship*, *32*(6), 641-5.

Creative Commons (2010). *Metrics*. Retrieved June 30, 2017 from http://wiki.creativecommons.org/Metrics

Ebikabowei, E. B., Kayode, G. O., & Benedict, A. (2013). Digitization projects in university libraries in Nigeria: The journey so far. *Library Hi Tech News*, 30(9), 21 - 26. Retrieved June 20, 2016 from http://dx.doi.org/10.1108/LHTN-09-2013-0049

Ezeani, C. N. (2009). Digitizing projects in developing countries: The case of the University of Nigeria. *Library Hi Tech News*, 26(5/6),14-15.

Ezeani, C. N., & Ezema, I. J. (2011). Digitizing institutional research output of University of Nigeria, Nsukka. *Library Philosophy and Practice*. Retrieved July 2, 2016 from www.webpages.uidaho.edu/,mbolin/ezeaniezema.pdf

Hughes, L. M. (2004). *Digitizing collections: Strategic issues for the information manager*. London: Facet Publishing.

Institute of Musuem and Library Services (2003). Assessment of End-User Needs in IMLS-Funded Digitization Projects. Retrieved April 5, 2016 from: www.imls.gov/pdf/userneedsassessment.pdf

Jacso, P. (2002). Design and implementation of a course on digital librarianship, Proceedings of the 2nd ACM/IEEE-CS Joint Conference on Digital Libraries (JCDL), Portland, OR, USA, 13-17 July. Retrieved July 10, 2016 from http://lair.indiana.edu/papers/jacso.pdf

Lesk, M. (2005). *Understanding digital libraries*. San Francisco: Morgan Kaufman.

Lopatin, L. (2006). Library digitization projects, issues and guidelines: A survey of the literature. *Library Hi Tech*, *24*(2), 273-89.

Manzuch, Z. (2009). Monitoring digitisation: Lessons from previous experiences. *Journal of Documentation*, *65*(5), 768-96.

Mapulanga, P. (2013). Digitizing library resources and building digital repositories in the University of Malawi libraries. *The Electronic Library*, *31*(5), 635-647.

Masakazi, N. (2009). What is the value of digitizing South African arts, culture and heritage to its citizens? *E-Mzazi Information Society*. Retrieved June 15, 2016 from www.pnc.gov.zalermzanzi-issue

Mbambo-Thata, B. (2007). Building a Digital Library at the University of Zimbabwe: A Celebration of Team Work and Collaboration (Ed). Oxford: International Network for the Availability of Scientific Publications (INASP

Ngulube, P. (2015). Trends in research methodological procedures used in knowledge management studies. *African Journal of Library, Archives and Information Science*, *25*(.2), 125-143.

Omekwu, C. O., & Echezona, R. I. (2008). Emerging challenging and opportunities for Nigerian libraries in a global information system. Compendium of Paper, 46th Annual National Conference and Annual General Meeting, Kaduna, 1-6 June, 63-71.

Radovan, V. (2010). Public libraries in Croatia and the digitization challenge. *Library Review*, *59*(5), 325 – 340.

Rosenberg, D. (2006). Toward the digital library in Africa. *The Electronic Library*, *24*(3), 289-293

Sanett, S. (2002). Toward Developing a Framework of Cost Elements for Preserving Authentic Electronic Records into Perpetuity. *College and Research Libraries*, (63), 388-403. Retrieved August 5, 2016 from http://216.239.59.104/search?q=cache:EIOYY3oRiPcJ:www.ala.org/ala/acrl/acrlpubs/crljournal/backissues2002b/september02/sanett.pdf+toward+developing+a+framework+of+cost+elements+by+sanett&hl=en&ct=clnk&cd=1&gl=uk&ie=UTF-8

Smith, A. (1999). Why Digitize? Washington, DC: Council on Library and Information Resources.

Sturges, P. (2009). Information ethics in the twenty first century. *Australian Academic & Research Libraries*, *40*(4), 241-251, DOI: 10.1080/00048623.2009.10721415. Retrieved April 30, 2016 from http://dx.doi.org/10.1080/00048623.2009.10721415

Tsebe, J. (2005). Networking cultural heritage: Africa, paper presented at the World Library and Information Congress: 17th IFLA General Conference and Council, OSLO Norway, 14-18 August. Retrieved from www.ifla.org/ivi.ifla71/programme.ehtm

Waller, V., & McShane, I. (2008). Analysing the challenges for large public libraries in the twenty-first century: a case study of the State Library of Victoria in Australia. *First Monday*, 13(12). Retrieved May 2, 2016 from firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/viewArticle/2155/2060

ETHICS IN INFORMATION USE - THE ROLE OF INFORMATION PROFESSIONALS IN ACADEMIC AND RESEARCH LIBRARIES OF GHANA
BY

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Abstract

A survey was conducted on the ethics in information usage among 40 academic and research Library and Information Science (LIS) professionals from selected libraries in Kumasi. The aim of the survey was to investigate the ethical use of information by library and information professionals. The specific objectives were (i) to investigate the level of knowledge LIS professionals have on the ethics governing the use of information (ii) assess whether ethical principles are being applied in the selected libraries by information personnel (iii) assess the level of knowledge of LIS professionals on users knowledge of information ethics (IE)(iv) make recommendations for enhancing the ethics in information usage in the various libraries. Forty LIS professionals were randomly selected from ten Kumasi based academic and research libraries for the study. The results indicated that respondents have a fair knowledge of ethics in information use but applying these principles in the conduct of their work has not been on a regular basis. It was also realised that the level of working experience one had in the library did not necessarily translate into knowledge of Information ethics. It was therefore recommended that user education should be encouraged among (LIS) professionals who were also encouraged to enforce ethical principles within their organisations. The various institutions studied should also strengthen the research and ethics committee and set up desks to sensitise and create awareness among their users.

Keywords: Information Ethics, Information professionals, Research Libraries, Academic Libraries, Kumasi, Ghana

Introduction
In most countries, a system of laws codify and regulate ethical standards and provide a mechanism for holding people, organizations, and even governments accountable for their information use and any unethical activity that may be associated with it (Chuang and Chen, 1999).

Information ethics has been hugely affected by globalization, which is characterized by extensive use of information and communication technologies, an increasingly open society, greater sharing of information and also greater conflict among individuals and

societies in asserting their dominance over others. This has posed new challenges to information professionals of today, because they have to serve an increasingly diverse group of clientele. Fundamental questions about privacy, freedom of expression and the right to information and accessibility, among other issues also arise (Liton, 2015). As a result; library and information professionals are struggling to solve the problems related to the ethical use of information.

Mason (2016) describes libraries as repositories for humanity's knowledge. According to him libraries represent our past, our present, and our future, and are much more than storehouses for books. The information available in libraries includes many other forms of data that must be accessible to all people, regardless of education, age, or economic status. Retrieval of particular types of information requires specialized knowledge and database searches that are sometimes beyond the capabilities of many users, particularly university students and young researchers starting their university and research careers (Mason, 2016). Library and Information Science (LIS) professionals however are usually equipped with the knowledge and skills that are needed to retrieve such valuable information and they need to share that knowledge with users by instructing them on information retrieval methods. Other aspects of information use concern the ethical use of information regardless of form, format and purpose of use.

Statement of the Research Problem
Information ethics is essentially concerned with the question of who should have access to what information. The core issues of information ethics include intellectual freedom, equitable access to information, information privacy, and intellectual property. Advances in technology have made the general population more aware of these issues. But library professionals have been concerned with these issues for centuries. They have a very important role to play in ensuring that information is used ethically and the rules and guidelines covering information use are adhered to. Very little information exists on the knowledge of IE in Ghana by LIS professionals. This study seeks to find out whether information professionals in some selected institutions of higher learning have knowledge of the ethics governing the use of information and investigates how these are applied in their various libraries/information centres and to make this knowledge available for use by practitioners.

Objectives of the study
The objectives of the study are to:
- Assess the level of knowledge LIS professionals have on the ethics governing the use of information
- Examine whether ethical principles are being applied in the selected libraries by information professionals
- Assess the level of awareness LIS professionals had on users' knowledge in IE

⊙ Make recommendations for enhancing the ethics in information usage in the various libraries

Literature Review
Definition of Information Ethics
Ethics is a branch of philosophy that is concerned with moral principles of behaviour or conduct of individuals in society. It traces its history over the years as a discipline in library and information science, but the field has evolved over the years and been embraced by many other disciplines such as information and communication technology, cyber/Internet ethics, business, management and information systems, medicine, the philosophy of information and social epistemology (Himma and Tavani, 2008; Froehlich, 2004).

According to Wengert (2001) ethics define and provide ideas that sustain actions that are good and right in terms of obligation, fairness and benefits to society.Smith (1997) also argues that information ethics may be referred to as the umbrella name unifying network ethics, machine ethics, cyber ethics as well as areas of applied ethics in information science including library and information science. IE provides a critical framework for considering moral issues that concern information privacy and new environmental issues.

Information ethics for library and information professional also focuses on censorship, collection development, intellectual freedom, equitable access, information privacy, intellectual property and problem patrons (Mason, 1986; Hauptman, 1988; Fallis 2007). Another definition given by Floridi (2006) describes IE as the study of the moral issues arising from availability, accessibility and accuracy of information resources.

All the definitions discussed above follow almost the same trend and highlight the moral aspects of information ethics. Morality is however a subjective topic and efforts to analyse it must therefore be done empirically to avoid any biases in opinion.

Challenges Associated with Information Ethics
Challenges affecting the ethics of information use have been examined from many perspectives and by various authors such as Mason, (1986); Rubin (1991; 2001); Danielson, (1997); Froehlich, (1997); Bunge, (1999) and Smith, 2010**.** According to these authors, the challenges encountered in the application of IE are usually concerned with the choice and access to the material, quality of information, user rights and accuracy. Other challenging factors that LIS professional have to contend with are copyright and data protection issues, the protection of users' rights and information retrieval issues. The use and misuse of information by clients and even by LIS professionals themselves, personal ethics and professional codes of ethics are also challenges that have to be taken

into consideration. When it comes also to the application of ethical principles in libraries, one is often confronted with problems such as the concealment of information, misinformation of clients, divulging of classified information to unauthorised persons and dissemination of false information (Kaddu, 2010).

Fernandez – Molina (2000) cautions collection developers not to follow their own interest or that of any group of users, since suppressing selection may appear more like censorship situations thereby creating tension. Therefore, if selection decisions do not follow appropriate selection criteria, this may become a predicament in collection development and service delivery. The predicament is justifiable by the principles supporting selection or removal of materials considered harmful on the basis of religious, moral or other reasons.

Another challenge of IE in information service delivery is that accurate information must be supplied to the user regardless of the information professionals' stance on the content or finality of its use, (Smith, 2010) and it must be done at the right time, in the right quantity and in the right format (Mason (1986). These responsibilities involve a wide range of elements such as accepting those tasks that are within one's reach, providing the customer with a realistic forecast of what can be obtained and searching the best resources. For the client, maintaining the confidentiality of the material obtained and privacy to personal information are implicit. Since ethical problems are intertwined, there may be no clear way to resolve them individually. It is however important that attention is paid to each individual challenge and efforts made to address them.

Research Methodology
The study was conducted in the Kumasi Metropolis located in the Ashanti region of Ghana. Kumasi is home to two public universities, one Technical University and several private university colleges (over 10). A case study method was adopted for the research. The research was conducted between June 2015 and July 2016.

Sampling and Data Collection
A two – stage multi sampling technique was used for this study. The first stage used the purposive sampling technique to select ten research and academic libraries from within the Metropolis. There were four research libraries and six academic libraries involved in the study. The second stage involved the use of a random sampling technique to draw the sample size of forty (40) library and information science professionals from the ten selected academic and research libraries in the Metropolis.

Primary and secondary data were collected during the study. The primary data was collected through the administration of a questionnaire to all the respondents while the

secondary information included desk reviews, using tools such as the internet and e-resources available to the researchers. In all 40 questionnaires were sent out to the various libraries, however 85% (34) were received and analysed.

Results and discussion
Profile of Respondents
Table 1 shows the demographic characteristics of the respondents. The results indicate that 68% were males whiles 32% were females with age ranging between 20 to 60 years old. The dominating group was the 41- 50 years range (38%) followed by the 31 to 40 years group (29%), 51-60 (27%) and 20-30 (6%) The results also shows that majority (68%) of the respondents were Master's degree holders. Library professionals were the majority of respondents representing (71%) of the total respondents while para-professionals were 29%.

Table 1: Demographic characteristics of respondents

Variables	Frequency	Percentage
Gender		
Male	23	68
Female	11	32
Age		
20-30	2	6
31-40	10	29
41-50	13	38
51-60	9	27
Library Experience		
1-10	15	44
11-20	11	33
21-30	8	23
Professional Status		
Professionals	24	71
Para-professional	10	29
Highest Qualification		
MA/M.Phil.	23	68
BBA/B.Sc.	10	29
Post Graduate Diploma	1	3

Source: Field Survey, 2016

Level of Knowledge of LIS Professionals on the Ethics of Information Use

In accessing level of knowledge of LIS professionals on the ethics of information use, several factors have to be considered. Factors that were taken into consideration included but were not limited to the general understanding of IE by LIS professionals which is inherent in how they describe IE. Other factors include age, gender, level of education and work experience.

Description of Information Ethics by LIS Professionals

Respondents were asked to describe what they understood by information ethics in their own words. The various descriptions are summarised as follows:

- The appropriate use of information regarding the creation, management, dissemination and usage.
- Rules and regulations governing the use of information
- Standard code of ethics regarding the use of information.
- Ethical use of information resources
- The use of information whilst adhering to moral standards or codes.
- Avoiding plagiarism using information appropriately and legally
- Standards that govern the use of information in an organisation

Further probing of all respondents by the researchers showed that being able to describe information ethics did not necessarily translate into having a high level of knowledge in information ethics. It was realized however that the professionals interviewed, had a fair idea about IE such as censorship, collection development, intellectual freedom, equitable access, information privacy and intellectual property. Respondents attributed their vast knowledge on information ethics to regular attendance at conferences (46%) while 44% and 10% attributed it to regular course work they undertook in library school and online studies (Table 2).

Table 2: Source of Information of IE

Source of Info.	Frequency	Percentage
Conference	16	46
Library School	15	44
Online Studies	3	10

Source: Field survey, 2016

This result is confirmed by Fallis' (2007) who posits that good knowledge of legal and ethical issues of information service delivery may be acquired through formal education

and recommended that courses in information ethics must be part of the education of LIS professionals.

Factors influencing Knowledge on Information Ethics

Effect of age, gender and work experience on knowledge of IE
In this study, the Probitmodel (Table 3) was used to test whether there was any relationship between the age of LIS professionals and level of knowledge in information ethics. The results indicate that there was a positive significant relationship at 5 percent level between level of knowledge and the age of professionals. However, gender had a significant negative relationship with the level of knowledge in information ethics at 10 percent level. This implies that female LIS professionals in this study appeared to be more knowledgeable in information ethics than their male counterparts.

Table 3: Factors influencing Knowledge on Information Ethics

Variable	Coefficient	SE	*P-val*
Age	1.018	0.493	0.039
Gender	-1.146	0.617	0.063
Library Experience	0.018	0.085	0.836

Relationship between length of service (library experience) and level of knowledge of ethics
Kegans (2006) describes work experience as the amount of full-time or part-time on-the-job experience. In a study on nursing students, he concluded that work experience, did not provide evidence of the ability to predict the development of ethics in Baccalaureate nursing students. Figure 1 indicates the relationship between library experience and level of knowledge in information ethics. It was revealed that professionals who had worked between 1-10 years had moderate to high knowledge as compared to the other range of length of services. This by implication means that library experience was not a factor in determining the level of knowledge in IE.

These results are rather surprising because even though the results suggest that the older you are the more knowledgeable you are on ethics, there was however no positive correlation between length of service and knowledge. In fact those who had worked for 1-10 years in the library scored higher levels in knowledge than the others. The reason behind this could be due to recent emphasis on ethics in library school curricula which may have been absent during old school days. It therefore confirms Kegan's (2006) findings that work experience, does not provide evidence of the ability to predict the development of work ethic characteristics.

Table 4: Relationship between Length of Service and Level of Knowledge of LIS Professionals

Length of service	No Knowledge	Very Low Knowledge	Low Knowledge	Moderate Knowledge	High Knowledge	Total
1-10 yrs.	2	0	4	8	5	19
11-20 yrs.	1	0	0	6	5	12
21-32 yrs.	0	1	0	0	2	3
Total	**3**	**1**	**4**	**14**	**12**	**34**

Application of ethical principles in the selected libraries by information Personnel

Information professionals have the responsibility of managing and applying data, information and professional knowledge in an ethical setting. Such professionals take a holistic view of their role in information and knowledge management in their organizations and are concerned with information and knowledge through all stages of their life cycle (Abels et al, 2003). However, information professionals often specialize in specific areas and do not therefore possess all the competencies they need to the same degree in order to perform their duties.

In applying ethical principles in the library therefore, information professionals should be minded by their own professional code of ethics and the code of ethics of their own organisations. Key competencies to execute this role therefore may include but not limited to integrity, diligence, honesty, discretion and confidentiality that helps them to create and sustain an environment that facilitates mutual trust among employers, clients or other individuals served (Abels et al, 2003).

This study attempted to ascertain whether LIS professionals were aware of information ethics and whether they were able to apply ethical principles in their libraries. The ability of LIS professionals to apply these principles in their libraries depended to a large extent on their key competencies discussed above and their ability to recognize ethical issues relative to information handling which may include privacy and confidentiality, information security, intellectual property and copyright, collection development and intellectual freedom.

The results provide evidence that LIS professionals in the selected libraries applied different aspects of ethics in their libraries. On information security and adherence to intellectual property (IP) rights all respondents (100%) agreed that they enforced copyright rules and did not allow patrons to copy whole books or journals. Majority (91%) stated that they always checked the copyright requirements of the materials before uploading them on their institutional repositories (IR).

They claimed also that patrons are often reminded to acknowledge their sources of information. On collection development, 88% of respondents indicated that their collections were not developed on the basis of biases such as religion, politics or race while 12% were biased in terms of book selection. Majority of respondents (74%) did not agree to the concept of allowing patrons to visit any site they wanted. They were rather in support of blocking suspicious websites such as pornographic, racist and terrorist sites while 26% did not support the blocking of such suspicious sites.

According to Library Bill of Rights (ALA 1996) the primary goal of the library profession is to facilitate access to all points of view on current and historical issues. All proposals for restricted access should be carefully scrutinized to ensure that the purpose is not to suppress a viewpoint or to place a barrier between users and content. Libraries must maintain policies and procedures that serve the diverse needs of their users and protect the First Amendment right to receive information. Thirty (88%) agreed that materials should be properly evaluated before shelving while only 4 (12%) thought otherwise.

Level of Knowledge of LIS professionals on Library Users application of Information

Ethics

To determine awareness of respondents on users' level of knowledge and application of IE in libraries, respondents were asked to indicate their awareness of users' application of IE and level of knowledge. On awareness, 15 (44%) indicated that they were aware users in their libraries applied IE while 56% were either not aware or not sure. The level of knowledge ranged from moderate to high knowledge (65%) while 35% ranged from no knowledge to very low knowledge.

When respondents were asked to indicate how they would assist users to apply IE in their libraries, respondents suggested that they would follow enforcement laws governing the use of information ethics and guide users in the application of same.They also suggested that they would be vigilant on users, participate in user education and help with the organization of information literacy training seminars and workshops, One-on-one discussions, user orientation and online training and teaching of information literacy skills. According to them LIS professionals should be encouraged to undertake continuous professional development especially in the legal and ethical issues of information delivery.

Awareness of Information Policy, its Content and LIS Professional Code of Ethics

Braman, (2011) defines information policy as a combination of legislation, procedure, guidelines which regulate the production, management and use of information which shape the role of information in society. The importance of information policy to library and information centers can therefore not be overemphasized.

Respondents were asked to indicate if they were aware of any policy document on information use in their organisations and indicate the contents of the policy in terms of information ethics and professional code of ethics for LIS professionals. Eight respondents indicated their organisations had information policy document. However, only 6 indicated that the policy document contained information ethics. On professional code of ethics for LIS professionals, 68% respondents were aware of code of ethics for LIS professionals. Information policy and professional code of ethics are supposed to be guides for practising in the field of library and information delivery. It is therefore very important to have laid down rules and regulations guiding the activity of LIS professional. However, the results revealed that majority of libraries did not have any policy document on information usage.

Figure 2: Information Policy and Professional Code of Ethics
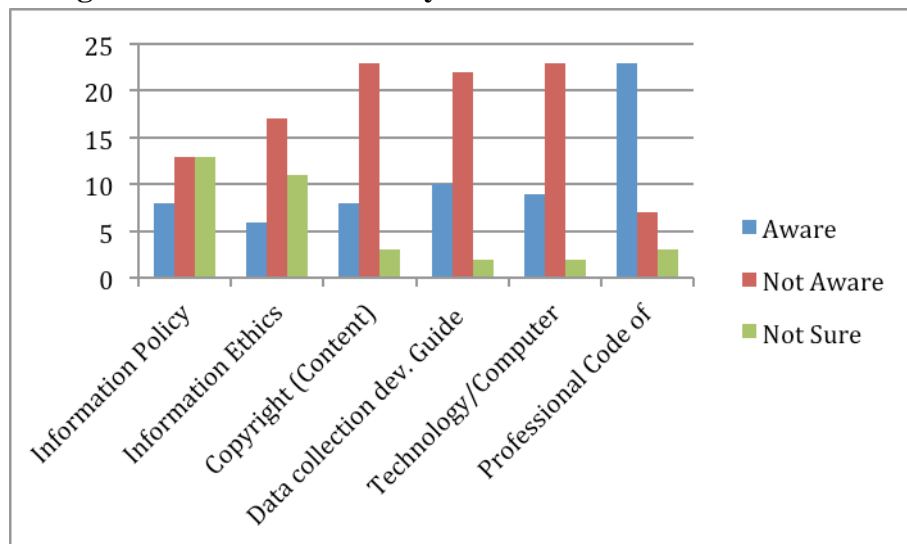
Conclusion and Recommendations

Information service delivery of LIS professionals in academic and research libraries is guided by ethical principles that govern their behaviour with respect to what is right or wrong while ensuring fairness, equity and justice. The overall assessments given by this study tend to suggest that LIS professionals have a fair level of knowledge of ethical principles for library and information service delivery, a situation that impacts positively on users of library and information services. The study has therefore brought to bear the importance of applying ethical principles in the provision of library services to various

clients. This also means that LIS professionals must keep abreast of all new developments in the sector thereby confirming the need for continuing information literacy training for both professionals and users.

It has also revealed that length of service does not necessarily imply high knowledge in ethical issues. LIS professionals must rather be exposed to emerging issues on a regular basis.

In the light of the above, the researchers recommend the following:

1. The application of ethical issues in the library environment should be a priority consideration in all libraries in Ghana.
2. Library and information science educators must do their best to impart knowledge on the significance of ethics in the profession.
3. Staff should participate in training to develop relevant skills and upgrade their knowledge.
4. The provision of code of ethics for the profession is important and must be championed by professionals and the association.
5. User education should be encouraged among information professionals
6. Professionals should be encouraged to enforce ethical principles within their organisations.
7. The various organisations studied and indeed all libraries should also strengthen the research and ethics committee and set up desks to sensitise and create awareness among their users.

References

Abels, E., Jones, R., Latham, J., Magnoni, D., & Marshall, G. J. (2003) *Competencies for Information Professionals of the 21st Century*. Retrieved September 14, 2016 from www.sla.org/competenciesportal

American Library Association (1996) Library Bill of Right. Retrieved August 23, 2016 from http://www.ala.org/advocacy/sites/ala.org.advocacy/files/content/LBORwithInter pretations.pdf

Liton, M. A. (2015). *Information Ethics and Library Professionals of Bangladesh: Some Observations.* Retrieved May 12, 2016, from http://www.consalxvi.org/sites/default/files/3-Ahiduzzaman%20Liton.pdf

Braman, S. (2011). Defining information policy. *Journal of Information Policy, 1*(1), 1-5.

Bunge, C. A. (1999). Ethics and the reference librarian. *Reference Librarian*, *66*, 25-44.

Chuang, C. & Chen, J. C. (1999). Issues in information ethics and educational policies for the coming age. *Journal of Industrial Technology, 15*(4) 2-6.

Danielson, E. S. (1997). Ethics and reference services. *Reference Librarian, 26*(56), 107 – 124.

Fallis, D. (2007), Information ethics for 21st century library professionals. *Library Hi Tech*, Vol. 25 No.1, pp. 23 – 36.

Fernandez-Molina, J. C. (2000), Ethical concerns and their place in the training of information professional. *Journal of Spanish Research on Information Science, 1*(2), 1-8. Retrieved June 30, 2016 from http://pendientedemigracion.ucm.es/info/multidoc/publicaciones/journal/pdf/ethic al-concerns.pdf

Froehlich, T. (2004). A brief history of information ethics *Textos Universitaris de Biblioteconomia i documentaciónúmero*13, Desembre 2004.

Froehlich, T. J. (1997), *Survey and analysis of the major ethical and legal issues facing library and information services*. UNESCO Report for International Federation of Library Associations (IFLA). Munich. G.K. Saur.

Floridi, L. (2006) Information ethics, its nature and scope information ethics, its nature and scope. *SIGCAS Computers and Society, 36*(3)

Hauptman, R. (1988), *Ethical challenges in librarianship,* Oryx Press, Phoenix, AZ.

Himma, K. E. and Tavani H. T. (2008) *The Handbook of Information and Computer Ethics*. John Wiley & Sons, Inc. Retrieved September 17, 2016 from http://samples.sainsburysebooks.co.uk/9780470281802_sample_383244.pdf

Kaddu, S. B. (2007). Information ethics: A student's perspective. *International Review of Information Ethics*, *7*(9), 1-6.

Liton, Md. Ahiduzzaman (2015). *Information Ethics and Library Professionals of Bangladesh: Some Observations,* Paper presented at the16th Congress of Southeast Asian Librarians Meeting and General Conference (CONSAL XVI), 10 - 13 June 2015, Bangkok International Trade and Exhibition Centre (BITEC) Bang-Na, Bangkok, Thailand.

Markkula Centre for Applied Ethics. (2010). What is ethics. *Issues in Ethics*, (1) 1987 (revised 2010), Retrieved September 17, 2016 from http://www.scu.edu/ethics/practicing/decision/whatis ethics.html

Mason, R. O. (1986). Four ethical issues of the information age, *Management Information Systems Quarterly*, *10*(I), 5-12.

Mason, M. K. (2016) *Ethics of Librarianship: Libraries, Intellectual Freedom, and Censorship in the Age of Technology*. Retrieved June 11, 2016 from http://www.moyak.com/papers/ethics-librarianship.html

Reitz, J. M., (2004). Ethics and Information. In *Dictionary for Library and Information Science*. Retrieved September 6, 2016 from http://www.slideshare.net/stcclibrary/information-ethics-16296847

Rubin, R. (1991). Ethical issues in library personnel management. *Journal of Library Administration*, *14*(4)1-16.

Rubin, R. (2001). *Ethical aspects of reference service. Reference and information services: An introduction.* R. E. Boppand L.C. Smith. 3rd Ed. Libraries Unlimited, Englewood, Colorado, 28 – 46.

Smith, M. M. (1997). Information ethics*, Annual Review of Information Science and Technology*, M.E. Williams. Ed. Medford, Information Today, New Jersey, 339 – 366.

Smith, M. M. (2001). Information ethics. *Advances in librarianship, 25*, 29-66**.**

Smith, M. (2010). *The Ethics of information provision*. Retrieved June 11, 2016 from http://www.libsci.sc.edu/bob/class/cli724/SpecialLibrariesHandbook/Ethics.htm *Library and Information Science Research, 27*(4), 513-533.

Wengert, R. (2001). Some ethical aspects of being information professional. *Library Trends*, *49*(3), 486-509, Retrieved April 3, 2016 from http://findarticles.com/articles/mi/m/1387/15-3-349/91

TAKING CONTINUING PROFESSIONAL DEVELOPMENT TO THE NEXT LEVEL IN CONTEMPORARY TIMES: A TWO- FACTOR CULTURE PERSPECTIVE

BY

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Abstract

Continuing Profession Development (CPD) is the means by which members of professional associations maintain, improve and broaden their skills, knowledge, and personal qualities required in their professional lives. Using a conceptual approach, a two-factor model is used to explore the link between CPD and culture in Africa. The model identifies two types of cultural factors; cultural enablers and cultural inhibitors in Africa. Cultural enablers refer to cultural factors that are likely to facilitate effective CPD for excellent performance, whereas cultural inhibitors are factors that have the potential to impede effective CPD. The model suggests that individual employees and managers in Africa must design and implement the appropriate CPD strategies that will enable them take advantage of the cultural enablers as well as adopt strategies to mitigate the negative impact of cultural inhibitors throughout the CPD process. The models implication for research and practice are discussed.

Keywords: Culture, Continuing Professional Development, Anglophone West Africa.

Introduction

Organisations go through the hiring process with the aim of getting the right employees for effective job performance. Some of the important elements considered in the hiring process are; an individual's knowledge, skills and attitudes which form the basis for determining his job performance, subsequent development and career progression (Mathis & Jackson, 2004; Crain, 2009; Gomez, et al., 2007; Morris & Calamai, 2009)). Although the individual joins an organisation with some knowledge and skills, the pace at which change is occurring in every area of specialisation makes the shelf life of such knowledge and skills shorter than before and therefore the need for Continuing Professional Development (CPD). The knowledge, skills and talents do not remain the same and become irrelevant if they are not freshened through CPD (DiMauro 2000, Konkol 2005; Meggison & Whitaker, 2007; Ofosu, 2011). CPD is therefore an approach that supports lifelong learning (Borjesson et al. 2007). In some professions, a proof of continuing education is required of an individual to retain his job and for career progression and sometimes part of contractual rights at work (Beardwell & Hollden 1998;

Boud & Hager 2012). Apart from the challenge of the dynamic nature of the work environment, there are other contextual factors such as the corporate and national cultures which have the potential to influence the perception and attitude of individuals and organisations towards CPD (Mumford, 1988).

CPD is the planned process by which individuals update, maintain, broaden and develop their professional knowledge, skills and practical experience through engaging in continuous learning related to his profession (Meggison & Whitaker, 2007; CPD Institute, 2015). CPD can also be viewed as a commitment to continuing improvement and change by the application of self-managed learning techniques, supplemented where appropriate by deliberate, planned exposure to external learning sources in order to gain knowledge that has not been acquired through formal education or on-the-job (Armstrong, 2005; Pilbeam & Corbridge, 2006; Schostak, 2009). CPD can therefore be viewed as a planned process aimed at equipping members of a profession with up-to-date competencies required for coping with demands of their professional practice.

Cultural practices have the potential to influence individual's perception of CPD in Africa. As a result, individuals are more inclined to meet the demands of their kith and kin at the expense of their own professional development. Employees then expect organisations in which they work to be responsible for their development and so rely on the general training and development programmes offered by the organisation. Such practices affect the pace and level of professional knowledge of employees. CPD must therefore be a priority and a self-initiated process for purposes of making employees fit for practice at any point in time.

CPD, which is one of the human resource development practices, is critical for the career development of the individual and the development of the organisation in which he works. Research on management theories that have established the link between culture and human resource development practices has received increased attention in most developed countries like United States, Europe, Australia etc., but the extent to which these theories and findings can be generalised to other places outside the Western context such as Africa has not received sufficient attention (Nkomo, Zoogah & Acquah, 2015; Tsui, 2004 as cited in Williamson & Holmes, 2015). Few studies have focused on developing countries and this could perhaps be due to their underdeveloped nature. However, recent studies and statistics show increasing economic opportunities in Africa which require a competent workforce capable of coping with the demands of a growing economy (Hatch, Becker, & van Zyl, 2011). According to the African Union (2012) Africa has fifty-four countries. These fifty-four countries seem to have more similarities than differences (Kamoche, 2011; Kudonoo, 2013; Nzelibe, 1986) and the extent to which these cultural factors influence human resources development practices such as CPD in Africa is still unclear. For example, there are reports of unethical practices such

as corruption, nepotism, and family influence in African governments and state-owned organisations and sometimes private sector organisations (Kudonoo & Tsedzah, 2014). As a result, it is important for research that helps to explore the effect of some of the cultural factors on management practices such as CPD in Africa. In this paper, a two-factor model comprising cultural enablers and cultural inhibitors is proposed to explore the influence of the corporate and national cultures on CPD in Africa. The model suggests that managers should design policies and strategies that could enhance the positive effects of cultural enablers while mitigating the negative impact of cultural inhibitors. Organisations should have policies regarding learning opportunities, clear procedures for requesting support for learning, plans that allow individuals the opportunity for off-the job CPD, and opportunity to transfer what has been learnt for purposes of reinforcement (Beardwell &Holden, 1998; Schostak, 2009).

CPD in the 21st Century

The 21st century is characterised by advancement in the areas of science and technology and this has implications for organisations. For example, customers are making request that requires all professionals to be abreast with current trends. In a study of library staff in Australia by Sayer (2012) he identified some challenges of library staff in contemporary times as: new and emerging technologies, managing e-resources, demonstrating the value, relevance and return on investment for libraries, library design and space planning, copyright compliance, information and digital literacy, understanding users' needs, digital rights management and institutional repositories. These challenges arise because librarians are intermediaries between users and library resources. These challenges reinforce the need for CPD. Any individual who intends to stay in a profession must take advantage of opportunities for learning in order to be abreast with knowledge and skills required in contemporary times and any employer who intends to retain his employees must also provide CPD opportunities (Munford, 1988). The relationship between the employer and employee during CPD should be that of collaboration aimed at ensuring that individual employees possess the skills needed to ensure efficiency and effectiveness in practice.

The value of an organisation's human resources appreciates when they are nurtured through effective human resource development practices but depreciates when not nurtured and constantly used (Becker, 1964) There is therefore the need for policies and systems that ensure effective CPD for sustained success and competitive advantage. Creating learning centres that facilitate collaborative research between professionals to address profession specific issues and generate knowledge for future use is paramount (Mohrman, Mohrman, Cohen & Winby, 2008; Tenkasi & Mohrman, 1999). Clear understanding of organisation's strategies by all employees is also very important because it enables everyone to continually develop themselves in order to have the knowledge and skills required to be able to cope with the demands of the ever- changing

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world of work. According to Lawler, Worley & Creelman, (2011), nurturing of employees on the core values of the profession and specific technical skills are necessary for survival.

Specifically, CPD ensures that an individual's capabilities keep pace with the current standards in one's profession, helps one to maintain and enhance the knowledge and skills that he needs in order to deliver professional service, facilitates one's ability to make meaningful contribution to the team in which one works, facilitates career advancement, and opens up new possibilities and new knowledge. In this regard, CPD should not be under estimated and should be viewed as a lifelong requirement for every professional (Beardwell & Holden 1998; Megginson & Whitaker 2007).

Documentation is required in CPD because it is the means through which an individual is able to keep track of his professional development; regardless of whether he remains in the same organisation or changes his job. Apart from the relevance of documentation of CPD to the individual, it is also relevant in determining an individual's effort toward acquiring up-to-date knowledge, skills and experiences required to make him fit to practice in a profession.

For CPD to be effective and efficient and for it to benefit the employer, the profession and the employee, it must be tailored to the specificities and standards required of the profession and in line with the vision of the organisation. Again, to make CPD effective it must be personalised, relevant, sustained, supported and collaborative. CPD is personalised when it is built on identified needs and requirements rather than a 'one size fits all' approach. Individuals should be responsible for planning and controlling their own professional development where learning is viewed as an integral part of work goals rather than an additional burden. CPD is also relevant when it relates to the area of specialisation and the needs of customers. CPD must also be planned and organised in a manner that ensures that it is relevant to the job requirements of individuals as well as provide opportunities for support from more experienced persons in the profession through mentoring and coaching. Another principle for effective CPD is that it should be sustained through practice because new skills and ideas take time to hold and experimentation and refinement is the best way to embed new ideas. Finally, CPD should be a collaborative effort between the individual and other professionals within the field (Adanu, 2007). For purposes of ensuring that employees are transformed into engaged, productive and committed members of organisations, there is the need to lay emphasis on networking (Bartlett & Ghoshal, 2002; Meggison & Whitaker, 2007, Adanu, 2007). These practices enable individuals to learn from more experienced persons within the profession so as to ensure that quality standards are developed and maintained within the profession. Networking promotes knowledge sharing, working as a team that is

supportive and encourages individuals to acquire the knowledge they need to effectively function in their profession. Senior management's perception about the importance of CPD also contributes immensely towards the networking process because they must look beyond the economic goals of the organisation and encourage practices that view individuals as social beings that need meaningful interaction needed for achieving best results (Bartlett & Ghoshal, 2002; Crain, 2009).

The activities and opportunities for CPD include; attending professional conferences, training courses and workshops, online courses, shadowing a colleague, mentoring, international visits, reading journals and magazines, distance learning programmes, independent self-study, and job rotation. There is therefore no one way of CPD but it depends on the individuals learning style and personal preferences (Schostak, 2009; Schostak, et al., 2010).

CPD can be viewed as a four-stage process of planning, implementation, evaluation and reflection. Planning involves assessing one's current skills, identifying learning needs, defining expected learning outcomes with dates and milestones, identifying appropriate learning activities and resources required. The second stage, which is implementation, requires undertaking learning activities which could be formal or informal. Both the planning and implementation could be done by only the individual or in collaboration with the employer. However, a CPD that is initiated and driven by the individual's desire to develop and supported by the employer has a higher propensity to succeed than when both parties do not collaborate (Adanu, 2007). CPD, which is a continuing activity, means an individual should always take advantage of every opportunity to learn something new in his profession. The third stage is evaluation; which involves a assessing the actual outcomes and work practices to gather evidence to support improved work practice. In the last stage, which is reflection, the professional reflects on the totality of his practice in order to determine the 'how' and the 'why' of what needs to be done. In order to identify further needs, one needs to ask questions such as; what difference have these activities made to me, my job, my colleagues and my career goals? What are the learning gaps that need to be filled in my subsequent plans, what opportunities are available and what help or resources do I need? (Schostak et al., 2010)

Earlier researchers have indicated the benefits of CPD to the individual, the employer, professional association and the nation as a whole (Sadler Smith et al, 2000, Adanu, 2007; Schostak et al. 2010). The three general benefits of CPD for individuals are updating (maintenance), competence (survival) and enhanced mobility (Sadler Smith et al, 2000). Specific benefits include; self confidence and credibility, potential to earn more, achievement of career goals, ability to cope positively with change, being more effective and efficient, for an individual's development within a profession and for personal learning needs aimed at filling a gap (Beardwell & Holden, 1998; Schostak et

al., 2010). To the employer, CPD helps to keep employee skills and knowledge up-to-date, helps in succession planning, a means of retraining staff to ensure their organisations have a competitive edge and a means of engendering employee commitment that helps to reduce employee turnover (Meggison & Whitaker, 2007; Beardwell & Holden, 1998). In view of the indispensable role of CPD in any profession, Schostak (2009: 33) notes that, "the vital role of CPD is to ensure that the everyday practice of a professional is best practice". Because of the benefits derived from effective CPD's, Adanu (2007) in a study of library professionals in state-owned libraries in Ghana recommended the need for policies and management styles that make them learning organisations.

Link between Africa's Culture and CPD
Various definitions of culture exist. For example, culture is defined as the collective programming of the mind that distinguishes the members of one group or a category of people from others (Hofstede, Hofstede & Minkov, 2010). A most often used definition of culture is a pattern of shared basic assumptions, learned by a group as it solves its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (Schein, 1992). Culture can therefore be seen a way of life of a people and as a normative glue that binds people together and creates an environment that enables people to understand each other and thereby acting in socially appropriate ways.

The popularity of the relevance of culture as a factor that influences management activities in organisations was founded on the work of Peters and Waterman (1982) who intimated the pivotal role of culture in every aspect of an organisations life. Subsequent to the work of Peters and Waterman include others such as Schein (1992), Macrcoulides and Heck (1993), and Denison and Mishra (1995). Considering the accelerated rate of change in the 21st century, attention needs to be paid to cultural practices in Africa that inhibit their ability to become responsive, as well as take advantage of the enablers in order to cope with the demands of the of the 21st Century. Consequently, there is the need for effective CPD, which takes cognisance of such inhibitors and develop appropriate strategies in taking advantage of the enablers to meet the demands of both the internal and external environments. For instance, collectivism in Africa could promote effective team work whereas time elasticity could slow down decision making processes leading to unnecessary delays in getting things done in such societies as well as organisations. A society's culture therefore, influences organisations existing within them and their human resource management practices (Schein, 1999).
  Culture is what a group learns over a period of time
Because there are both similarities and differences in the cultural practices of Africa, managers need to understand the uniqueness and complexity of these cross-cultural

dynamics (Jackson, 2002; James, 2004; Kamochie, 2011; Mufune, 2003). Because there are more similarities than differences in the cultural practices of Africa, this paper refers to Africa as an entity. The similarities include filial piety, a quest for harmony, paternalism, extended family system obligations, titles, and formality (Kamoche, 2011; Kudonoo, 2013; Nzelibe, 1986). The differences include their level of social, political and economic development and population (Kudonoo, 2013).

Given high relevance of CPD in the 21st century, this paper is important for organisations in Africa because it clearly demonstrates the link between the culture of Africa and CPD and how it can be managed to minimise the impact of negative cultural practices that can inhibit effective CPD needed for increased productivity, sustained success, as well as gain competitive advantage. Africa needs unique CPD practices that take advantage of the positive aspects of corporate and national cultures and mitigate the effects of cultural practices that inhibit effective CPD.

Cultural Enablers and Inhibitors in Africa
Based on the discussion of the link between the culture of Africa and CPD, one realises that some cultural factors could facilitate human resource development practices such as CPD that has benefits for the individual, profession and the organisation as a whole, whereas others cultural practices may impede CPD of the individual. The focus is on both individual-level cultural values and organisation-wide cultural values because the influence of cultural values could be different at each level. An investigation of individual-level cultural values provides a more person specific prescription and that of organisation-level investigation provides a context-specific description within which individuals operate. In the context of Africa, where modern work is relatively recent, employees may have mixed attitudes and behaviours at work. The establishment of modern work places such as factories, educational institutions, health facilities in Africa has brought to the fore a dichotomy between the values of an individual and expected work behaviours and attitudes required in the formal sector (Schein, 2010). In this paper, two types of cultural factors affecting specifically employees in the Africa are identified; cultural enablers and cultural inhibitors (see Table 1). Whereas cultural enablers facilitate positive work behaviour, cultural inhibitors impede effective work behaviour.

Table 1: Cultural enablers and inhibitors in Africa

Cultural Enablers	Cultural Inhibitors
1). Collectivism:	**1). Deference for authority:**
a) Interdependence/collaboration	a) Bureaucratic decision making process
b) Teambuilding	b) Autocratic leadership style
c) Group welfare which decreases intra	c) Centralised decision making

group conflict because of subordination of personal interest d) In-group harmony more than conflict when dealing with uncertainty.	d) Lack of employee empowerment e) Considerable dependence of subordinates on bosses f) There is emphasis on protocol, extreme politeness, and a slower pace of life.
2). Respect for hierarchy, titles and age: a) Respect for authority, b) Facilitates the establishment of discipline, c) Enables employees to work hard d) Age and wisdom are positively related which gives rise to respect for authority.	**2). Time elasticity:** a) Slows down decision making process, b) Tardiness, c) Low productivity, d) Slows down workflow e) Looking for unanimity before acting creates a reluctance to contradict or challenge the system.
3). Emphasis on interpersonal relations: a) Generates trust, b) Creates loyalty, c) Organisational citizenship, d) Fosters friendly work environment.	**3). Social obligations/expectation:** a) Absenteeism –compelled to take time from work to respond to external family demands. e.g. outdooring, weddings, funerals, attending to the sick, etc. b) Corruption –compelled to spend more than one earns in order to meet the financial needs of extended family members
4). Emphasis on tradition and honour a) Facilitates the generation of a sense of commitment b) Gives a sense of dignity in service	**4). Negative Attitude Towards Work:** a) Tendency to disengage oneself with the notion that the organisation is not one's father's property; b) Apathy –Ineffective management of organisation's resources. e.g. money, machines, materials, office building, time, etc.
	5). Solidarity tax –can lead to: **a)** Corruption – the belief that the family took care of you and so you must also contribute to meet the needs of external family members**.**
	6). Nepotism: a) Affects the CPD process by choosing close relatives and friends instead of

	the right person for CPD programmes b) Stifles personal effort, c) Affects disciplinary process –tendency to overlook grievous offense committed by an employee who is a family member or a friend. d) Ethnocentrism- blinds managers to the abilities and contributions of employee from other cultures e) Preferential treatment of one's own kind
	7). High spiritual belief –Mysticism Cosmic Justice: Attributes every occurrence in the CPD process to a supreme being which: a) Affects discipline, b) Stifles personal effort, creativity, innovativeness and risk-taking. c) Makes individuals vulnerable –those with "powers" have the tendency to manipulate those without. d) Use quality working hours to pray rather than work. e) Inhibits self-evaluation/self-reflection –instead of identifying the root causes of failures/inefficiencies it is attributed to the supernatural f) Influence others through supernatural forces
	8). lack of enforcement of organisational policies, procedures, laws/rules: a) Often, laws are openly broken.

Source: Researcher's Construct, 2017

Cultural Enablers

Cultural enablers are cultural factors that facilitate the display of positive attitudes and behaviours that could improve productivity and work performance. Table 1 shows examples of the cultural enablers and inhibitors identified. This paper posits that the cultural enablers are likely to positively influence employee attitudes, behaviours and management practices because the Africa culture is collectivistic (Hofstede, 1980; Hofstede, Hofstede & Minkov, 2010). Collectivism refers to a way of life characterised

by collaboration, interdependence, unity, group welfare, and in-group harmony and subordination of personal interest (Hofstede, 1980). In Africa, such cultural values could encourage teamwork, the sense of group-welfare, collaboration, cooperation, and reduce interpersonal conflicts, which are cultural enablers that could facilitate effective CPD. Emphasis on interpersonal relations is also perceived as a cultural enabler. In Africa, people emphasise having excellent relations with peers, family members and colleagues (Edoho, 2001; Nnadozie, 2001). In the workplace, this could translate into having a harmonious and friendly work environment needed for effective CPD. The cultures of collectivism helps to make individuals to accept and adopt group goals and once they accept and adopt the group goals, they identify with the goals and work towards their success which leads to higher levels of organisational commitment and learning (Clugston et al., 2000). In spite of the fact that the collectivist culture of Africa fosters collaboration (Hofstede, 1980), it is undermined by ethnocentrism, which divides people because the collaboration is between close relatives and other associates rather than towards achieving organisational objectives (Nnadozie, 2001). Accordingly, there is the need to put mechanisms in place to ensure that networking is based on achievement of not only individual CPD goals but in line with organisational policies and procedures. As indicated in Table 1, good interpersonal relations promote trust, create loyalty, enhance organisational citizenship behaviour (OCB) foster a friendly work environment, and facilitate personal bond among employees (Axelrod, 2010; Coffey, Cook & Hunsaker, 1994; Desivilya & Eizen, 2005; Shin, 2005). In such an environment, one is likely to have individuals they can depend on for support in their CPD agenda.

A positive value such as 'Respect for Authority.' could facilitate discipline and foster hard work. Respect for authority, could also be exploited in organisations by demanding exemplary lives from leaders. Respect for authority is also likely to ensure that individual's follow laid down procedures in achieving their CPD goals. Working in the formal sector has a relatively recent history in all African countries. Therefore, most employees may feel detached from their organisation and lack personal commitment and identification to it. Moreover, work is perceived as a 'burden' that one has to accomplish in return for a pay check (Jackson, 2002) which makes commitment to the work and the employing organisation relatively weak. However, an individual in charge of a unit or an organisation because of the cultural enabler of respect and authority could engender the desired commitment and motivate followers to continuously develop themselves for their own benefit and that of the organisation.

Cultural Inhibitors
The cultural inhibitors itemised in Table 1 include deference for authority, which leads to bureaucratic decision making process, autocratic leadership style, centralised decision making, lack of employee empowerment, considerable dependence of subordinates on

bosses, emphasis on protocol, extreme politeness, and a slower pace of life. Basically, there is power distance where people view power hierarchies as legitimate (Hofstede, 1980). These practices stifle initiative, creativity, risk taking, innovativeness, flexibility and lack of employee involvement in decision making which are likely to affect individuals CPD efforts. Authority in Africa has to do with status rather than knowledge and specialised skills (Beugre & Offodile, 2001) leading to the few deciding for the many. Because employees revere authority, they expect their leaders to know it all and make all the decisions, which affect implementation and ownership as well as the generation of novel ideas for better ways of addressing issues. Members in such organisations normally defer to their leaders when it comes to decision-making regarding every aspect of the management of organisations (Farh & Hackett, 2007). In a culture where such characteristics prevail, individuals are unable to take responsibility for the CPD, which is contrary to one of the principles of CPD which states that, individuals should take ownership of their CPD because it enables a 'learner-led' engagement and fosters professionalism (Schostak et al., 2010). In this regard, the few should no longer decide for the many as pertains in some African cultures; where managers are authoritarians, they often feel responsible for the outcome of decisions made in their domains (Blunt, 1983) and end up becoming overly concerned about their territories and guarding them with all their might (Moris, 1977). It is therefore advocated that there should be collaboration between employees and managers where employees are encouraged to actively participate in generating novel ideas for the improvement of themselves and the organisation by widening the circle of involvement (Axelrod, 2010). The manager's role in CPD should be the provision of support to employees to enable them develop themselves rather than for managers to dictate what the employee should do or to stifle individual's CPD efforts.

Another inhibitor is negative attitude towards work, which leads to a tendency to disengage oneself with the notion that the organisation is not one's father's property (Abudu, 1986). Such an attitude invariably affects an individual's CPD because individuals with such attitudes will not be eager to develop themselves. High spiritual belief and the idea of cosmic justice makes individuals vulnerable –those with "supernatural powers" have the tendency of manipulating those without; putting fear in people and therefore deterring them from being objective in the selection of employees for CPD activities such as workshops, conferences, approval of study leave. Those who fear individuals who practice African traditional religion give opportunities for training and development to those who do not qualify for fear of being spiritually attacked. Since this practice is ingrained in those who believe in it, continuous orientation is suggested in order to reorient the mind-set of employees.

Again, managers in Africa believe that society expects them to satisfy the human resource development needs of their relatives regardless of policies in place, which leads to nepotism and forced solidarity tax. Their inability to meet the human resource development request and opportunities of a family member could lead to being ostracised by all members of the community they belong to (Kudonoo, Buame & Acheampong, 2012). They are consequently compelled to give such opportunities to people who may not be qualified for a particular CPD opportunity. Nepotism and forced solidarity tax also contribute to lack of enforcement of policies and procedures leading to lack of objectivity, which creates disorder and inconsistencies. Nepotism also undermines the nurturing of employees in organisations. This practice culminates in the favouring of close relatives or friends instead of those who really need to be sponsored for particular CPD activities. (Kudonoo, Buame & Acheampong, 2012). Nepotism also inhibits objective appraisal of employees. As part of the CPD process, employees need to be appraised in order to determine their task needs so as to offer opportunities for acquiring those skills. However, in Africa, nepotism inhibits objective appraisal of employees because employees are assessed based on ethnicity, tribalism and close relationships (Kuada 1994). A way to address and mitigate the effect of such a cultural inhibitor is to reorient those in authority for making such decisions and to have policies that help to ensure objectivity in the making of decisions regarding CPD opportunities. For example, an organisation should have policies and criteria regarding selection for training opportunities whether initiated by the individual or by the organisation.

According to Beugre and Offodile (2001) "African cultures often favour maintaining the status quo rather than striving for change and innovation" (p. 542). Consequently, new managerial techniques such as employee involvement and making the human resource (HR) function in organisations a strategic business partner where employees are turned into strategic assets are non-existent (Crain, 2009). In order to address such inhibitors, policies and mechanisms need to be put in place and enforced; making all employees accountable for their actions and inactions. Employees should be made aware that they are accountable for their CPD activities and the implications for their inability to have the requisite competencies required for the effective performance of their jobs.

A Model of Culture and CPD in Africa
Based on the discussion of the cultural enablers and inhibitors, a conceptual model is proposed which suggests that cultural beliefs and values create two types of cultural factors (enablers and inhibitors). The model also suggests that the cultural enablers have a positive impact on individual and organisational attitudes and behaviours towards CPD (represented by a positive sign in Figure 1), whereas the cultural inhibitors have a negative impact (represented by a negative sign in Figure 1) on attitudes and behaviours towards CPD. Positive work attitudes and behaviours are likely to enhance effective

CPD, whereas negative attitudes and behaviours are likely to impede it. Thus, the role of individuals and managers in Africa is to minimise the negative impact of cultural inhibitors.

The positive and negative sign in Figure 1 can be likened to the driving and restraining forces in Kurt Lewin's force field analysis of change management (Cummings & Worley, 2009). The positive sign (enablers) refers to the driving forces that facilitate effective CPD for high employee productivity, whereas the negative (inhibitors) serve as barriers to effective CPD needed for high employee productivity. Managers in Africa need to focus on minimising the inhibitors and thereby, changing the status quo for high productivity. This calls for changing organisational norms and reorienting members to new attitudes and behaviours towards CPD that lead to high employee productivity.

Figure 1: A model of Culture and CPD in Africa
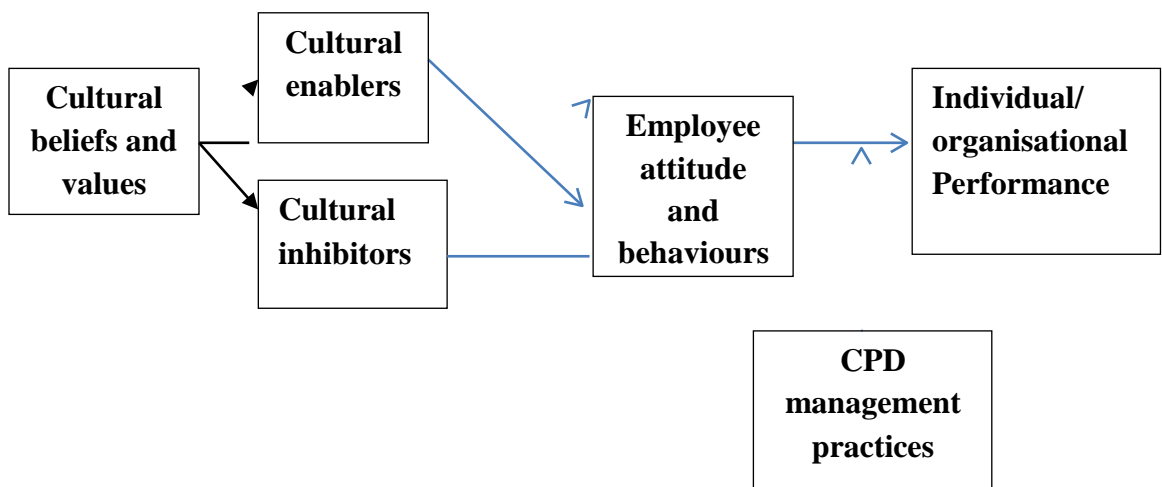
Discussions/Implications

This paper presents implications for theory and management practice. From the theoretical perspective, the paper expands the extant literature on the influence of cultural factors on CPD in Africa. In so doing, it identifies cultural enablers and cultural inhibitors and how it affects effective CPD in Africa. Cultural enablers are cultural factors that could enhance effective CPD in Africa. Cultural inhibitors however are cultural factors that could impede effective CPD in Africa. From the practical standpoint, it is suggested that this model could be used as a guideline for other management practices in Africa.

Implication for Research

It is proposed that this model is tested in organisations in Africa in order to determine its efficacy and applicability. Another area for future research is to identify strategies for minimising the effects of cultural inhibitors on other human resource development practices and strategies to leverage the benefits of the cultural enablers in order to ensure effective individual and organisational development and performance.

Implication for Practice

The literature on Africa for decades has not focused specifically on the effects of cultural enablers and inhibitors on effective human resource development practices such as CPD. This paper proposes that managers in Africa need to leverage the benefits of the enablers as well as strategies for minimising the effects of inhibitors for high employee performance.

References

Abudu, F. (1986). Work attitudes of Africans, with special reference to Nigeria. *International. Studies of Management & Organization, 16*(2), 17-36.

Adanu, T. S. A. (2007). Continuing Professional Development in state-owned university libraries in Ghana. Library Management, 29(6/7), 292-305. http://dx.doi.org/10.1108/01435120710774440.

Armstrong, M. 2005. *A Handbook of Human Resource Management Practice*. 9th ed. London: Kogan Page Limited.

Axelrod R. H. (2010) *Terms of Engagement: New Ways of Leading and Changing Organizations.* (2nd ed.). San Francisco: Berrett-Koehler Publishers Inc.

Beardwell, I. & Holden L. (1998). *Human Resource Management: A Contemporary Perspective*. New Delhi: Macmillan India Limited.

Becker, G. S. (1964). *Human capital*. New York, NY: Columbia University Press.

Beugre, C. D., & Offodile, F. O. (2010). Managing for organisational effectiveness in sub-saharan Africa: a culture-fit model. *The International Journal for Human Resource Management, 12*(4).

Borjesson, A., Pareto, L., Snis, U. L., & Staron, M. (2007). *Continuing professional development by practitioner integrated learning.* OOPSLA '07. Companion to the 22nd ACM SIGPLAN conference on object-oriented programming systems and application companion. NY.

Boud, D., & Hager, P. (2012). Rethinking continuing professional development through changing metaphors and location in professional practices, *Studies in Continuing Education*, *34* (1), 17-30.

Crain, D. W. (2009). Only the right people are strategic assets of the firm. *Strategy & Leadership*, *37*(6), 33-38.

Cummings, T. G., & Worley (2009) *Organization Development & Change.* South-Western Cengage Learning.

DiMauro, N. M. (2000). Continuous professional development. *Journal of Continuing Education in Nursing. 31*(2), 59-62.

Edoho, F. (Ed.) (2001). *Management challenges for Africa in the twenty-first century: Theoretical and applied perspectives*. Westport, CT: Praeger Publishers.

Hatch, G., Becker, P., & van Zyl, M. (2011). *The dynamic African consumer market: Exploring growth opportunities in Sub-Saharan Africa*. Chicago, IL: Accenture**.**

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and Organisations: Software of the Mind*. (3rd ed.). New York: McGraw Hill.

Hofstede, G. (1980). *Culture's Consequences: International differences in work related values*. Beverly Hills, CA: Sage Publications.

Jackson, T. (2002). Reframing human resource management in Africa: A cross-cultural perspective. *International Journal of Human Resource Management*. *13*(7), 998-1018.

Kamoche, K. (2011). Contemporary developments in the management of human resources in Africa. *Journal of World Business, 46*, 1-4.

Kuada, J. E. (1994) *Managerial behaviour in Ghana and Kenya: A cultural perspective*. Aalborg: Aalborg University Press.

Kudonoo, E. C. (2013). *Success rates of OD and change initiatives in Anglophone West Africa: A meta-analytic review*. A dissertation submitted to Benedictine University. ProQuest LLC.

Kudonoo, E. C., Buame, C. K., & Acheampong, G. (2012). Managing human resources for competitive entrepreneurial advantage in Ghana: A resource-based view. *School of Doctoral Studies European Union Journal,* 71-82.

Lawler, E. D. III, Worley, C. G., & Creelman, D. (2011). *Management reset: Organizing for sustained effectiveness.* New York, NY: John Wiley & Sons.

Megginson, D. & Whitaker, V. (2007). *Continuing Professional Development*. 2nd ed. London: CIPD.

Mohrman, S. A., Mohrman, A. M., Cohen, S. G., & Winby, S. (2008). The collaborative learning cycle: Advancing theory and building practical design frameworks through collaboration. In A. B. (Rami)

Shani, S. A., Mohrman, W. A., Pasmore, B., Styme, & N. Adler (Eds.), *Handbook of collaborative management research* (143-159). Los Angeles, CA: Sage.

Morris S. S., & Calamai, R. (2009). Dynamic HR: Global applications from IBM. *Human Resource Management, 48*(4), 641-648.

Moris, J. (1977). *The transferability of western management concepts and programmes: An East African perspective*. London: London International Institute of Educational Planning.

Mufune, P. (2003). African culture and managerial behaviour: Clarifying the connections. *South Africa Journal of Business Management. 34*(3), 17-28.

Munford, A. (1988). Learning to Learn and Management Self Development. In Pedlar, M., Burgoyne, J. & Boydell, T. (Eds.). *Applying self-development in organisations*. New York: Prentice Hall. 23-27.

Nnadozie, E. (2001). Managing African business culture. In F. M Edoho (Eds) *Management challenges for Africa in the twenty-first century. Theoretical and applied perspectives* (52-62). Westport, CN: Praeger Publishers.

Ofosu, N. D. (2011). *An investigation into Continuous Professional Development Practices among Biomedical Scientist: A case study of selected laboratory and Health facilities in the Ashanti Region*. Unpublished Commonwealth Executive Master of Business Administration Thesis submitted to the Department of Managerial Science of the University of Kwame Nkrumah University of Science and Technology. Ghana.

Pilbeam, S., & Corbridge, M. (2006). *People Resourcing: Contemporary HRM in Practice*. 2nd Ed. London: Pearson Education Limited.

Schostak, J., Davis, M., Hanson, J., Schostak, J., Brown, T., Driscoll, P., Starke, I., & Jenkins, N. (2010). *The effectiveness of continuing professional development*. A report prepared on behalf of emergency medicine, Federation of Royal Colleges of Physicians and Manchester Metropolitan University.

Schein, E. (2010). *Organizational Culture and Leadership.* 4th Ed. San Francisco: CA, Jossey-Bass.

Schein, E. H. (1999). *The Corporate Culture Survival Guide: Sense and Nonsense about Culture Change*. San Francisco, Jossey-Bass.

Schein, E. H. (1992). *Organisational Culture and Leadership.* (2nd Ed.). San Francisco, Jossey-Bass.

Tenkasi, R. V., & Mohrman, S. A. (1999). Global change as contextual collaborative knowledge creation. In D. L. Cooperrider and J. E. Dutton (Eds.), *Human dimensions of global change* (pp. 114-136). London: Sage.

COMMITMENT TO PROFESSIONAL DEVELOPMENT BY PRIVATE SECTOR ACADEMIC LIBRARY STAFF IN THE 21ST CENTURY: A STUDY OF GHANA

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Abstract
The rapid rate of development, both within and outside the library profession, continues to make it difficult, if not impossible, for a librarian to rely on his basic training for any appreciable length of time during his professional career. Such factors as the impact of new technology, "information explosion" and new policies and methods for organization and provision of information have made it absolutely essential for librarians to engage actively in Professional Development Programmes (PDP) if they are to remain professionally up-to-date. More importantly, if they are to provide services that meet the challenges imposed on them by these new developments. This research sought to examine the professional development avenues available to Library staff in private universities in Ghana and the personal commitment of library staff to professional development. A combination of qualitative and quantitative methods was adopted to prosecute the research. The findings revealed among others that none of the private universities studied had a policy on professional development and only three institutions made budgetary provision towards PDP. Library staff in private universities in Ghana see PDP as a necessary factor in their profession as it creates avenues for knowledge sharing among professionals and majority of respondents had been willing to attend PDP.

Keywords: Professional Development, Private Universities, Academic Libraries

Introduction
Background

Library science is an interdisciplinary field. The library's clientele is a diverse one, including students and teachers, community members, and scholars and researchers from every discipline. In order to provide quality service to its clients, librarians need to be well trained and must be committed to continuous learning. The saying, "Knowledge is boundless" describes a universal realm of knowledge seeking (Pan and Hovde, 2010

The terms Staff Development, Professional Development and Staff Training are often used interchangeably. Staff training is defined as implementing programs to improve overall employee performance to ensure that an organization becomes more innovative, and "bridge a gap between present and desired performance" (Saponaro *et al.*, 2009). Others define staff development as "change in individual's knowledge, understanding, behavior, skills and in values and beliefs" (Southwest Educational Development Laboratory, 1994). All these definitions are broad and overlapping. The best way to understand an organization's definition of any of these terms is to identify the scope of the use of the term.

Professional development to the researchers, is any activity undertaken by an individual or an organization to further acquire knowledge which is expected to enhance an individual's ability to perform his professional duties.
Professional development (PD) is a lifetime learning process, which is both universal and individualized. It is a universal requirement of all professionals especially librarians in order to keep up with the rapid changes in the library field and maintain professionalism. At the same time, it is an individualized experience that varies with the needs of specific work duties as well as resources available around one's working, social, and academic environment (Pan & Hovde, 2010).

Pan and Hovde, (2010) indicate that professional development for academic librarians fulfills a need for the continuing acquisition of knowledge and competencies that has not been met by either formal education or on-the-job-training. This need is so driven by both the "technological imperative" (the rapid technological change that characterizes contemporary academic libraries), and by the element that librarians share with other professionals. One essential component of the academic librarian's knowledge base is the world of scholarship. The library and information science degree does a competent job of preparing librarians for the role of service provider in assisting patrons with the process of completing their scholarship tasks. As individuals, however, librarians may be less well served by formal training for the scholarship demands of their own research and publication, particularly in faculty status settings. Professional development programs work well to foster both specific skill-sets and the process by which skills are applied.

The process of continuous learning always starts with a personal vision which implies a self-assessment of one's weaknesses and a desire to change by seeking ways that will lead to the correction of the weaknesses. Hauroo, (2010) called for a personal commitment to continuous professional development which is highly critical for achieving desired results and that learning should always be characterised by personal and professional change (Hauroo, 2010).

Professional development benefits both the individual and the institution. For the individual, the ongoing process of acquiring new information and skills promotes job competencies for performance upgrades and promotion. On the psychological level, heightened competency may reduce job-related stress and increase interest and thus promote job satisfaction (Block and Kelly, 2001). Due to its persistent and lasting nature, professional development is known also as "life-long learning." An active professional development program offers the institution a corporate strategy for dealing with change (Shaughnessy, 1992). Employee competency and satisfaction underwrite the improvement of library services (Pan and Hovde, 2010).

Study setting
According to Adu, (2009) private universities have sprung up like "mushrooms" in Ghana. The process started in Ghana in 1993 when a structure for accrediting private universities was put in place. In 1999, there were two and by 2009 there were 11 new private universities.

The growth of private tertiary institutions in Ghana is not unique. Similar developments have taken place in other West African countries such as Nigeria, Benin and Senegal, as well as in the East African countries of Tanzania and Uganda (Adu, 2009).

There are several reasons for this rapid growth in private higher education. First, Ghana's education sector has been deregulated following a general trend of deregulation in Africa in the wake of a wave of democratisation. In the 2007 Ghana Education Reform exercise, a goal was set to increase private sector participation in education services. Policies such as tax exemptions on imported books were put in place (Adu, 2009). Secondly, the massive growth in private institutions is a result of the increased demand for higher education. Enrolments have multiplied more than 10 times over two decades before 2009 in response to social and political pressures for access to higher education (Adu, 2009).

At the time of collecting data for the study, there were 48 accredited private universities which were the study population for this research. The rapid growth in the private universities came along with employment of large number of library staff. The question we need to ask is whether these universities are committed to professional development since there is a likely hood of inadequate funds as they will not have financial support from the government.

Statement of the problem
Richard in 1976 stated that "the librarian's training is out-of-date on the day of his graduation" and this is still true in this modern era. The rapid rate of development, both within and outside the library profession, continues to make it difficult, if not impossible,

for a librarian to rely on his basic training for any appreciable length of time during his professional career. Such factors as the impact of new technology, the "information explosion" and new policies and methods for the organization and provision of information, have made it absolutely essential for librarians to engage actively in continuing education programmes if they are to remain professionally up-to-date and, more importantly, if they are to provide services that meet the challenge imposed on them by these new developments.

The form of library education received in Ghana is broad-based and this does not equip librarians with enough skill to survive in the rapidly changing environment. The lack of commitment by individuals and organizations to professional development has made the issue of professional development a threat to the library profession in Ghana.

Private universities are quickly springing up in Ghana and financial difficulties and management practices in some of these universities do not encourage them to provide professional development opportunities for their staff. The professional development of library staff in these Institutions cannot be taken for granted if they are to add to the quality of the education that students are given in these Institutions.

A number of researches including Osei, (1996) Adanu, (2007) have been done on professional development of Library staff in public university libraries but not much have been done in private university libraries. It is for these reasons that the research seeks to examine how committed Library staff in private universities in Ghana are to professional development since the initial training received in library schools may not take them through their entire professional lives successfully.

Methodology

Research Design

The study was a cross-sectional survey in which information from a sample that was drawn from a predetermined population was collected at just one point in time and the time taken to collect all the data desired was spread over a number of weeks.

Population

For the purpose of this study, the population of respondents included all professional and para-professional librarians in all the 48 accredited private universities in Ghana.

Professional librarians for the purpose of this study, are library staff who hold post-graduate degree in Library Studies or Information Studies and para-professionals are library staff who hold certificate, diploma or first degree in Library Studies or Information Studies.

The total population of 92 professionals and para-professionals in the private universities purposefully selected for this study were used as respondents to the questionnaires that were administered due to the small size of the population.

All the Heads of the private universities Libraries purposefully selected were also interviewed due to the fact that the population of heads of library was small and could be managed.

Sampling technique for private universities

The total population of private universities in Ghana is 48 (http://www.nab.gov.gh/). Fifty percent plus One (50% + 1) institution out of the total of 48 private universities in Ghana were chosen by the researchers as the sample size for the private universities.

Stratified/proportionate sampling technique was used to select 25 private universities out of 48 from which the researchers collected data for this study. The following method was used:

The country (Ghana) was divided into three (3) zones (strata) based on the geographical location of the 10 regions. Zone one (1) which is the coastal belt was called the Southern Zone which consisted of the Greater Accra Region, Volta Region, Western Region and the Central Region. Zone two (2) (the forest belt) was called the Middle Zone which consisted of Brong Ahafo Region, Ashanti Region and Eastern Region. Zone three (3) the savannah belt was called the Northern Zone and consisted of Upper East, Upper West and Northern Regions.

To select 50% percent of the Private Universities from the 3 zones, the following formula was used;

$$PS = 24 \times \frac{ZN}{TN}$$

Where PS is proportionate sample, ZN is total number of private universities in a zone, TN is total number of private universities in Ghana and 24 is 50% of the total 48 private universities in Ghana.

Table 1 below indicates the number of private universities in a zone by regions.

Table 1: *Number of private universities*

Zone	Region	Number of Universities	Total No of Uni. In the Zone
Southern Zone	Greater Accra	30	
	Volta	1	

	Western	0	
	Central	2	
			33
Middle Zone	Brong Ahafo	2	
	Ashanti	5	
	Eastern	7	
			14
Northern	Upper East	0	
	Upper West	0	
	Northern	1	
			1

Sample size for the Southern Zone

$$PS = \frac{33}{48} \quad X\ 24 = 17$$

Sample size for the Middle zone

$$PS = \frac{14}{48} \quad X\ 24 = 7$$

Sample size for the Northern zone

$$PS = \frac{1}{48} \quad X\ 24 = 0$$

From the southern zone and middle zone 17 and 7 private universities respectively were purposefully selected based on the criteria that, the institutions have qualified professional librarians and para-professional librarians who will be the best people to provide the data needed for this study since they are the subject for the study and are professionals who need to gain professional development opportunities.

Though the Northern zone recorded zero (0) by the proportionate sampling method, the only private university in the Northern zone was purposefully added to be the representation of the Northern zone to enhance proportionate representation of all private universities in Ghana.

A total of 92 questionnaire were sent out, 61 were returned giving a response rate of 66 %. Interviews were conducted with the Heads of 20 private universities in Ghana out of the 25 chosen as study centers for this research. Two of the institutions had no Head librarians as at the time of the research and three Head librarians of three universities were not available to be interviewed.

Findings

Biographical information of respondents

The gender distribution of the respondents revealed that 55.7% of them were males and 40.9% of them were females. Two (2) respondents representing 3.3% did not indicate their gender. Thus, there were more men working in private university libraries than females. The age distribution of all the respondents indicated that, majority of employees in the libraries of private universities were within the active age of 26 to 60 years. This implies that private universities employed staff who were in active service and if such staff are sent on professional development programmes, their ages will permit them to stay longer with their institutions to implement what they have studied unlike retirees who may leave the organization at the end of their contract periods.

With regards to qualification, majority of the respondents were MA/MSC holders followed by Diploma and Degree holders. It implies that private universities were willing to invest in academically qualified library staff to work in their institutions. The study also revealed that majority of staff in these institutions completed Library School not more than five years from the time of the study. (See Table 2 and Figure 1 below)

Table 2: *Academic qualification of respondents*

Academic Qualification	Frequency	Percentage
Diploma	16	26.2
Degree	15	24.6
Postgraduate Diploma	3	4.9
MA/MSC	20	32.8
MPhil	4	6.5
N/A	3	4.9
Total	61	100

N=61
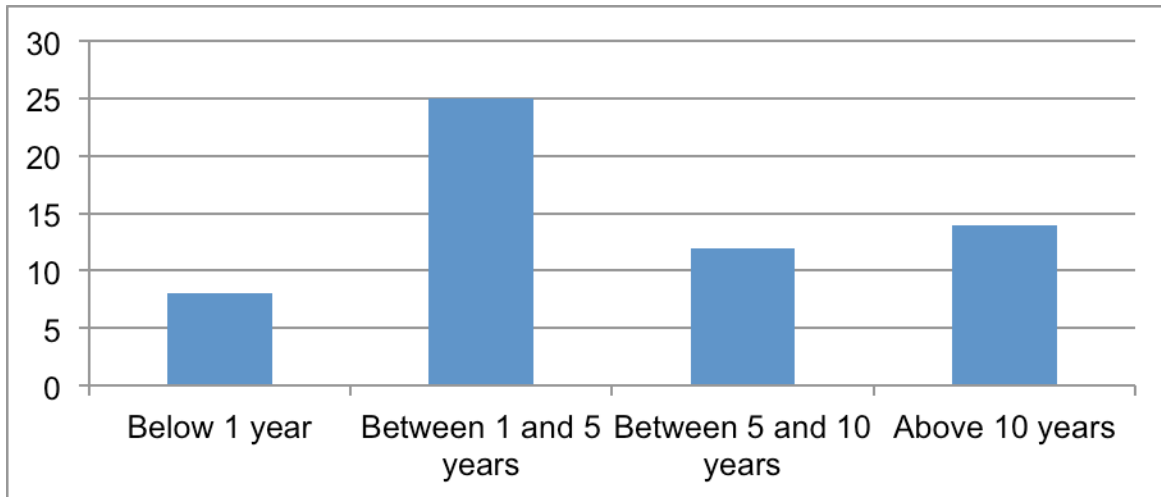
Figure 1: *Number of years after Library School*

On working experience, majority of the respondents had worked for more than a year in their current organizations. A total of 47 of the respondents representing 77% had been with their institutions between 1 year and 10 years. This should be a long enough period to expose respondents adequately to the types of professional development programmes available in their institutions if there were any internally and externally organized ones.

Necessity of professional development programmes
In rating how necessary professional development programmes were, 62.3% rated them as critical. Library professionals therefore see the necessity of professional development programmes. (See Table 3)

Table 3: *Response on need for professional development programmes*

Scale	Frequency	Percentage
1	0	0
2	1	1.6
3	3	4.9
4	17	27.9
5	38	62.3
N/A	2	3.3
Total	61	100

N=61

The scale is interpreted as; 1 = unnecessary, 2 = slightly necessary, 3 = necessary, 4 = Very necessary, 5 = Critical

Willingness to attend professional development programmes

Over 90% of the respondents indicated they had been willing to attend or participate in professional development programmes. This implies that respondents were aware of the benefits to be derived from professional development programmes, hence their willingness to attend.

Due to the necessity of professional development programmes, 50.8% of respondents had ever personally requested to attend professional development programmes. Thus personal initiatives towards professional development can be rated above average.

The research revealed that, it was not all the respondents who made personal requests to enroll on professional development programmes who were allowed or able to attend. This may be because their institutions selected some other staff to represent the institution at the professional development programme or because there was no money. This could kill the initiative of the staff as they may not be willing to put in such requests again (See Table 4).

Table 4: *Personal Request to attend a professional development programme*

Responses	Frequency	Percentage
Yes	31	50.8
No	26	42.6
N/A	4	6.6
Total	61	100.0

Personal budget

Findings revealed that 27 (44.3%) of the respondents made personal budgetary provisions for their professional development programmes and 34 (55.7%) of them never made any personal budgetary provisions for professional development. Majority said they did not, because even if they made budgetary provision towards professional development, they may not be allowed to attend if it was not their institutions which were sponsoring and sending them to attend. Some also said their salaries were not enough to enable them make such provisions (see Table 5).

Table 5: *Amount allocated personally to professional development and frequency of making budget*

How much do you budget for Professional Development Programmes	If Yes, How often do you budget for this?				Total
	Monthly	semi-annually	annually	bi-annually	
less than Gc100	3	1	2	1	7
between GHc100 and GHc500	2	3	5		10
above GHc500	1	1	7	1	10
Total	6	5	14	2	27

Use of personal professional development budget

Respondents were asked to indicate the specific professional development programmes they used their budgets to take care of. They were allowed to give multiple responses. Ten (10) of the respondents indicated they used it for conference fees, another 10 used it for workshop fees, 13 used it for tuition fee and another 13 for library association fees. This finding shows that there is almost an even distribution of the budget of the respondents among conferences, workshop, tuition fees and library association fees

Table 6: *Number of occasions to professional development programmes compared with personal budgetary provision*

Number of Occasions to Professional Development Programmes	Personal Budgetary provision		
	Yes	No	Total
0 Occasion	0	15	15
1-5 Occasions	19	13	32
6-10 Occasions	2	3	5
More	6	2	8
N/A		1	1
Total	27	34	61

Table 6 above compares the respondents who made personal budgetary provision towards professional development and those who did not make personal budgetary provision and the number of times they had been to professional development programmes. The comparison showed that, all the 27 respondents who made budgetary provision towards professional development programmes had ever been to a professional development

programme. All the 15 respondents who had never been to any professional development programme did not make personal budgetary provision towards professional development programmes.

Professional development policy
None of the institutions had a policy on professional development.
The situation where there is no policy on professional development makes it critical for Librarians working in private universities to be personally committed to professional development.

Staff involvement in professional development programmes
This research also revealed that a significant number of staff (24.6%) in private university libraries had never been to any staff development programme. According to the findings, 36.1% of the respondents were not given the opportunity to attend professional development programmes.

It is not ideal for library staff not to participate in the professional development programmes. It does not enhance their professionalism. Professionals are to belong to recognized associations which provide opportunities for learning (See Table 7).

Table 7: *Number of Professional Development Programmes attended*

Number of Occasions	Frequency	Percentage
0 Occasion	15	24.6
1-5 Occasions	32	52.5
6-10 Occasions	5	8.2
More	8	13.1
N/A	1	1.6
Total	61	100

The research again revealed 22 (36.1%) of the respondent had never been asked by their employers to attend a professional development programme (See Table 8). This may be due to reasons that there is no equal opportunity available to staff in regard to staff development. This approach is not the best since all staff members need to be well trained to enhance their knowledge base in order to aid in effective and efficient delivery of library services. Especially in institutions where proper knowledge sharing mechanisms are not in place, some staff members will lag behind in terms of knowledge shared at professional development programmes. An interview with head librarians showed that only 8 of the institutions studied had knowledge sharing mechanisms available.

Table 8: *Employer Request for Professional Development Programme*

Responses	Frequency	Percentage
Yes	38	62.3
No	22	36.1
N/A	1	1.6
Total	61	100

In-house professional development programmes

The study revealed that majority of private university libraries in Ghana do not have in-house professional development programmes for their staff members. Without the availability of such avenues, it becomes difficult to help increase the knowledge base of staff members to help meet the challenges of current trend (See Table 9 and 10). Interviews conducted with the 20 Head Librarians also indicated that, majority of the institutions did not have any form of in-house professional development programme apart from orientation. Some however have been organizing seminars and workshops.

Table 9: *In-house training programmes*

Responses	Frequency	Percentage
Yes	20	32.8
No	41	67.2
Total	61	100

Table 10: *Forms of In-house training programmes*

Programme	Frequency
workshops	14
seminar and workshop	3
N/A	3

N=20

Institutional budget

Eleven heads indicated that their institutions made budgetary allocation to professional development, whiles 9 institutions did not make budgetary allocations. Out of the 11 who indicated that their Institutions made budgetary allocation to professional development, 7 of them did not make available any specific percentage to the Library but indicated that money was released for professional development programmes depending on the cost of

the programmes and availability of funds in the institution's coffers thus only three institutional Heads indicated that their institutions made budgetary allocations specifically towards professional development programmes for the library.

Source of funding to professional development programmes

Employers were indicated by respondents as being the main sponsors of staff to professional development programmes. The efforts of the employers, though much appreciated, seems to put limits on the number of staff each institution can sponsor to a professional development programme at a time as the organization may not be willing to sponsor everyone.

The effort of the Consortium of Academic and Research Libraries in Ghana (CARLIGH) in organizing professional development programmes was also strongly highlighted as staff from member institutions of CARLIGH cited the Consortium as sponsor of some professional development programmes in which they participated (see Table 11).

Table 11: *Source of funding to professional development programmes*

Source of funding	Frequency	Percentage
Self	4	6.6
Employer	17	27.9
CARLIGH	5	8.2
International sponsorship	1	1.6
self and employer	5	8.2
Self and library association	2	3.2
self and CARLIGH	1	1.6
employer and CARLIGH	6	9.8
self, employer and CARLIGH	1	1.6
employer, library association and CARLIGH	1	1.6
All	3	4.9
N/A	15	24.6
Total	61	100

Study Leave

The study revealed that 34(55.7%) respondents were entitled to study leave and 23 (37.7%) were not. This was not based on their job positions but rather was seen as more of differences in organizational policy concerning professional development opportunities. Thus from the study, it was revealed that staff who indicated they were entitled to study leave cut across all staff levels and those who were not entitled to study leave also ran through all the staff levels (see Table 12).

Fourteen of the number of staff who were entitled to study leave were to work for 3 years and were allowed a period of one year as study leave period. Majority of the staff had never taken study leave (See Table 12 and 13).

Table 12: *Study Leave Entitlement*

Response	Frequency	Percentage
Yes	34	55.7
No	23	37.7
N/A	4	6.6
Total	61	100

Table 13: *Number of years to qualify for study leave*

No. of years	Frequency
1year	2
2years	2
3years	14
4years	7
6yrs	2
Not stated in policy	4
N/A	3
Total	34

N=34

Future training needs

Major areas of training indicated by library staff of private universities as their training needs in traditional library practices were; Classification, Cataloguing, Reader Services and Information Literacy. With the exception of information literacy, all the other areas received high indications. In the area of ICT, Database Management, use of Library Management Software and the use of Electronic Resources were the most highly stated needs. Other areas of training needs indicated by the library staff were; Human Resource Management, Publishing of papers and Marketing of Library Services (See Tables 14, 15, 16).

Traditional library practices

Table 14: *Library practices for further training*

Library practices	Frequency
Classification	19
Cataloguing	17
Reader Services	13

Information Literacy	3
None	6

(Multiple responses were given)

Table 15: *ICT Training Need*

ICT Training	Frequency
Spreadsheet	4
Database Management	29
PowerPoint Presentation	9
Library Software	37
E-resource	11
None	1
N/A	8

Table 16: *Other areas of training*

Other training needs	Frequency
Human Resource Management	17
Publishing of papers	15
Marketing of library services	23
None	1
N/A	18

Conclusion

Professional development is a very essential factor in the development of an individual who is practicing a profession and this enhances the professionality of the entire professional body to which the individual belongs. As individuals develop their professional credentials through knowledge acquisition, they build a common pool of knowledge for the professional body to which they belong.

Private universities are increasing in number at a fast rate and are becoming a major contributor in the provision of tertiary education in the country. For them to ensure positive contribution to the human resource development of Ghana, their information providers must be well trained to enhance the provision of the right information to users at the right time. This calls for a high level of commitment to professional development by their library staff and management at large.

Recommendations

Based on the findings from the study, the following recommendations are made:

1. Library staff in private universities should see their professional development as part of their own responsibility. They should not solely depend on their employers to help them develop professionally.
2. Library staff in private universities should endeavour to make personal budgetary provision for their professional development programmes. This will help position them financially to attend professional development programmes in case their employers do not give them the necessary financial support to attend such programmes.
3. Library staff in private universities should plan their annual leave times to coincide with the period of professional development programmes. This will help them make time to participate as some of them do not easily get time off their jobs to participate.
4. Library staff in private universities should register and join the Ghana Library Association. This will help enhance their professional status and will enable them to benefit from the professional development programmes organized by the Association.
5. Private university libraries and their Institutions of affiliation should endeavour to put professional development policies in place. This will serve as guidelines to direct and coordinate all professional development activities in their organizations. Without them, there might only be a haphazard system of sending staff for professional development as and when such programmes are available and as and when the institution wants.
6. The Ghana Library Association should embark on membership drive in private university libraries to encourage more library professionals and para-professionals to join the association to enable them benefit from its professional development programmes. The association should also endeavour to organize more professional development programmes which should be intensively advertised to the reach of majority of librarians in the country.
7. Private university libraries which are not part of the Consortium of Academic and Research Libraries in Ghana (CARLIGH) should register and join as this organisation organizes free training programmes as part of its initiative to enhance librarianship in the country.
8. Organizers of professional development programmes should look at ways and means by which they will make programmes affordable to enable more people patronize them.

References
Adu, K. H. (2009). Ghana: Private higher education on the rise. Retrieved November 29, 2011 from http://www.universityworldnews.com/article.

Adanu, T. S. A. (2007). Continuing professional development (CPD) in state-owned university libraries in Ghana. Library Management, 28 (6) 292 – 305. https://doi.org/10.1108/01435120710774440

Block, K. J., & Kelly, J. A. (2001). cited by Pan, Junlin, & Hovde, Karen. (2010). Professional Development for Academic Librarians: Needs, Resources, and Administrative Support. *Chinese Librarianship: an International Electronic Journal*, *29.* Retrieved September 20, 2011 from http://www.iclc.us/cliej/cl29PH.htm

Hauroo, P. (2010). *Continuous Professional Development for Librarians.* Retrieved May 17, 2012 from http://liamofmauritius.wordpress.com

Osei, I. (1996). Professional staff development in academic libraries: The University of Science and Technology Library, Kumasi. *Librarian Career Development*, *4*(4), 31 – 36. https://doi.org/10.1108/09680819610152545

Pan, J., & Hovde, K. (2010). Professional Development for Academic Librarians: Needs, Resources, and Administrative Support. *Chinese Librarianship: an International Electronic Journal*, 29. Retrieved September 20, 2011 from http://www.iclc.us/cliej/cl29PH.htm

Richard, V. (1976) cited by Alemna, A.A. (1998). Education and training of the future librarian in Ghana. *Librarian Career Development*, *6*(1), 3–6. https://doi.org/10.1108/09680819810368643.

Saponaro, M. Z., *et al.* (2009) cited from Davis, E. and Lundstrom, K. (2011). Creating effective staff development committees: a case study. *New Library World,* 112 (7/8), 334 – 346. https://doi.org/10.1108/03074801111150468.

Shaughnessy, T. W. (1992) cited by Pan, J. & Hovde, K. (2010). Professional Development for Academic Librarians: Needs, Resources, and Administrative Support. *Chinese Librarianship: An International Electronic Journal, 29*. Retrieved September 20, 2011 from http://www.iclc.us/cliej/cl29PH.htm

Southwest Educational Development Laboratory, (1994) cited by Davis, E. and Lundstrom, K. (2011). Creating effective staff development committees: a case study. *New Library World*, 112 (7/8), 334 – 346 https://doi.org/10.1108/03074801111150468

STAFF DEVELOPMENT AMONG PROFESSIONAL LIBRARIANS IN GHANA: 21ST CENTURY PERSPECTIVE

BY

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Abstract

This study assesses staff development among professional librarians in Ghana relevant to the librarian in the 21st Century. The various issues covered were staff development programmes available for librarians, staff development policy, management's commitment to professional development of librarians, and challenges associated with professional development of librarians. Questionnaire was the main instrument adopted for the collection of data from participants. A survey approach was used to collect the data and information from the selected polytechnic library staff. Sixty (60) valid responses were retrieved and analyzed out of hundred (100) questionnaires distributed. The study confirmed that there are many staff development programmes available for the 21st Century librarian. It also brought to light that none of the polytechnics libraries had its own development policy crafted for librarians. The research also confirmed that management commitment to staff development of librarians in the polytechnics leaves much to be desired and also coupled with numerous challenges. The study recommended that immediate attention should be given to staff development for all librarians in the polytechnic.

Keywords: Continuous Education, Professional Development, Information Workers, Training and Development, Polytechnics.

Introduction

The dynamism in the job of librarianship in the 21st Century requires that in order to be abreast with the explosion in information and technology challenges, those in the workforce should continually renew their skills and expand their frontiers of knowledge through continuous learning (Lamptey & Corletey, 2011).

The study is focused on staff development (SD), which encompasses lifelong learning process in all spheres. Due to the constant changing technologies and growth in professional knowledge information workers must expand their understanding and continue to update their skills always (Varlejs, 2014). This is because staff development is an indispensable element to ensure good library administration and provision of satisfactory quality (Varlejs, 2014).

Staff development (SD) is a lifetime learning process, which is both universal and individualized. It is a universal requirement for all librarians in order to keep up with the rapid changes in the library field and maintain professionalism especially in the 21st Century (Pan & Hovde, 2010).

SD basically refers to the various types of learning opportunities that result in the personal and professional growth of an employee. It is the process by which an employee may engage in targeted trainings, conferences, seminars, on the job training, and formal coaching to enhance their performance and better prepare themselves for future responsibilities (CIPD, 2008).

It is an accepted fact that, the education for contemporary professionals no longer ends with a diploma and that continuing education strengthens not only knowledge and skills necessary for competent performance but also values and attitudes necessary for service orientation of professionals (Coke, 2012).

SD is the means by which members of professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives (Lamptey & Corletey, 2011). SD is about increasing and enhancing professional qualification. As one participates in such or plans, one is showing a commitment to his professional growth. To keep professionals' skills up to date and abreast with new and changing technologies do not only benefit the professionals, but also equip them with requisite skills and experience (Broady-Preston, 2009; Pan & Hovde, 2010).

Staff development has become a household name among professional librarians. Library staff engage in continuous education and professional development activities because of the changes that have been brought about by the emergence of the Information and Communication Technology (ICT) era. Information and Communication Technology (ICT) could be said to have redefined librarianship and with it, the role of librarianship is experiencing a new face worldwide (Adanu, 2007).

Librarians and library staff in academic institutions have to learn new skills in order to survive this era of change. These skills include marketing, advocacy and income generation. Acquisition of these skills would help the librarians and libraries get the resources that would enable them support teaching, learning, research and knowledge dissemination within their institutions (Adanu, 2007).

Statement of the Problem
The rapid rate of development both within and outside the library profession continues to make it difficult for library staff to rely on basic training during their professional career. This is because information explosion, easy access to information technology and easy access to the use of the internet have all made it absolutely paramount for library staff to

engage in continuous professional development in order to remain efficient and effective in the discharge of their duties.

Library education in Ghana is broad based instruction which covers primarily generalized knowledge and concept of library systems. The need for professional development therefore cannot be over emphasized. For the library personnel to be able to cope with the changing trends of teaching, learning and research in the 21st century there is the need for relevant professional development programmes on a regular basis. Professional development programmes have come to be accepted in all academic institutions and the Polytechnics are no exemption. However, there seems to be few professional development programs for library staff in the Polytechnic

Several authors in and around the globe such as Cooke (2012), Lamptey & Corletey (2011), Pan & Hovde (2010), Hurych (2002) Asante and Alemna (2015), Borteye and Ahenkorah-Marfo (2013), Dzandza (2012), Lamptey and Corletey (2011), Adanu (2007), argued on the importance of professional development for the library staff and urged library staff to position themselves in the changing information technology systems in order to meet current job performance .

There seem to be a gap that needs to be explored especially among the library staff in the polytechnic libraries. This study is intended to bridge the gap by investigating staff development programmes available for librarians, ascertain whether staff development is directed by a policy, management commitment to professional development of librarians and challenges associated with professional development of librarians in selected Polytechnic libraries in Ghana. It is the above reasons that have necessitated the conduct of this research to examine staff development among librarians in selected Polytechnic libraries in Ghana.

Purpose of the Study
The purpose of the study is to investigate whether staff development programmes among librarians meets the 21st Century needs, focusing on selected Polytechnics in Ghana with the view of identifying the possible challenges and making the necessary suggestions.

Objectives of the Study
Specifically, the main objectives of the study are as follows:
❖ To find out the staff development programmes available for librarians
❖ To ascertain whether the staff development is directed by a policy
❖ To assess management commitment to professional development of librarians
❖ To identify the challenges associated with professional development of librarians

Research Questions

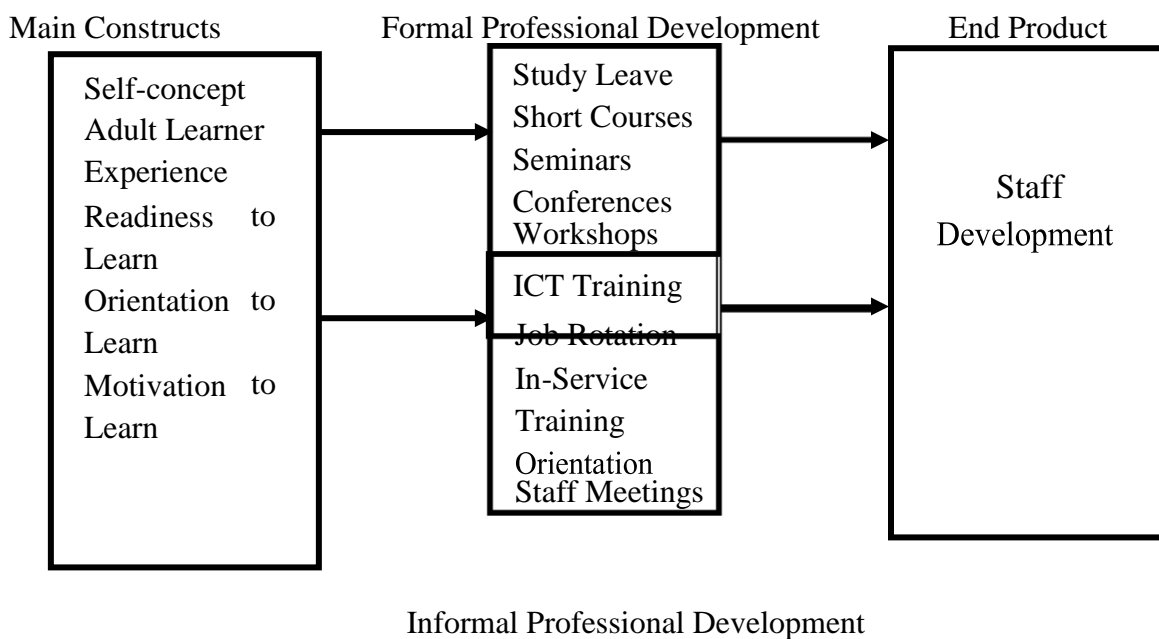The objectives of the study were guided by the following research questions

❖ Are there any staff development programmes available for librarians?

❖ Is the staff development of librarians directed by a policy?

❖ What is management commitment to professional development of librarians?

❖ Are there any challenges associated with professional development of librarians?

Scope of the Study

The study covered four (4) Polytechnics in Ghana. It is limited to library staff in the categories of Professional and Para-professionals in the profession. Professional librarians are library staff who hold post graduate degree in Library Studies or Information Studies whiles Para-professionals are library staff who hold certificates, diplomas or degrees in library or information studies.

Research Model

Figure 1 Outline of Research Model

Main Constructs   Formal Professional Development   End Product

| Self-concept
Adult Learner
Experience
Readiness to Learn
Orientation to Learn
Motivation to Learn | Study Leave
Short Courses
Seminars
Conferences
Workshops
ICT Training
Job Rotation
In-Service Training
Orientation
Staff Meetings | Staff Development |

Informal Professional Development

    Authors Constructs (2016)

The main constructs of the research model depict the qualities of an adult learner as indicated in the Adult Learner Theory (Andragogy). The main construct consists of five variables that show the enthusiasm of an adult to engage in a learning process. These are self-concept, adult learner experience, readiness to learn, orientation to learning and motivation to learn. The staff development programmes available are mainly formal and

informal as indicated in the Figure 1. Exposure to these forms of programmes results in staff development as the end product.

Significance of the study

The significance of this current study cannot be over-estimated. The study results and findings will serve as a yard stick to examine the professional development activities of library staff in the Polytechnics in Ghana regarding issues of needs assessment, type of activity, viable policy, professional development document, management commitment, budget allocation as well as challenges with regards to professional development activity. Employers can equally consult the documents to be informed of how professional development programs can affect employees output in their job performance

Related Literature Review
Staff Development Concept Globally

According to Chaudhary (2001) all library personnel both professional and supportive staff need to avail themselves of professional development. It was argued that continuing education opportunities should not be limited to only formal professional development but should include informal learning situations. Ramachander (2013) affirmed that staff is the centre of any academic library. The author believes that librarians are the forefront of dissemination of information and should explore all the possibilities of professional development avenues available to them. The objective of the study was to assess the status of professional development of librarians in self-financial management institutions in India. The study intimated that most librarians do not get financial support from the institutions to attend workshops or seminars or training programmes outside the institute.

Another study conducted by Davis and Lordstrom (2011) explored the role of staff development committees in relation to motivation, morale and education of library staff. The study highlighted importance of professional development for universities and for which reason staff development and training programmes were created to address staff development needs. The study concluded that the institution places importance on developing individual staff to have critical skills to function effectively in order to serve faculty, staff, students and community members. The study revealed the importance of staff development to their staff and focused on staff development committee as a way of assisting individuals to develop their professional competence in the work place.

Pan and Hovde (2010) agreed that library and information science prepares librarians for the role as a service provider to assist patrons in their search for information. They opined that the need for Professional Development may arise in a wide range of situations. According to them, formal classroom institutions cover primarily generalized knowledge about the concepts and theories of library systems and operation. As a result, professional development opportunities can help the new librarian put what he has learnt into

practicable activities. Pan and Hovde, (2010) intimated further that, conferences and meetings organized by professional associations provide a forum not only for learning but for professional exchange. In conclusion, the study suggested that in order to provide quality service to their clients, librarians must engage in continuous learning.

Khan and Bhati (2011) emphasized the role of library associations in promoting professional development for its members in the digital age. The study was conducted among Pakistan library Association organizations inside and outside Pakistan. The study revealed that as a result of change in the world librarianship, library associations should to play a vigorous role in continuing professional education for librarians in order to keep them well informed of current trends in their profession. The study urged library associations to offer professional workshops, training programs, conferences and seminars for librarians to exchange their professional experiences and ideas with their colleagues on a regular basis. The study concluded that the Pakistan library Association faces professional issues and challenges similar to library Associations in other developing countries. The study urged the Association to play its role to establish a comprehensive robust information system in the country.

Professional Development of Library Staff in Africa
Lockhart and Majal (2012) echoed library staff training and development as playing a crucial role in ensuring positive user experience within the library. The study explored the process and methods used at the Cape Peninsula University to ensure that staff has well planned and relevant learning opportunities and interventions. The study further looked at skills development in South Africa as well as policies, guidelines and procedures. The study revealed that training and development was the responsibility of the individual but if staff identified an area of further development, the staff would discuss with his/her line manager as well as the training Librarian. The study concluded that libraries had sufficient access to funding for continuous skills development but added that a structured annual training plan should be implanted.

Another study conducted by Agbo (2013) revealed a better picture of continuous and professional education. The study sought to find out staff training and development programs obtainable in the library. The findings revealed that staff training and development programs available in the library consisted of conferences, seminars, workshops or symposia, on-the-job training and orientation. Again, the study revealed that staff are motivated by the absence of discrimination during selection process. The study concluded that developmental situation in the world has affected different organizations including the library hence the need for library staff to engage in staff training and development programs.

Kagiri, et al (2014) established that opportunities for training and development are major factors in regard to people's career. Their study sought to establish the influence of training and development, on the performance of employees in research institutes in Kenya. The study adopted descriptive and correlation research designs while the population was drawn from all government owned research institutes with a sample size of 256 employees. The study revealed that the correlation between employee performance and training and development were highly significant. The study further recommended that research institutes initiate training and development programs that are relevant to their needs.

According to Eke (2011) most librarians attend conferences to learn about professional issues and to brainstorm with colleague professionals and share ideas with them. The study further revealed certain hindrances librarians faced in attending conferences. These included lack of sponsorship, lack of awareness, cost of participation, non-acceptance of papers, lack of interest by members, lack of awareness based on the study findings. The author made recommendations such as attending annual conferences to learn more about professional issues and to brainstorm with colleagues on current emerging issues on librarianship, urging individual institutions to make financial assistance available to enable their members to attend such conferences. Also, Nigeria Library Association Committee should encourage and accept more papers and split the conference sessions into lead paper presentation and discussion groups, encouraging more mentoring and more papers/article publication among others.

Ukachi and Onuoha (2013) suggested that continuing professional development is driven by information challenges and the desire to acquire relevant skills needed to address the information needs of users. Their study examined the various forms of continuing professional development that Nigerians had participated in during the last five years with a view to find out the various ways in which skills acquired from such programmes had enabled innovation and creative information service delivery. The study revealed that librarians had participated in very few forms of continuing professional.

Additionally, librarians should endeavor to acquire more skills in the areas of digitalization, real time referencing, teleconferencing and network management skills in order to provide creative and innovative services in their libraries. Moreover, Library managers should also ensure that librarians are put or made to work in the sections or units where their skills and knowledge would enhance their job functions and not wasted by under-utilizing them (Ukachi and Onuoha, 2013).

Professional Development of Library Staff in Ghana

Borteye and Ahenkorah-Marfo (2013) found out that staff development programmes are available for all categories of staff in the library profession. The study revealed that staff development and training programs such as orientation, instruction in user-services among others are available for all personnel on the profession.

Asante and Alemna (2015) confirmed that professional development for academic librarians and library staff fulfilled a need for continuing acquisition of knowledge and competences that had not been met by either formal education or on-the-job-training. The study revealed that all the polytechnic libraries did not have their own training and development policies. However, the study confirmed that majority of the staff of the polytechnic libraries require skills in Information Communication Technology (ICT) specially to meet the demand of the 21st Century user.

The study recommended that heads of library in the polytechnic should educate the library staff on the existence of staff development policies in order to make staff abreast with issues of training and development. Management of the polytechnic should be encouraged to allocate separate budget for library staff every year for easy and effective staff development programmes especially in-house ones and also library staff should be encouraged to belong to professional associations such as the Ghana Library Associations (GLA) so as to benefit from the activities of the association.

Adanu (2007) shared the view that staff development is very critical for librarians in all academic institutions and it should be a shared responsibility but Borteye and Ahenkorah-Marfo (2013) disagree with that assertion. Adanu's study found out that, Universities did not have written policies on continuous professional development for librarians in general which confirmed Alemna's (2001) study of the polytechnics on staff training and development. Lamptey and Corletey (2011) opined that the Ghana Library Association should offer library professionals in Ghana the needed competences and skills in the changing environment of today's global telecommunication era. They advocated that the association should have the solid foundation to recognize professional qualifications and training.

Dzandza (2012) found out that in most of the private universities personnel take care of their own professional development and do not rely solely on the institution. It is important to note that, all the studies conducted in Ghana on professional development; studies conducted by Asante and Alemna (2015), Borteye and Ahenkorah-Marfo (2013), Dzandza (2012), Adanu (2007), Owusu-Acheaw (2007), and Alemna (2001), affirmed that staff development is crucial for librarians in Ghana.

Hindrance to Professional Development of Library Staff

Scholars such as Dzandza (2012), Asante and Alemna (2015), Borteye and Ahenkorah-Marfo (2013), Dzandza (2012), Adanu (2007), Owusu-Acheaw (2007), Alemna (2001), Adanu (2007), Lamptey and Corletey (2011) as well as Ike (2011), all held the view that staff development of the librarian are hindered by numerous challenges such as finance, lack of management commitment, inadequate budgetary allocation, timing of the programmes, absence of policy, cost of participation, lack of interest from some librarians, lukewarm attitude of some librarians, and non-acceptance of submitted papers.

Methodology

The survey method was used for data collection from the selected polytechnic libraries; Ho, Accra, Koforidua, and Cape Coast. The use of this method is supported by Kumekpor (2002) that methodical survey may be objective, quantitative approach to the study of the social processes within a well-defined area at a given time through one or more institutions by means of an interview schedule, a questionnaire, and the data thus obtained related statistically.

The reliability and validity of the instrument (questionnaire) was pre-tested on sample respondents from Kumasi Polytechnic library. The omissions, mistakes, wording of questions and use of incorrect phrases detected were corrected before the actual distribution. The instrument used for the data collection was a questionnaire. The study population was professional and para-professional librarians from the selected polytechnics in Ghana. After the data collection, the results were analyzed with the use of Statistical Package for Social Science (SPSS) and the findings presented in tables with corresponding frequencies and percentages in the format of Microsoft word.

Findings & Discussion

Table 1: Gender of Participants

Response	Frequency	Valid Percent
Male	42	70
Female	18	30
Total	60	100.0

SOURCE: survey data, 2016

From Table 1 with respect to gender of participants out of the total respondents 42(70%) were male whiles 18(30%) were female. This could suggest that more of the participants were males. It also means that most of the librarians are males.

Table 2: Age of Participants

Response	Frequency	Valid Percent
20-25	8	13.3
25-30	15	25.0
35-40	25	41.7
40& above	12	20.0
Total	60	100.0

SOURCE: survey data, 2016

From Table 2 with respect to age of participants, out of the total respondents 8(13.3%) were within the age grouping of 20-25, 15(25%) were within the age distribution of 25-30, 25(41.7%) were within 35-40 whiles 12(20%) were in the age range of 40 and above. it could be concluded that most of the participants were within the age grouping of 35-40. It also suggests that the polytechnic needs to be proactive in terms of staff development.

Table 3: Academic Qualification of Participants

Response	Frequency	Valid Percent
Diploma/Certificate	21	35.0
Degree	14	23.3
Post Graduate Diploma/MA	22	36.7
Mphil	3	5.0
Total	60	100.0

SOURCE: survey data, 2016

From Table 3 with respect to academic qualification of participants, out of the total respondents 21(35.0%) held Diploma/Certificate, 14(32.3%) were Degree holders, 6(10.0%) had Post Graduate Diploma/MA, 16(26.7% Whiles 3(5.0%) had MPhil, Information Studies and Librarianship respectively. It could mean that the staff of the polytechnic libraries cut across all the levels of education but with a few holders of MPhil Degrees.

Table 4: Types of Professional Development Organized

Response	Frequency	Valid Percent
Workshops	30	50.0
Seminars	12	20.0
Conferences	12	20.0

Symposia	6	10.0
Total	60	100.0

SOURCE: survey data, 2016

With reference to Table 4 on the theme of types of professional development programmes organized, out of the total respondents, 30(50.0%) indicated workshops, seminars and conferences recorded 12(20.0%) respectively, whiles symposium was 6(10.0%). It could mean that workshops are the most frequent staff development activity that is organized on regular basis for staff. Most researchers agreed on this issue as indicated in the research (Aemna, 2001; Asante& Alemna; 2015, Adanu, 2007).

Table 5 Staff Development Programmes Available.

Response	Frequency	Valid Percent
Study leave with pay	34	56.7
Study leave without pay	11	18.3
Study leave with pay and sponsorship	10	16.7
Only sponsorship	5	8.3
Total	60	100.0

SOURCE: survey data, 2016

With reference to Table 5 on the theme of staff development programmes available, out of the total respondents, 34(56.7%) indicated study leave with pay,11(18.3%) mentioned study leave without pay,10(16.7%) held the view of study leave with pay and sponsorship whiles 5(8.3%) held the opinion of only sponsorship. The implication could be that, there are many modules of staff development programmes but study leave with pay dominates in all the polytechnic libraries studied. This revelation confirms the previous findings of (Asante & Aelmna, 2015; Borteye and Ahenkorah-Marfo; 2013), Dzandza, 2012; Adanu, 2007).

Table 6: Existence of Library Staff Development Policy

Response	Frequency	Valid Percent
Yes	10	16.7
No	30	50.0
Not aware	20	33.3
Total	60	100.0

SOURCE: survey data, 2016

Regarding Table 6 on the existence of staff development policy for library staff, out of the total participants, 10(16.7%) indicated a positive stand, 30(50.0%) held a negative view point, and 20(33.3%) were not aware of such a document for library staff. A follow up interrogation ascertained that the polytechnics have institutional staff development policy which caters for the staff development needs of all library staff. This substantiates the findings of (Ahenkorah-Marfo 2013; Asante& Alemna, 2015; Lamptey and Corletey, 2011).

Table 7: Management Commitment to Staff Development Programmes

Response	Frequency	Valid Percent
Yes	13	21.7
No	26	43.3
Not Always	21	35.0
Total	60	100.0

SOURCE: survey data, 2016

Regarding Table 7 on the variable management commitment to staff development, out of the total participants,13(21.7%) indicated an affirmative view,26(43.3%) raised a negative concern and 21(35.0%) could not be straight forward when quizzed. It could be possible to conclude that, management commitment to library staff development is very minimal. It can also be deduced from the picture that management of the selected polytechnics are not critical about the career advancement of the library staff. The finding was not different from the argument of Ike (2011; Ukachi & Onuola, 2013).

Table 8: Development Needs of Librarians in 21st Century

Response	Frequency	Valid Percent
Marketing Skills	15	25.0
Digitization Skills	3	5.0
Editing/Proof Reading Skills	2	3.3
Use of Electronic Resources	10	16.7
Use of Library Software	30	50.0
Total	60	100.0

SOURCE: survey data, 2016

In the context of the development needs of the librarian in the 21st Century, out of the total respondents Table 8 showed that 15(25.0%) preferred marketing skills,3(5.0%) indicated digitization skills, 2(3.3%) held the view that editing/proof reading skills are also vital,10(16.7%) indicated skills in the management of electronics resources is very

important, whiles 30(50.0%) raised concerns on the skills of handing library management software. It could be inferred from the results that librarians need to be abreast with variety of skills, the use and management of library software being crucial.

Table 9: Challenges of Staff Development of Librarians

Response	Frequency	Valid Percent
Yes	30	50.0
Not always	24	40.0
To some extent	6	10.0
Total	60	100.0

SOURCE: survey data, 2016

In the context of the challenges of staff development in the 21st Century, out of the total respondents Table 9 depicts that 30 (50.0%) indicated that there are challenges with respect to staff development of librarians, 24(40.0%) indicated that not always whiles 6(10.0%) indicated that to some extent there are challenges with respect to staff development of library staff. It is clear from the results that staff development among librarians is pinned down with challenges. A follow up question on the various challenges brought to light the following: lack of finance, lack of management commitment, inadequate budgetary allocation, timing of the programmes, absence of policy, cost of participation, lack of interest from some librarians, lukewarm attitude of some librarians, non-acceptance of submitted papers among others. The results concur with the findings in a previous work of Asante & Alemna, 2015; Dzandza, 2012; Borteye and Ahenkorah-Marfo, 2013; Dzandza, 2012; Adanu (2007; Owusu-Acheaw; 2007)

Conclusion & Recommendations

The study has underscored that in the era of the 21st Century the career development of the librarian is very critical. This is because our clients/users are now more sophisticated than ever and as a result of this, information professionals need to upgrade their skills and knowledge in the quest to position themselves strategically in meeting the information needs of the user. The research recommends that more and varied forms of staff development activities should be organized at regular intervals, and librarians start drafting a holistic staff development policy for all library staff in the polytechnics. It is also recommended that head librarians rekindle their lobbying skills to attract the commitment of management in staff development of all library staff.

References

Adanu, S. A. (2007). Continuous Professional Development in state-owned Universities in Ghana. *Library Management, 28* (6), 293-305

Agbo, A. D. (2015). Staff Training and Development Programs in Nigerian University Libraries. The case of Michael Okpare University of Agriculture, Umudike. *International Journal of Multidisciplinary Research and Development, 2*(2), 553-557

Ai-Ling, Y. (2009). Continuous Professional Development for Librarians *Journal PPM*. University Malaya, Kuala Lumpur: Persatuan Pustakawan Malaysia. Retrieved September 20, 2015 from http://ir.uitm.edu.my/11575/1/AJ_HEE%20KYEUNG%20RYU%20PPM%2009.pdf

Alemna, A. A. (2001). Perception of Continuing Education for Librarianship in Ghana. *New Library World, 102* (1), 44-48

Asante, E., & Alemna, A. (2015). Training and Development Issus: Evidence from Polytechnic Libraries in Ghana. *Library Philosophy and Practice*. Retrieved October 18, 2015 from https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3195&context=libphilprac

Borteye, F. M., & Ahenkorah-Marfo, M. (2013). Staff Development of Library Association in the Kwame Nkrumah University of Science and Technology, Kumasi, Ghana *Journal of Science and Technology.* 22 (1), 105-113.

Broady-Preston, J. (2009). Continuing Professional Development, its role in the changing education and qualification landscape of the information profession, a case study of the UK. *New library World* 110(/5/6), 265-279.

Chartered Institute of Personnel and Development (2008). www.cipd.co.uk

Chaudhary, M. Y. (2001). Continuing Professional Education of Librarians Working in the University Libraries of Pakistan and Azad Jammu and Kashmin. *IMSPCL* 32(1), 67- 73

Coke, M. A. (2012). Professional Development 2.0 for Libraries, Developing an Online Personal Learning Network. *Library Hitech News, 29*(3), 1

Crossham, A. F., Fields, A. J., & Oliver, G. (2005). Where to From Here? Continuing Professional. Development in New Zealand (Ifla Cpdwl Paper) T. *Library Review*, *56* (7), 573- 584.

Davis E, L., & Lordstrom, K. (2011). Creating Effective Staff Development Committee; a case study, Utah State University, Library Faculty and Staff publications. Paper 107.

Eke, H. N. (2011). An Empirical Study of the impact of Nigeria Library Association Conference Attendance on Librarians Professional Development. *PNLA Quarterly,* 75 (4), 26-37

Hurych, J. (2002). Continuing Professional Education as an ethical issue. In continuing professional education for the information society. IFLA fifth World conference

of Continuing Professional Education for the library and information science professions, Germany, (256-263).

Khan, S. A., & Bhahi, R. (2014) Professional Issues and Challenges Confronted by Pakistan Library Association in the Development of Librarianship. Chinese Librarianship: *An International Electronic Journal*, *37*. Retrieved September 12, 2015 from http://www.whiteclouds.com/iclc/cliej/cl37KB.pdf

Lamptey, R. B., & Corletey, A. (2011) Building Strong Libraries and Library Association through Continuing Professional Development, the case of Ghana Library Associations. Retrieved October 20, 2015 from http://ir.knust.edu.gh/bitstream/123456789/1070/1/Continueing%20professional%20Dev%20IFLA%202.pdf

Lockhart, J., & Majal, S. (2012) The Effect of Library Staff Training and Development on the User Experience. A case study of The Cape Peninsula University of Technology Proceedings of the IATUI Conference paper 44. Retrieved October 5, 2015 from https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1134&context=iatul

Owusu-Acheaw, M. (2007). Staff Development and Employee Welfare Practices and their effect on Productivity in Three Special Libraries in Ghana. *Ghana Library Journal, 19* (1), 84-88

Pan, J., & Hovde, K. (2010). Professional Development for Academic Librarians. Needs, Resources and Administration Support. Chinese Librarianship. *An International Electronic Journal*, 29,1-9

Ramchander, L. (2013). Professional Development of Libraries in Self-Financed Management. Institutions of Indian national Capital Region. *Asian Journal of Multidisciplinary Studies, 1*(3).

Ukachi, H. B., & Onuoha, U. D. (2013). Continuing Professional Development and Innovative Information Service Delivery in Nigerian Libraries. Inhibitors and the way out. *Annals of Library and Information Studies*, *60*, 269-273

Varlejs, J. (2004). Continuing Professional Development: Principles and Best Practices. IFLA. Continuing and Professional Development and work plan learning section. Retrieved September 20, 2015 from https://www.ifla.org/files/assets/cpdwl/guidelines/cpdwl-qual-guide.pdf

NEW SKILLS REQUIRED BY LIBRARY AND INFORMATION SCIENCE PROFESSIONALS FOR THE 21ST CENTURY: A CASE STUDY OF THE CARNEGIE CPD PROGRAMME

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Abstract

This paper investigated into the new technological skills required by academic library professionals for the 21st century vis-a-vis the programme content of the Carnegie Continuous Professional Development (CPD) Programme. The main purpose of the study was to find out whether the programme content of the Carnegie CPD held at the University of Pretoria, South Africa has helped to develop technological skills required by information professionals in academic libraries in Ghana for the 21st century. The literature review was based on the key contents of the Carnegie CPD Programme such as digital technologies, cloud services and storage, web and mobile technologies and mobile devices used for information retrieval in libraries, social media, Research Data Management (RDM), Virtual Research Environment (VRE) and open access repository. The target population for the study was the first five groups of Ghanaian beneficiaries, i.e. Groups 1 - 5 of year 2014 and 2015 respectively. The triangulation method of research comprising qualitative, quantitative and the observation method was adopted, specifically, the descriptive approach of the qualitative research method. The research addressed issues that arose from the programme for future improvement. The survey monkey approach was used to administer questionnaires which were based on participant's work performance before and after the CPD experience and supplemented by the Researchers' own experiences as Ghanaian participants of the Carnegie CPD group 1 & 2. The data was summarized and presented in the form of tables, graphs, charts and statements to depict a clear representation of the responses. The data and the responses were analyzed and logical conclusions were given. Recommendations were made for the improvement of the programme and any other future training meant for information professionals skills development.

Keywords: Professional Development, Information Professionals, Carnegie CPD Programme, Technological age, Innovations, Skills, The 21st century

Introduction

The world is changing very fast with the emergence of technology, globalization and information age in the 21st century. Technology has given a new face to the library environment with new technological equipment, devices and emerging skills. Libraries are transiting from the various traditional means of services provision to the new technology era. Singh S.P and Pinki (2009) cited (Raina, 211 – 216) saying, "since the dawn of the of 21st century, libraries are facing serious transition from paper to electronic media as the dominant form of information storage, retrieval and dissemination convergence of different media, such as text, graphics, and sound, etc.". The 21st century has come along with a lot of innovation and transformation. Although technology, technological innovations and skills are not the only cause or catalyst for transformation, it is one of the most pervasive forces for change in all work environments and especially in the academic libraries of today.

Emerging Trends in the LIS Profession

Computers and different kinds of technology equipment, devices, tools and applications are used with skills to retrieve information. In fact, all aspects of academic libraries are affected by the technology of today and tomorrow including all library programs, services, the ways services are delivered, user interactions and use of libraries. Policy design and implementation; facility design; and library staff are not left out in this. Print and non-print media, virtual and digital information as well as user information and research content with teaching, learning and pedagogy have been parts of the innovations and transformations in the 21st century. Consortia and partnership relationships in academic and research environment with global trends and issues affecting students, faculty, staff and the entire academic community could be enhanced through technological innovations and skills for transformation. Singh and Pinki (2009), recommended that "it has become imperative to have generic skills in addition to acquisition of traditional and ICT competence, which must be continuously updated so as to meet the need of changing service delivery mechanism" therefore LIS professionals are expected to have the requisite level and depth of IT knowledge and skills to function well in the modern e-world of the 21st century.

The 21st century has also been noted for modernization and currency in the Library and Information Science sector. More and more new technological trends and skills are emerging very fast and globally, library and information science professionals should also strive to catch up or will be left out in the dark. Hashim and Mokhtar (2012) asserted that "this new information environment requires new skills in seeking, processing and using information. The base for individual ability to understand and use information is a qualitative, ongoing learning process". The 21st century academic and research librarians

should be abreast with current trends and be able to adapt to current changes more easily and faster to fit into current library systems of operation. Knowing what is going on around the World and being able to catch up with current trends will go a long way to meet user expectations of the 21st century academic and research library users. Developing library collection, services, and environments that are responsive to user expectations can be achieved by examining the characteristics of the users and making conscious effort to address deficiencies and transform the current situation in the library. The academic librarian provides numerous services to users, address their diverse needs, characteristics, and interests. The growing high expectations of users in demand for quick access to information can only be met with a technology driven library environment. Incorporating technological skills such as online searches for information through electronic resources thus, electronic journals, books, CD ROM, Library Management System (LMS) to mention but a few will go a long way in meeting user expectation of the 21st century academic and research librarian.

Widely available information resources; rising costs of books, serials, and electronic resources; emerging new technologies and services, providing information to potential library users are tied with the necessity to understand and define the needs and expectations of academic and research library users in order to provide the appropriate levels of satisfaction and quality of services. Simmonds and Andaleeb (2001) stated that "the new technologies and electronic resources available today raise the question whether the library as a place has become a dinosaur. Do users need a physical library if almost everything can be accessed electronically?" Librarians are also expanding the library's virtual presence through involvement in course management systems and online social networking sites, the creation of online tutorials and other instructional aids, and more vibrant and interactive Web sites. How to convey the value of the complementary nature of the physical and online services to support the teaching and instruction mission of the university to campus administrators presents an ongoing challenge of the librarian being more innovative and skillful. A skill is a practical ability to work on/with machines, tools and devices as well as being able to carry out a task or perform a function. Most of the skills could be learned on the job, at workshops and trainings, continuing education programmes, etc., adding to it, one's creativity and competence, e.g. developing skills for learning new technologies, troubleshooting technologies, to mention but a few. This calls for a Continuous Professional Development programmes for librarians in order to avoid being obsolete and to be able to meet current trends of user needs.

Continuous Professional Development
Professional Development is given as an orientation and training to professionals to improve upon their professional skills whilst on the job. Continuous Professional Development (CPD) programmes are ongoing professional training offered to

professionals to improve upon their professional skills whilst in service and after the mainstream traditionally structured education. Professional Development begins as one embarks on his/her career when inducted into an office. Professional Development must be continuous throughout one's career. According to Huckle (2001), CPD is a systematic ongoing process by which we can broaden and deepen our skills in addition to updating them. Shu Guo (2014), quoted Deiss (2001) mention that it is necessary to create "not only environments where continuous learning flourishes but systems that ensure continuous learning" because of the constant state of change in the library world. The library environment in recent times will be made comfortable and librarians will not become obsolete if library professionals continue to groom themselves and acquire the various competencies and skills required of technology use in the new library work environment. These technologies, skills and more are the demands of the current library environment which librarians can only learn through Continuous Professional Development programmes such as the Carnegie CPD programme, library seminars, conferences and workshops, to mention but a few. This means that librarians cannot enroll back into the traditionally structured regular classrooms of LIS schools to learn new emerging library technologies and skills except for a Continuous Professional Development training programme.

The Carnegie Corporation of New York provided funds to support ICT training programme titled "Enhancing librarians' ICT skills for research enablement in African universities" for five Carnegie affiliated countries namely; Ghana, Uganda, Nigeria, Tanzania and South Africa to address ICT challenges for university libraries. The University of Pretoria in 2013 announced a four-week residential Continuing Professional Development (CPD) programme for qualified librarians from the Sub-Saharan Africa, for the period 2014 to 2016. The programme started in 2014 with two intakes as was the initial plan. The first intake started in May 24 to June 21, the second intake started November 1st to 29, 2014. Upon the realization that many librarians applied for the programme, the intake was increased to three in 2015 and 2016. The programme would continue till end of November, 2016. There have been five intakes as at the end of year 2015 with a total number of 30 Ghanaian participants. The programme presented a study content in areas such as; Digitization, Cloud services and storage, Mobile technologies, Devices used for information retrieval in libraries, Social media, Research Data Management (RDM), Virtual Research Environment (VRE), Open Access Repository, to mention but a few. The main objective of the study is to examine the contents of the Carnegie CPD programme and to find out whether it achieved its intended objective of developing new skills required by LIS professionals for the 21st century in Africa.

Specific Objectives
Specifically, the study sought to:

1. Ascertain the programme content of the Carnegie CPD. programme
2. Find out whether the Carnegie CPD programme has developed the technological skills of LIS professionals.
3. To find out whether participants have been able to transfer their new skills on their jobs and imparted their new skills and knowledge to others.
4. To make recommendations for improvement in future CPD programmes.

Research Questions
1. What are the contents of the Carnegie CPD programme?
2. What are the levels of participant's technological skills and work experience before and after the programme?
3. How has work performance improved after the programme?
4. Have participants been able to impart the skills learnt to others?
5. What are the hindrances to the application of skills learnt?

Literature Review
The literature review of the study covered major aspects of the Carnegie CPD programme that were on technologies, new innovations and skills. These are library digitization and digital technologies, cloud services and storage, mobile technology use in libraries, mobile device use for information retrieval in libraries, social media in libraries, research data management, virtual research environment and open access repositories. Some studies on the importance of technological skills and innovations to LIS professionals were also reviewed.

Skills
Skill is generally a competence, knowledge and the ability to do things. Unlike constructs in the natural sciences, skill is one of those social science words in common parlance with many meanings, numerous synonyms such as "ability", "competence", "knack", "aptitude" and "talent", and varied imprecise translations in other languages, e.g. computer skills. Singh, S.P and Pinki (2009) quoted Clarkson (2001) and stated that "skill is practical ability, a facility in carrying out an action whereas, competence is often defined as the underlying attribute and mental ability that govern how an individual interact with the world". Clarkson (2012), stated that "competence enables individuals to contribute positively to their organizations and the library profession. Skill can be seen in an action in the way someone carries out a task, competencies are hidden inside the person but influences how he/she uses his skills. Three skills emerge, i.e., generic skills, e.g. innovation, analytical, service attitude, interpersonal, etc.; managerial skills, e.g. user needs analysis, resource management, information seeking, etc.; and professional skills, e.g. information technology, information literacy, technical professional, knowledge

management and traditional skills. A combination of these skills will make for good professional work.

Digital Technologies

Technology has become a pillar holding all library activities and operations in recent times. The access of digitized information through technological equipment and devices with skills has become paramount. Digitization is defined as the managed conversion of analogue material to a digital format for ongoing access by electronic devices during the intended life cycle of the digital object, (Groenewald; 2009). Digitization is not just a normal desktop scanning, not black and white scanning and/or scanning directly to PDF. Rafiq and Ameen (2013) defined digitization as "a process of converting, creating, and maintaining books, art works, historical documents, photos, journals, etc., in electronic representations so they can be viewed via computer and other devices. Adding that, "The creation and use of digital information is increasing worldwide. The demand for digital contents has influenced the information business from production to dissemination. Information publishers and libraries are switching to electronic means of information production and dissemination". Explaining further, digitization is true colour output scanning for archival purposes, hardware calibrated scanning, storage in an uncompressed format. Dooley (2015), has stated that, "Archivists and special collection librarians bring unique expertise to the management of digitally created research library materials, both during the planning and policy development stages and at other key points throughout the acquisition-to-access life cycle". Some equipment available for library digitization are Super scanner, Nikon slide scanner, i2S DigiBook scanner, PlusDeck 2c, Nikon 9000 Coolscan, Scribe scanners, Epson 1740 X, Kodak/Minolta Microfiche scanner, iTTUSB Turntable, etc. These scanners are used with software and skills to be learnt.

Digitization begins with scanning documents into images such as jpeg, png and tiff, editing, converting edited documents into PDFs and uploading onto a digitized archive system with copyright information attached. According to Fenton (2016), digitization begins with scanning items. An atlas could be captured by highest-quality photographing electronic representation process with metadata provided, evaluated and copyright information attached. Super scanner scans books, theses and dissertations. It can scan up to 7-1000 pages. A scan can be done in Photoshop (Adobe) and compressed into pdf. Nikon slide scanner can scan 1 slide at a time. More than 44,000 documents can be archived in the repository. Software used to scan and edit documents include, GNU Image Manipulation Programme (GIMP) for scanning, ABBYY fine reader, Adobe Photoshop and Adobe Acrobat Pro for image manipulating and editing. Documents scanned and edited are archived in an Institutional Repository (IR), Calibri electronic

storage software or into Zotero for easy retrieval and reference. Rafig and Ameen (2013), asserted that, "in recent years we have also witnessed large scale digitization efforts from sector giants like Google's Book search, Microsoft's' Live Search Books, and the Million Book Project led by the Carnegie Mellon University School of Computer Science and University Libraries."

Cloud services and storage

In the simplest terms, cloud services and storage means storing and accessing data and programs over the Internet instead of your computer's hard drive or external storage devices. The cloud is just a metaphor for the Internet. A license is required for use with space allocation. A community cloud service can be obtained by consortia, associations, institutions and groups, etc. Sosa-Sosa and Hernandez-Ramirez (2012) stated "a cloud environment provides omnipresence and facilitates deployment of file-storage services. It means that users can access their files via the Internet from anywhere and without requiring the installation of a special application. The user only needs a web browser". There are three categories of cloud services: 1. Platform as a Service (PaaS), 2. Infrastructure as a Service (IaaS), and 3. Software as a Service (SaaS). Cloud service is all about renting a server space, it is economical and used effectively in libraries. Software as a service provides access to application software, e.g. Dspace and Google tools for storage, Gmail, Google Calendar, Drive (Documents, Forms, Sheets, Groups), Flickr, etc., are tools for cloud computing. There can be an on-campus private cloud service. Other public cloud storage are Amazon S3 (http://aws.amazon.com/en/s3) Rackspace (http://www.rackspace.com/cloud/cloud/public/files), and
Google storage (https://developers.google.com/storage)

Innovations in Libraries

Current innovation in Libraries include:
a. 'MakerSpaces' that enables peer learning, curiosity, experimental play collaboration, inquiry, creativity, knowledge networks, trans-literacy, etc. with the use of plastics and a 3D Printer.
b. IPhone or iPad connected to a laptop for a PowerPoint presentation with an application called "Slide Shark".
c. QR-Codes for information dissemination.
d. Discoverable tools

According to Groff (2013), "skills for an adult life include technology literacy, and people who do not acquire and master these competencies may suffer from a new form of the digital divide, which will impact negatively on their capacity to effectively operate and thrive in the new knowledge economy".
Mobile Technologies and Applications for Information retrieval/dissemination

The digital storage of data facilitates information retrieval, allowing a new wave of services and web applications that take advantage of the huge amount of data available (Sosa-Sosa and Hernandez-Ramirez; 2012).

Smart phones such as Windows phones, iPhones, Androids phones and tablets such as iPad, Androids can be used with mobile applications for information dissemination. Applications such as, QR-Codes, kindle app, WhatsApp, CamScanner, Make my notes, Messenger, office documents, OneDrive, emails, Podcast, Skype, Truecaller, Viber, Instagram, imo, Skype, EBSCOHost, to mention but a few are skills use with mobile devices and applications for communication and information dissemination. EBSCOHost mobile application is a Journal search platform on mobile phones and on tablets. mobile application aids in browsing and searching contents and citations, abstract view, bookmark and share articles, hyperlinked references, audio and video supplements.

Social media
Social media is a platform connecting people for information sharing in text, images, etc., irrespective of their geographical locations. Social media disseminates information very easily and faster.

Social media is changing the way in which libraries disseminate scholarly information, the role of academic library to support the academic activities of the faculty, staff, students and other researchers of a university. Social media has come to stay with us and has become a part of the society's activities. The librarian must move out of the traditional library setting, physically or virtually, into a new framework for providing services, become fully engaged, be a part and provide support for research teams. He or she must also work directly with faculty and departments and serve as collaborator of research projects. Social media drives the visibility of research as it is used for networking and research collaboration as well as show of knowledge and creativity, e.g., Blogs - , ORCID (orcid.org) - connects research and researchers together, Researchgate (www.researchgate.net) - a platform used to find researchers for collaboration, and Google citation using Google Scholar - used to share scholarly publications with researchers. Research librarians can use more than one of these sites for visibility of research outputs. Other social media platforms LIS professionals can use are:

   a. Facebook - a platform for social networking, sharing of information, ideas, feelings, thoughts through text, pictures and videos and for collaboration.
   b. Twitter - a platform for social networking, sharing of information, ideas, feelings thoughts through text, pictures and videos and for collaboration.
   c. YouTube - a social media platform that communicates through videos.
   d. LinkedIn - a professional platform used to connect people, advertise your profession and work, share ideas and discover opportunities.
   e. WhatsApp Messenger for Android, iPhone, Nokia, BlackBerry and Windows Phone - a cross-platform mobile application that allows for the exchange of

message through texts, files, videos, images and audio without paying for SMS charges. Internet data plan is used. Group platforms can be created for discussion, unlimited information sharing. WhatsApp now have a voice over function.

www.whatsapp.com/

  f. Flickr - and online photo management and sharing application that host a website for videos and images.
  g. Viber - provides smartphone application functions for instant messages and voice over IP (VoIP). Videos, audio, images in addition to text can be sent through Viber.
  h. Skype - computer, smartphones and tablets application use for video chat, voice call and sending texts or files. Skype is used for video conference calls on Microsoft Windows, Macintosh and Linux, Blackberry, Apple and Windows phones.

At least two or more of these could be used by a library for user enquiries and information dissemination.

Web technology skills for Virtual Research

Various web technology forms have evolved. From web 1.0, to web 2.0, web 3.0, web 4.0 and the coming of web 5.0. Web 1.0 as web of cognition i.e. read only web, Web 2.0 as people-centric and participative web i.e. read-write web, Web 3.0 as web of knowledge connection i.e. read-write execution web, Web 4.0 as Ultra-Intelligent Electronic Agent i.e. read-write-execution web with concurrency and Web 5.0 as a quasi-emotive web described as fifth generation web. These include the social media tools such as Facebook, Blogs, Twitter, Google images, Academia, Wikispaces, Pressbooks, ORCID, ResearchGate, LinkedIn, Google Citation, Zotero, Skype chat and Webinars to mention a few. Users must be connected on Facebook or any social media platform for information sharing. LIS professionals must be connected in groups to market the library on a social media platform and think about the library operations daily. These platforms can be used by professional librarians, researchers, and students.

The use of web technologies with the Internet has opened up new possibilities in research methods and approaches. The emerging global scientific research infrastructure and practice require unique and complex skills. Virtual Research Environment (VRE) relates to the computing power and infrastructure required for data intensive research. VRE is all about putting together a research work by a group of collaborators irrespective of geographical locations- a collaborative online work environment which also allows for a very personalized environment. VRE, in other words, is a framework/interface that gives access to tools, services and resources also to online experts. It has commonalities with e-Learning/ e-Research infrastructure. Electronic Research (E-Research) is a new way of doing research, collaborating globally and nationally using ICT infrastructure and skills.

The following platforms are used with online collaborative research and can be used by LIS professionals to offer them an easy way to do research by co-authoring:

a. Wikispaces (www.wikispaces.com) - a platform used for collaborative writing.
b. Pressbooks – also a platform used for collaborative writing.
c. Academia – (academia.edu) is a platform used to share and follow researchers and research work.
d. Google Drive and Google files.
e. Google citation using Google Scholar - used to share academic works for other academics/ researchers to see one's publications. Researchers are to use more than one site where research output can be found.
f. LinkedIn a professional platform used to connect people, advertise your profession and work, share ideas and discover opportunities.
g. ORCID (orcid.org) - connects research and researchers.
h. ResearchGate (www.researchgate.net) - a platform used to find researchers for collaboration.

Being a part of the global research community makes it easy for collaboration. There is therefore the need for LIS professionals to support all research processes.

Research Data Management (RDM)

Managing data is an integral part of the research process. Academic and research libraries are recently implementing Research Data Management (RDM) services to support university research activities. RDM is the process of controlling the information generated during a research project. Cox and Pinfield (2014) quoted Pryor, (2012) and White and Tedds (2011) stated that "the management of research data has recently emerged as a strategic priority for universities. How data is managed depends on the types of data involved, how data is collected and stored, and how it is used throughout the research lifecycle." Surkis and Read (2015), asserted that "data management is essential to making data discoverable, accessible, and understandable and making things discoverable, accessible, and understandable is a key part of what librarians do". Clement (2013), stated that "the Current Research Information System (CRIS) stores research outputs, outcomes, impacts and activities either via harvesting from third-party sources, such as Scopus and Web of Science, or manual data entry by researchers. Cox and Pinfield (2014), asserted that "the pervasive use of powerful computing technology across disciplines now means that an increasing number of researchers generate and use large datasets as part of the research process. There is a demand by governments who support research and research funding organizations on research grant recipients to make their research data accessible to the public for reuse for further research. There are national initiatives on how research and academic institutions will develop and provide data management services. The Cape Peninsula University of Technology (CPUT)

Library, which is part of a new division that focuses on Knowledge, Information and Technology Services (KITS), is taking a leading role in creating platforms, systems and processes for the management of research data. The KIT division is made up of Library Services, e-Learning and Educational Technology Services, Management Information Systems (MIS), Computer and Telecommunications Services (CTS) as well as the Web Development and Innovation Office. Within this environment the library has better access to technology services and to various working committees created to drive knowledge, information, data and, technology services within the university, (Chiware and Mathe; 2015). These technology services and skills are vital for the LIS professional for the 21st century.

The need for LIS Professionals to use these skills
There is the need for LIS professionals to graduate with basic Internet searching skills as well as continuously building the professional skills for work performance. According to Sosa-Sosa and Hernandez-Ramirez (2012), "Students in the field of library science have to major in Library and Information Management and at the same time taking a minor in Information Systems Management. This will strengthen their knowledge in ICT besides having a solid background in library science". In order to keep up with the rapid change of technology and skills use in libraries, there is the need to learn new emerging skills and strategies used to provide library services and be able to reach most users to satisfy their diverse needs faster and easier. Groff (2013), has explained that "technology is an integral part to accessing the higher-order competencies often referred to as 21st century skills, which are also necessary to be productive in today's society". In order to work comfortably in the online medium, basic Internet and searching skills are paramount. Acquiring the skills and competence to search for information online makes one feel comfortable working with the online medium. Being able to use search engines and electronic resources will help facilitate the work of librarians. Troubleshooting problems for users, providing online reference services through e-mails, Facebook, Twitter, WhatsApp, links to finding information, to mention but a few, makes one enjoy library work.

The following are some reasons why new skills are required by LIS professionals for the 21st century:

- **Avoid the use of "out of order":** Learning simple troubleshooting of new technologies will help to avoid turning your users away often. Learning the use of photocopiers and being able to remove paper jam, the use of scanners, fixing a printer, computer and any other technology equipment available in the library will avoid the use of "out of order" poster on library equipment whenever there is a

little technology issue. Playing with the technology equipment in the library and learning to fix problems as they occur will facilitate work in the library.

- **Knowing and considering the needs of all stakeholders:** Librarians need to understand how any changes in the way the library provides services will affect all stakeholders. Sometimes we focus on the needs of one group and ignore the fact that the changes that will benefit one group will not benefit another. With any change, librarians should create a list of all of the different stakeholders and actually discuss how it will affect each of them. "Stakeholders" here mean not only our patrons but the library and IT staff, as well as administrators. If you implement a project that library staff don't support, the likelihood of success is poor.

- **Vision to translate traditional library services into the online medium:** With the growth of the distance learning and the fact that so many patrons access the library from the Internet, it is important that librarians can translate traditional library services into the online medium. This includes readers' advisory, reference, and instruction services. To know how we can provide equivalent services to people who only access the library from online, librarians need to know how to capitalize on the technologies and skills. For example, the use of HTML, Blogs, Wikis, Screen casting, Information Management (IM), to mention a few. Also, to provide the services Easy Proxy, SharePoint for external access to resources by patrons.

- **Critical of technologies and ability to compare technologies:** This can be a toughie. It's often difficult to figure out what the right tool for the job is. Librarians need to know what the requirements of a project are and what each available technology can do. They need to be able to compare different versions of the same type of software to figure out which will best meet patrons' needs. Librarians also need a sense of pragmatism about technology and also need to avoid technolust, such as 'we shouldn't just implement Wikis because Wikis are cool and we really want to use them.' There is nothing magical about the technologies, what matters is how they are used. There should be a felt need for a particular technology rather than adoption because they are cool to have.

- **The need to market modern library skills and ideas:** New library skills and ideas have to be "sold" to administrators, IT staff, faculty, colleagues, and students. Whenever a service is made available for patrons, there is the need to market the service to the all users, train and guide them on how to use such a service so that they will actually make use the library services, e.g. marketing

reference services using QR-Codes, emails, Facebook, Twitter, Blog, information literacy programmes, e-resources use, arrival of new books, to mention a few.

Hashim and Mokhtar (2012), are of the view that librarians and information professionals of the 21st century must be equipped with a wide range of personal and transferable skills in order to manage the changing environment in which they work. According to them acquiring new technological skills will make librarians more effective managers of networked resources and services. The information professional must change and adapt to the new electronic information environment, he or she must learn about new technologies and be aware of the strengths and weaknesses. Librarians should not feel threatened by computers and technical developments but should move forward with the new technology and take a pivotal role within organizations especially with the increasing number of remote users and borderless libraries.

It is the considered view of Mazumdar (2007) that the rapid development of information technology and communication system has brought a revolutionary change in the organization and management of information. In present electronic information age, where information is treated as an economic resource, a marketable commodity and as a social wealth, librarians are expected to play an active and important role in the process of information communication system. Libraries are facing new challenges, new competitors, new demands, new expectations and a variety of information services from users. They therefore need to be more acquainted with the skill of handling new technologies related to collection, processing and dissemination of information in order to remain relevant as professionals.

Research Methodology

The triangulation method of research comprising qualitative, quantitative and the observation method was adopted. Qualitatively, the descriptive approach of the qualitative research method was adopted as the CPD programme is an on-going programme with a long-term effect. Quantitatively, questionnaire was administered online to the respondents through survey monkey. The target population for the study was the five groups of Ghanaian beneficiaries, i.e. Groups 1 to 5 of year 2014 and 2015 respectively. Out of the 30 expected respondents, 25 responses representing 83.33% were received and analyzed.

Findings and Discussions

**Table 1**- The Carnegie CPD Ghanaian groups and numbers

Group	No. of Responses	Percentage	CPD Intake	% Intake	% Responses
Group 1	5	20%	7	23.33%	16.66%
Group 2	6	24%	6	20%	20%
Group 3	6	24%	7	23.33%	20%
Group 4	4	16%	5	16.66%	13.33%
Group 5	4	16%	5	16.66%	13.33%
Total	**25**	**100%**	**30**	**100%**	**83.33%**

Table 2 - Participating Institutions from Ghana, Group 1 - 5, 2014/2015.

| Respondents	Respondent Institution
1	Accra City campus (university of Ghana)
2	Ashesi University College
3	Community University College, Takoradi
4	Ghana Armed Forces Command and Staff College
5	Kumasi Polytechnic
6	Kwame Nkrumah University of Science and Technology
7	Methodist Univ. College
8	Takoradi Polytechnic
9	University for Development Studies
10	University of Cape Coast, Ghana
11	University of Education, Winneba
12	University of Ghana
13	University of Mines and Technology

The above listed Ghanaian institutions participated in the Carnegie CPD Programme in 2014 and 2015 respectively. The 25 respondents that participated in the survey were from the 13 institutions from where the 30 CPD participants were selected. Participants were selected from both public and private institutions.

Table 3 - Level of technological innovations and Skills before the Carnegie CPD Programme

Indicate your level of innovations and skills in the following before the Carnegie CPD programme?
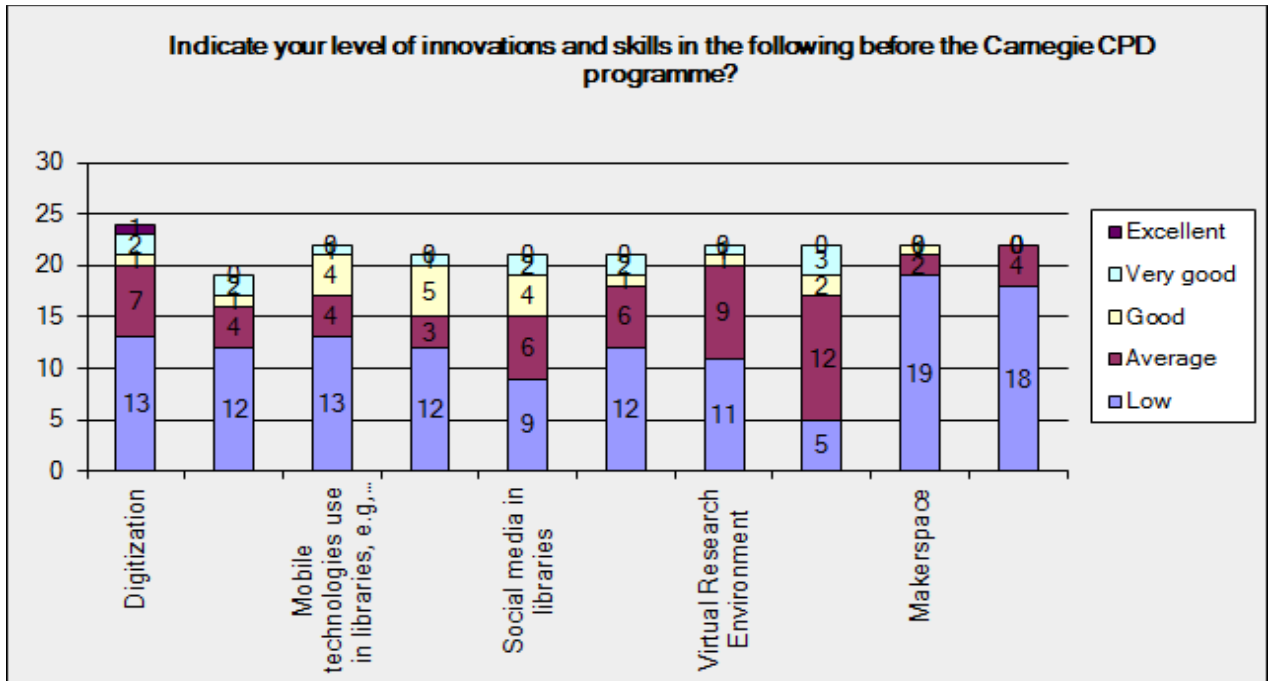
The responses received on the level of technological innovations and skills before the Carnegie CPD Programme showed most of the respondents had average low level technological and innovation skills especially Makerspace, 3D Printing, Open Access Repositories Mobile Technologies and Digitization before they attended the Carnegie CPD. On the other hand very few of the respondents were familiar with technological innovations.

Table 4 - Level of skills and experience in technological innovations after the CPD Programme.

What is the level of your work experience after the programme?
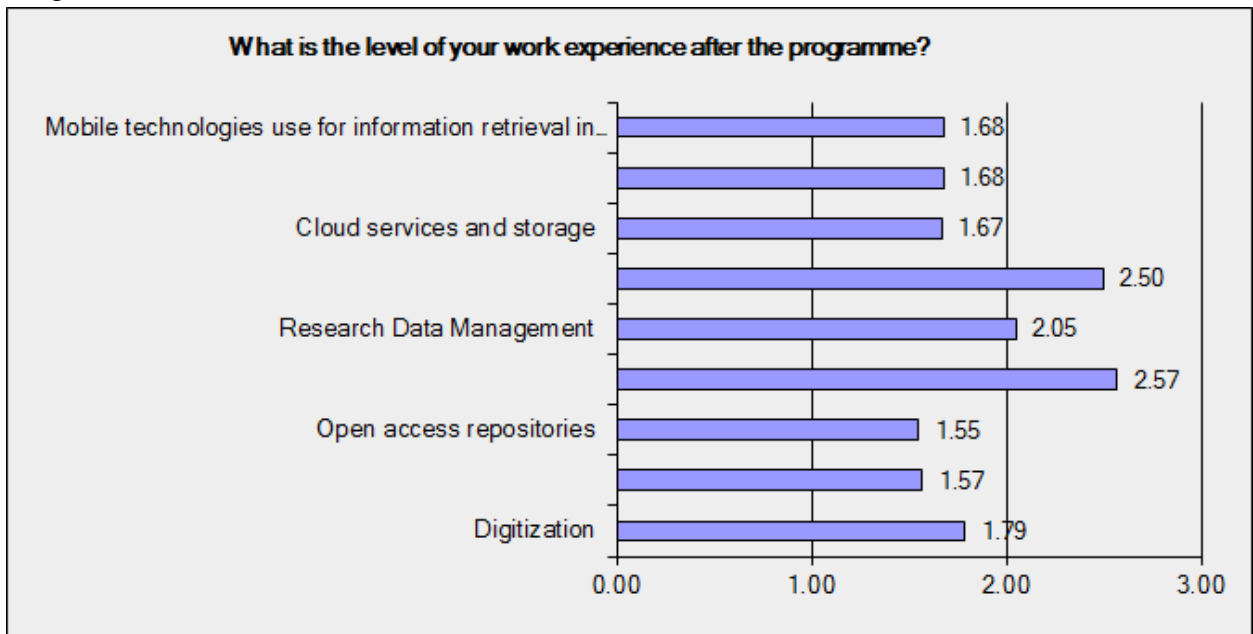
On the other hand, responses received on the level of technology innovations and skills after the Carnegie CPD Programme showed that almost the same number of respondents who indicated that they had average and low skills in technological skills indicated moved from the unknown bracket to the known bracket, an indication that the CPD programme improved on the level of technological innovations and skills of the respondents.

Figure 1. Improvement of work performance after the Carnegie CPD programme
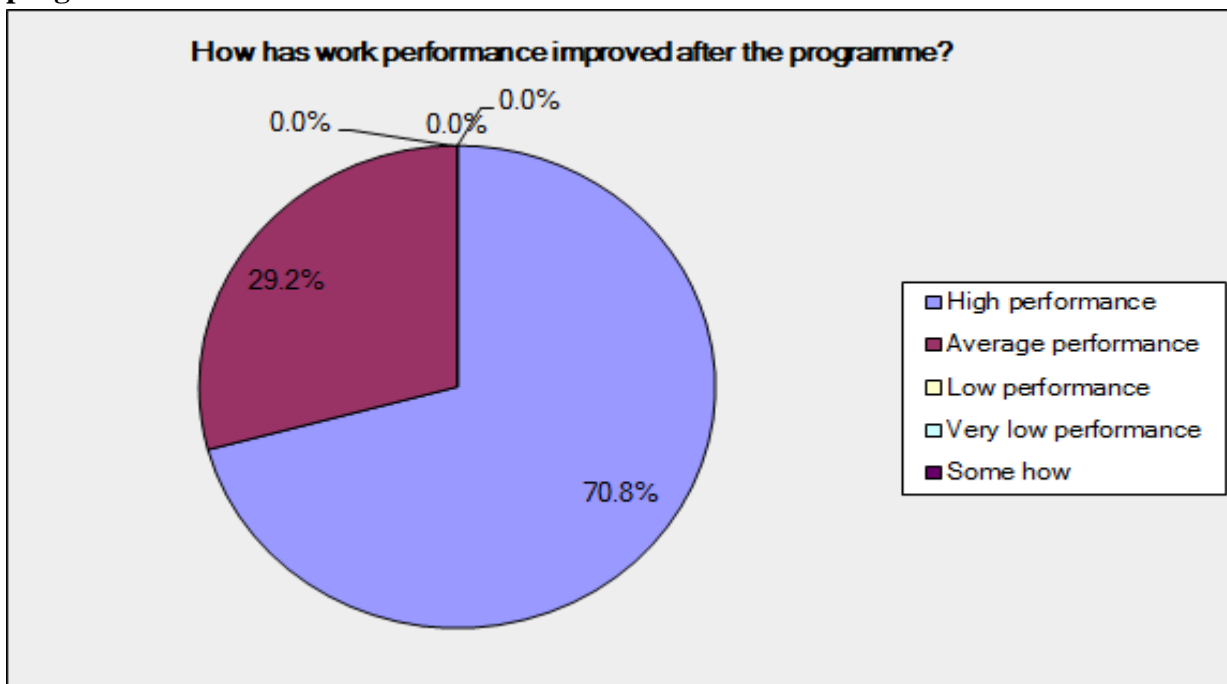
In figure 1 above, the responses on the improvement of work performance after the Carnegie CPD Programme shows a high-performance rate of 70.8% and average performance rate of 29.8%. None of the respondents indicated his/her performance is low or very low. This shows that the intended objective of programme so far as improvement of work performance is concerned was achieved.

Some benefits Carnegie CPD participants have derived from the programme
The Carnegie CPD participants stated that they had derived the following benefits from the programme.
- Acquired knowledge and skills in mobile technology; and the effective use of social media to facilitate library services.
- Cloud computing, Data management Digitization.
- The use and importance of institutional repositories.
- The concept of makerspace to faculty and colleagues.
- Exposure to devices and technologies that are improving the lot of academic

library service providers.
- Improved understanding of research skills and related issues.
- Professional networking opportunities and collaborations.
- Presentation and Leadership skills.
- The use of mobile technologies for information retrieval.
- How to manage personal information.
- The clue to emotional intelligence.
- Creativity in the library profession for fast and effective service delivery.
- Local and international professional networking and collaboration.

Challenges CPD participants are faced with, in their bid to apply the skills they learnt during the training.

When the respondents were asked to indicate challenges, they faced in their bid to apply the skills learnt during the CPD programme, the following responses were obtained.
- The lack of logistics: resources are very limited to practice the skills learnt.
- Lack of infrastructure: technology systems and equipment are hard to come by.
- Usual fight with ICT staff who think it is their domain.
- Colleagues, not having the same skills to ensure teamwork and collaboration.
- Limited Internet bandwidth and lack of space.
- Challenges with advocacy leading to slow acceptance to proposed changes.
- Unavailability of budgetary support.
- Bad Internet facilities in the university.
- Unavailability of certain resources such as 3D printers to practice what was learnt.

Figure 2. Overall Assessment of the Carnegie CPD Programme
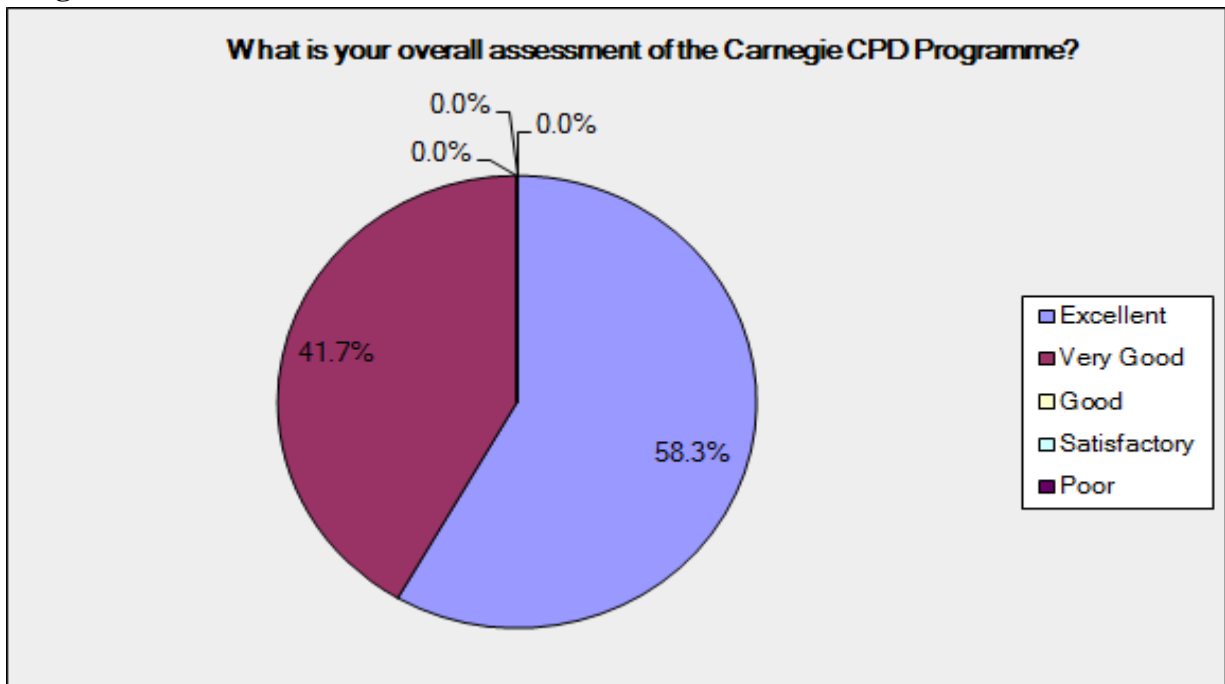
On overall assessment of the Carnegie CPD Programme by the respondents as shown in Figure 2, 58.3% of the respondents indicated that the programme was excellent whilst 41.7% indicated that the programme was very good. None of the respondents said that the programme was poor or satisfactory. This is a plus for initiators and the organizers of the programme and they need to work hard to maintain the standard if not improve it.

Experiences and knowledge CPD participants have imparted to their Colleagues

The respondents indicated that they had been able to impart the following experiences and knowledge to their colleagues.

- The library staff have been trained on cloud computing, storage and effective use of ICT to enhance library services delivery
- Colleagues have been introduced to the concept of makerspace, steps in digitization, the use of social media to reach out to more clients. Many had felt social media was for personal use.
- Colleagues have been introduced to the use of QR-Codes for information dissemination, how to customize KOHA and Dspace for the automation of some of the library services, personal information management, the use of mobile technologies and the process of research.
- Faculty and students have been introduced to the use of reference management software, e.g., Zotero and Google scholar features.

Conclusion

With the drastic changes and developments of new technologies and skills, most organizations and institutions are adapting to new technological changes and developments for service delivery. Libraries are also institutions that support research organizations and cannot be left out in the technological era of new skill that are used to collect, organize, manage and disseminate information and knowledge. Most library users are using technologies and skills to communicate, share information and many other activities. If the users of libraries are into the use of these new technologies and skills, why not the librarians, that do provide services to these users. The library staff use some of these technologies to do things for themselves, for example, Facebook, WhatsApp, Twitter, Instagram, Emails, digitization, to mention but a few, so why not for library activities. Librarians will then not just be seen as managers of information but also managers of knowledge. The Carnegie CPD programme achieved its intended objective of equipping up and coming LIS professionals with new skills and knowledge for the 21st century. Librarians are grateful to the University of Pretoria CPD faculty and the Carnegie Corporation of New York for the great opportunity to learn new technologies. It is our fervent hope the recommendations made by the participants would be considered by facilitators of the programme in order to improve it to benefit other types of libraries and more LIS professionals.

Recommendations for Improvement in the Carnegie CPD Programme

When the participants were asked to make recommendations for improvement of the programme, the following recommendations were made:

- The Duration of the training should be extended because the 4-week period was too short as regards the programme content. Two months training is therefore recommend.
- The CPD Programme should be organized more often to enable most librarians participate to enhance service delivery in libraries.
- There should be continuity with the use of webinars for those who have already participated. This will serve as refresher courses.
- Replication of the Carnegie CPD Programmes in other sectors such as colleagues in the Research Libraries for a greater benefit, as it is currently centered on only Academic Libraries.
- The programme should be upgraded to the postgraduate level.
- Heads of libraries/ library Directors should also be invited to undertake this training for them to know what people who go through this programme have done. This will enable library Directors to appreciate and facilitate means of integrating the new ideas into the library profession.
- Enough time should be allocated to digitization since it forms the hub of the

current age librarianship.
- More of such trainings should be conducted in subsequent years. This should be done continuously.
- Heads of Libraries and institutions should include in the yearly budget, new technology equipment for use by the libraries.
- Heads of libraries and Academic Registrars should recommend and approve CPD training programmes for the library staff.
- Financial support should be given by libraries for the CPD programmes.
- The Carnegie CPD programme was very intensive therefore, the certificates awarded should be   recognized by universities.
- The stipend should be increased.

References

Bushey, J., Demoulin, M., & McLelland, R. (2015). Cloud Service Contracts: An Issue of Trust. Les Contrats de Service D'informatique En Nuage : *Une Question de Confianc*e., *39*(2), 128–153.

Chiware, E., & Mathe, Z. (2015). Academic libraries' role in Research Data Management Services: A South African perspective. *South African Journal of Libraries & Information Science, 81*(2), 1–10. Retrieved June 1, 2016 from http://doi.org/10.7553/81-2-1563

Clarkson, M. (2012). *Developing IT Staff: A Practical Approach*. London: Springer Science & Business Media. London.

Clements, A. (2013). Research information meets research data management in the library? Insights. *The UKSG Journal, 26*(3), 298–304. Retrieved May 31, 2016 from http://doi.org/10.1629/2048-7754.99

Cox, A. M., & Pinfield, S. (2014). Research data management and libraries: Current activities and future priorities. *Journal of Librarianship and Information Science, 46*(4), 299–316. Retrieved May 31, 2016 from http://doi.org/10.1177/0961000613492542

Dooley, J. (2015). The Archival Advantage: Integrating Archival Expertise into Management of Born-digital Library Materials. Dublin, Ohio: OCLC Research. Retrieved July 9, 2016 from http://www.oclc.org/content/dam/research/publicaions.2015/oclcreserach-archival-advantage-2015.pdf

D'archivage Dans Un Nuage Informatique: Portabilité, Continuité et Durabilité: Aspects de La Conservation à Long Terme Des Documents Signés électroniquement. 39(2), 210–227. Digitization Capabilities of University Libraries of Pakistan: An Analysis.

Fenton, W. (2016). *Turning the Page on Library Digitization*. PC Magazine, 38.

Hashim, Laili bin and Mokhtar, Wan Nor Haliza Wan (2012). Preparing New Era Librarians and Information Professionals: Trends and Issues. *International Journal of Humanities and Social Science, 2*(7). 151 - 156. Retrieved May 31, 2016 from http://www.ijhssnet.com/journals/Vol_2_No_7_April_2012/16.pdf

Huckle, M. (2001). CPD: chartering and beyond. *Impact, 4*(3), 45-59.

Jimba, S. W., & Atinmo, M. I. (2000). The influence of information technology access on agricultural research in Nigeria, Internet Research: *Electronic Networking Applications and Policy, 10*(1), 63-71. Retrieved July 9, 2016 from http://dx.doi.org/10.1108/10662240010312110

Lampert, C., & Vaughan, J. (2009). Success Factors and Strategic Planning: Rebuilding an Academic Library Digitization Program. *Information Technology & Libraries, 28*(3), 116–136.

Lippincott, J. K. (2008). Mobile Technologies, Mobile Users: Implications for Academic Libraries. ARL: A Bimonthly Report on Research Library Issues & Actions, (261), 1–4.

Mazumdar, N.R (2007). Skills for Library and Information Professionals working in borderless libraries. 5th Convention Planner - Gauhati University, Guwahati, December 7-8, 2007, INFLIBNET Centre, Ahmedabad, 421-430.

Murray, T. E. (2014). When a Library Shuts Its Doors: Collections and Information Services After a Library Closure. *Journal of Library Administration, 54*(2), 147–154. Retrieved July 9, 2016 from http://doi.org/10.1080/01930826.2014.903370

Raina, R. L (2000) "Competency Development among Librarians and Information Professionals." XIX IASLIC Seminar, Bhopal, 211-216.

Roy, A., Sarkar, S., Ganesan, R., & Goel, G. (2015). Secure the Cloud: From the Perspective of a Service-Oriented Organization. *ACM Computing Surveys, 47*(3), 41:1–41:30. Retrieved May 31, 2016 from http://doi.org/10.1145/2693841

Sosa-Sosa, V. J., & Hernandez-Ramirez, E. M. (2012). A File Storage Service on a Cloud Computing Environment for Digital Libraries. *Information Technology & Libraries, 31*(4), 34–45.

Stancic, H., Rajh, A., & Brzica, H. (2015). Archival Cloud Services: Portability, Continuity, and Sustainability Aspects of Long-term Preservation of Electronically Signed Records. *Canadian Journal of Information and Library Science, 39*(2), 210-227

Simmonds, P. L., & Andaleeb, S. S. (2001). Usage of academic libraries: the role of service quality, resources, and user characteristics. *Library trends, Spring, 49*(4), 626-634. Retrieved June 30, 2016 from https://www.ideals.illinois.edu/bitstream/handle/2142/8368/librarytrendsv49i4f_o pt.pdf?sequence=1

Sims, C. (2016). Communication Tools The School Library Newsletter. *Teacher Librarian, 43*(4), 28.

Singh, S. P., & Pinki. (2009). New Skills for LIS Professionals in Technology-Intensive Environment. ICAL, 331–336. Retrieved June 12, 2016 from http://crl.du.ac.in/ical09/papers/index_files/ical-55_200_422_3_RV.pdf

Surkis, A., & Read, K. (2015). Research data management. Journal of the Medical Library Association: JMLA, 103(3), 154–156. Retrieved June 12, 2016 from http://doi.org/10.3163/1536-5050.103.3.011

Wright, J. (2014) Academic Libraries in the Digital Age: Best Practices for Modernizing the Library. *Online Journal of Distance Education and E-Learning, 2*(2), 1 − 4. Retrieved June 12, 2016 from http://www.tojdel.net/pdf/v02i02/v02i02-01.pdf

LIBRARIANS' PERCEPTIONS OF RESEARCH DATA MANAGEMENT AS A PROFESSIONAL DEVELOPMENT TOOL: A NORWEGIAN PERSPECTIVE

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Abstract
Research Data Management (RDM) services are new opportunities for librarians to be involved in the research agenda of their institutions and ensure openness in research. The purpose of this study was to explore Norwegian academic librarians' perspectives of Research Data Management and how they perceive their role in providing professional leadership in RDM services. The study was conducted through a qualitative approach. Qualitative methods in the form of semi-structured interviews were conducted with five library directors and library staff in selected Norwegian academic libraries to obtain their perception on RDM and their respective roles in RDM. The study found that many academic libraries in Norway are providing a variety of research data management services and participating librarians amply demonstrate their willingness to embrace the new service. Furthermore, librarians also demonstrated their awareness of deposit mandates on researchers to share their research data and this awareness is translated into their desire for more education in this emerging area in library services provision. The implication of this study for librarians in Ghana and elsewhere on the African continent is that librarians should begin discussions on how to provide specialised research support for researchers irrespective of whether there is a mandate or not.

Keywords: Research Data Management, Norwegian Libraries, Academic Libraries, Deposit Mandates, E-Research.

Introduction
The influx of Information and Communication Technologies (ICT) in research is generating huge volumes of research data as ICT has become a key tool in conducting research. This has ushered academic research into the "fourth paradigm" where research has become "more collaborative, more computational, and more data intensive" (Tenopir, Sandusky, Allard, & Birch, 2014). Some scholars refer to this phenomenon as e-research or e-science (Henty, 2008a; Cox & Pinfield, 2013; Calhoun, 2014:199). The proliferation of technology-enabled research (or cyberinfrastructure) coupled with data sharing mandates by research funding bodies for researchers has led to the rising need for research data management (RDM) services in academic libraries (Tenopir et al., 2014).

Cognisant of the value of openness in research, some developed countries have data sharing mandates in place for public funding of research. The Research Council of Norway (RCN) has a data sharing mandate that requires researchers to include a data management plan in their research projects in order to qualify for research grants and funding (Research Council of Norway, 2015). In the UK, academic institutions are also prioritizing their RDM needs (Cox & Pinfield, 2014).

Academic libraries and librarians are challenged to develop research data services in tune with the changing research needs of their users (Tenopir et al, 2014). Academic libraries have a track record in providing research support services to researchers and these are in the form of managing, preserving, and providing access to information (Monastersky, 2013). According to the Organisation for Economic Cooperation and Development (OECD), "sharing and open access to publicly funded research data not only helps to maximize the research potential of new digital technologies and networks but provides greater returns from the public investment in research". In advanced countries such as the US and Canada, individual academic libraries provide RDM leadership (Association of Research Libraries, 2010).

Statement of the problem
Even though academic institutions such as universities and research centres are strategically taking measures to support e-research, both at the academic library and individual staff levels, the technical capacity and infrastructure to support RDM activities has been questioned (Pryor, 2012; Whyte and Tedds, 2011). Henty (2008:2) makes a similar claim that institutions with the requisite skills have not been able to assist researchers in this regard. This means that the mandate from research councils will deter researchers from engaging in research since they lack the requisite skills required to write up the data management plan. Consequently, public funds would not be made available for the research. In spite of researchers' positive attitude towards sharing and archiving of research data, anecdotal evidence shows that there are also many challenges that researchers encounter in their attempt to comply with the mandate from research councils. As reported by Bruhn (2014), "...the main challenge will be ensuring that data can be stored in a secure manner while remaining accessible and not inhibit researcher careers."

Previous studies from DAMVAD outlined factors that inhibit researchers' ability to perform data management work. According to the studies, researchers do not have the technical skills to do the metadata work, which is mostly technical in nature. Moreover, there are no standardized storage infrastructures, time constraints to organize the data and finally no incentives for researchers who have agreed to share their data.

Aims of the study

From the foregoing, the focus of this study is to explore Norwegian academic librarians' perspectives of this emerging service and understand how they perceive their central role in providing professional leadership in RDM services (Lynch & Carleton, 2009). The study aims to explore academic librarians' perceptions of their roles and involvement in research data management support services. In this regard, the specific objectives of the study are to understand librarians' awareness of emerging research data mandates; and explore librarians' perceptions of their potential roles in research data management.

The results may inform and enable librarians, academic administrators, and researchers to develop RDM plans and integrate RDM into academic library services. Despite the fact that the data used in this study is of Norwegian origin, the findings have important implications for practitioners in Ghana and other emerging countries.

Review of related literature

This review involves themes related to librarians' awareness of research data mandates and librarians' roles in RDM. However, before reviewing literature on these aspects, a brief exposition on the concept of RDM is presented.

Definitions of research data management

National research councils, researchers, and information professionals are increasingly using the term research data management in most of their discussions, policies and planned projects (Lord & Macdonald, 2003; Cox & Pinfield, 2013). The University of Leicester (2017) defines the concept of RDM as "…the organisation of data, from its entry to the research cycle through to the dissemination and archiving of valuable results". Other scholars also prefer to use related terms such as "data curation, "digital curation", "digital archiving" and "digital preservation". According to Beagrie (2006) the term "research data management" (RDM) is a new concept, and as there have not been any accepted definitions, it is significant to recognise that these terms can be understood differently depending on the academic discipline of the individual person**.** For Beagrie, the challenge for assigning a suitable term persisted until 2001, when specialists in the field of information science adopted the term "digital curation". The term digital curation was primarily used at a seminar dubbed "Digital Curation: digital archives, libraries and e-science" An explanation to the use of the term "digital curation" "implies not only the preservation and maintenance of a collection or database but some degree of added value and knowledge" (Beagrie, 2006).

Research data mandates and librarians

Open access to research data is gaining a high level of popularity across countries. Norway is not an exception. Globally, research councils and other government agencies increasingly are requiring that researchers who seek for public grants make their data publicly accessible.

This phenomenon is also referred to as "deposit mandate"; a set of policies that require researchers to make their published content available in open access repositories (Calhoun, 2014:190).

In Norway, the Research Council of Norway policy on open access to research data is seen as recommendations and best practices in RDM but not mandatory. This may be due to lack of infrastructure and standards to implement (Research Council Norway, 2015). Among other reasons, Nielsen (2011) claims "the bottleneck of open science is lack of recognition". He stressed that open access activities has created lots of opportunities in our knowledge society; however, it still lacked the desired implementation. Henty (2008a) supported the claim and further explained that the lack of available policies to ensure the implementation of open access contributes to its lack of recognition.

In spite of the challenges in implementing open access mandates to research data, since its inception in Norway, there have been some activities aimed at creating awareness. The Norwegian Social Science Data Services (NSD), a national archive for research data, organise workshops, seminars, and conferences to promote their services. The NSD promotional services aim at national, international research groups, and academic librarians and other interested professionals to encourage the practices of open access to research data. In an effort to give a better reflection of the wide range of their services, the NSD recently changed its name to "The Norwegian Centre for Research Data" (Henrichsen, 2016).

Within the academic community, researchers are increasing their research capacity through technology in their research activities and this has impacted the research terrain (Tammaro & Casarosa, 2014) Manipulating data sets in a more collaborative process, more computative, and more data intensive way characterise the sudden transformation in research. This new approach to research is often coined as the "fourth paradigm" unlike until recently where science researches were involved in conducting experiments, developing theories, among others (Hey, Tansley & Tolle, 2009).

The Association of Research Libraries (ARL) defines e-research as "computationally intensive, large-scale, networked and collaborative forms of research and scholarship across all disciplines, including all of the natural and physical sciences, related applied and technological disciplines, biomedicine, social science and the digital humanities" (ARL, 2013).

Although more researchers see the opportunities in e-research and look to the library to assist, academic librarians, perhaps, also see it as an opportunity to play a part in the new research life cycle (MacColl, 2010). One major challenge in e-research is that researchers lack the technical skills to manage the massive data they generate (Henty, 2008b). The

library community is encouraged to respond to the fourth paradigm. Previous studies over the years have attempted to discuss libraries' involvement in RDM activities. In more general terms, e-research data services are still in its early stage; only few university libraries have been able to roll out some services (Tenopir et al., 2012). This claim is supported by recent studies. Steinhart et al. (2008) conducted a study on the Data Working Group at Cornell University Library. The study found that few university libraries in the US are actively involved in data curation.

There are, however, few success stories of RDM implementation in academic libraries. Macdonald and Martinez (2014) mention a few examples of university libraries' involvement in e-research services that include a "staging repository" research data service developed by DataStar at Cornell University in the US. Similarly, the John Hopkins University's Sheridan Libraries collaborated with faculty members on developing RDM plans. In the University of California Digital Library, librarians have "played an active role during the development of a new tool, the DMPTool that helps researchers create data plans online". The DMPTool has a repository feature which stores data. In the discovery feature, librarians assist users to find and access data (Schottlaender & McDonald 2007). Australian University libraries have been quick to implement RDM services (Henty, 2008a) notable among them is the Monash University Library, which has initiated several RDM activities.

In conclusion, Pinfield (2005, cited in Calhoun, 2014:191), an early advocate for deposit mandates, assures that deposit mandates of research data will result in the widespread adoption of open access, which will in turn improve the scholarly communication process. He states further that the end result of these initiatives will be greater impact of published papers and free availability of high quality scholarly content.

Librarians' roles in research data management
O'Brien (2005:68) argued that "libraries may risk fading from existence if they don't respond effectively to the changing environment. In e-research, it is the primary research data that must often be managed, made accessible and curated". Furthermore, academic libraries play implicit roles in research through librarians' involvement in the provision of access to data; advocacy and support; and managing data collections. These three roles form the nucleus of librarians' roles in RDM.

Librarians' have on-going roles in ensuring access to critical data sets for researchers. Librarians are involved in managing and preserving scholarly resources, creating more digital resources and making these resources accessible to the researcher through methods such as digitization and other digital library initiatives. These are often achieved through collaborations and partnerships with other stakeholders (Henty, 2008c). Librarians have already invested resources to digitize materials and house, preserve and disseminate digital

collections of materials in institutional repositories and developed the expertise needed to manage these repositories (ACRL, 2007).

Libraries are seen to be involved in current policy making within institutions, of course recognising that the work should be done in a collaborative manner (Cox & Pinfield, 2013). Gabridge (2009) highlights the importance of subject librarians initiating a direct contact, to understand the needs of researchers, as well as the needs of the institution. This may be forming a major component of the work of the Library. Librarians are experienced not only in navigating complex information environments, but in understanding the architecture of these environments and how they connect to the needs of research communities (Carlson & Garritano 2010).

Previous studies over the years have attempted to discuss libraries involvement in RDM both at the institutional level as well at the national level. Areas where the library can support researchers in their research activities include: Offering advice on funding sources, embedded or support roles conducting literature reviews or current awareness alerts for research projects or groups, bibliographic software training, advocacy for open access/institutional repository, data analysis advice, advice on copyright issues and advice on archiving of research records (Auckland, 2012; Garritano & Carlson, 2009).

Lewis (2010:2) opined that "…institutional repositories act as a starting point for data curation. Many university libraries for a long time have been engaged in it and it is entering the mainstream of academic library work". Later, various authors also proposed different models of libraries involvement in RDM. Paramount among them is the "Lewis pyramid model". Lewis (2010) proposed a pyramid model of nine areas of RDM activity for libraries.

At the top of the pyramid is influencing national policy; at the second level, leading on institutional policy, developing local curation capacity and working with LIS schools to identify required skills; and at the third level, developing LIS workforce confidence with data, teaching undergraduate and postgraduate students, and advisory services and data awareness creation among researchers. Corrall (2012) proposed and discussed the range of possible roles of librarians in RDM. According to Corrall, these roles include a data collection development and access management role. Furthermore, Corrall's model describes how academic libraries can collaborate with other departments within an institution, and the extent to which libraries can position themselves to lead institutional policy. Indeed, all the roles could be seen to require a "multi-professional" approach (Tenopir, 2012:302). Furthermore, Lyon (2012) identified a number of opportunities for libraries in RDM and connected the proposed roles of the library to a research lifecycle model in 10 stages. The roles are outlined as follows:
- RDM requirements gathering – through auditing (with academic departments);

- RDM planning – advocacy and guidance to researchers at all levels (with doctoral training centres).
- RDM informatics – technical advice on data formats and metadata; research data citation;
- RDM citation- providing advice on discovery, citation and re-use of datasets;
- RDM training – training to researchers (with doctoral training centres);
- Research data licensing- expert training on legal and ethical aspects of datasets;
- Research data appraisal -guidance on which data to keep;
- Research data storage (with IT services)- training on data storage and infrastructure services
- Research data access- advice on intellectual property rights and restrictions
- Research data impact (with research support offices)-training on impact assessment tools and strategies.

Lyon's (2012) research identified unique roles for libraries in RDM services. However, the precise services that the library would perform will be dependent on the context and needs of each institution. Furthermore, Cox et al. (2014) argued from a wider institutional perspective that the stakeholders involved in RDM roles are complex and though libraries are playing essential roles in RDM work, there is a need for the library as an important stakeholder to examine the roles and relationships with other stakeholders involved in RDM projects.

Figure1: Components of RDM support services (Data Curation Centre, UK)

Figure 1 portrays the components of RDM support services developed initially by the Digital Curation Centre (DCC). It describes the various "infrastructures" and "services" that universities require to develop to support research data management (Jones et.al 2013). They further broadly grouped the structures into three categories:

- An overarching governance framework to shape the delivery of services;
- Specific infrastructure and services provided at key points in the data lifecycle;
- Assistance from support staff to aid the uptake and the use of service;

The model is used as a guide for academic libraries who envisage initiating effective data management services. It outlines a "coherent strategy" and suite of services at every stage. Similarly, it addresses all the components to be examined when delivering RDM services, together with a description of the roles and responsibilities of those who may deliver and use them (Hodson & Molloy, 2014).

Research Methodology

The study was a qualitative study which made use of the case study approach. Creswell (2009) explains case studies as a qualitative research strategy of inquiry in which the researcher explores in depth a programme, event, activity, process, or one or more individuals.

RDM support services are still in the early stages of development. Few institutions in the developed world have initiated RDM services, and in the developing world, it is much rarer. In Norway for instance, few academic libraries have started planning to include RDM support services into their range of services, with most of these libraries at the initial stages. Norway was chosen as the setting of this study as it is one of the countries in Europe where RDM services in academic libraries are still in its early stages. In addition, this study was conducted by the first author, who is the principal researcher, as part of the requirements for the award of a master's degree programme in Norway. The principal researcher considered the need to include multiple institutions in Norway in the study in order to gather adequate information on current practices and perceptions on RDM services in academic libraries. This was because most of the institutions known to be involved in RDM were at different stages of development.

This research was based on the qualitative approach with both primary and secondary data collection methods. Primary sources used included semi-structured interview data from library directors and library staff in five academic libraries in Norway. The respondents of the study were three library directors and two staff who were chosen purposively. The semi-structured interviews with the respondents were conducted in the months of April to June 2015. The study also collected data from secondary sources such as the Web, journal articles, and books for purposes of triangulation.

The resulting data was analysed through the constant comparative analysis method. This strategy involves "taking one piece of data and comparing it with all others that may be similar or different in order to develop conceptualizations of the possible relations between various pieces of data" (Pickard, 2013).

Presentation of findings

Librarians' awareness of research data mandates
The first major aim of this study was to obtain insight into Norwegian librarians' awareness of research data mandates. Researchers in Norway are expected to comply with the Research Council of Norway's published policy on Open Access to Research Data. The findings showed that all the participants had prior knowledge of the deposit mandates on researchers.

One of the respondents commented that:
 "I think lots of librarians are aware of this and are working with it but few visible results yet. I am also aware of the research council mandate and the formulation of it. I think it is a good thing that the research council is launching these guidelines." (ST1)

Two of the participants also stated that the knowledge gained from the published policy have also influenced the services of their libraries.

"The mandate of the research council also affects the library services since we are service institutions to help researchers to comply with such obligations." (ST1)

"I am very well aware of it, we have started building a repository for research data and it is the library that does it." (ST 2)

Researchers and faculty members were seen as the primary stakeholders of RDM projects. For the respondents, the libraries exist to assist researchers and, therefore, libraries ought to participate in providing research data management service.

"I am aware and in an institutional level that the library is planning to provide research data management services in the next five years to assist researchers." (ST4)

Librarians' perceptions of their roles in Research Data Management

The participants were also requested to indicate their awareness of librarians' roles in the implementation of research data services. In many cases, the participants commented that academic libraries' roles in RDM were not totally new as they performed aspects of it in their library services. They were of the view that the knowledge and experiences they had acquired in the provision of traditional library services would be transferred to their new roles in RDM. Some of their responses suggest that their experiences attained from working in open access projects give them the edge to perform RDM work.

Two views from the respondents are presented:

"We are building on our long-lasting operation in open access to research publications and so we have a lot of competencies in dealing with open access infrastructure." (ST4)

"We have tried to build an experience from the services the library has, for example the library renders services such as institutional repository and open access awareness." (ST2)

When asked whether libraries and librarians have responsibilities in RDM services, all the five respondents indicated that they have a major responsibility. However, two of the participants mentioned a shared responsibility with the IT department:

"It is the library that does it together with the IT department and also in collaboration with some researchers." (ST2)

"We are engaged with the IT staff to be involved in our service, to take care of the technical stuff, which is the installation of the software, and the hardware." (ST1)

One of the respondents retorted that the researchers also share the responsibility with the libraries:

"Libraries need to find researchers who need a service, collaborate with the researcher and get started. Try to build an experience from the services the Library has." (ST3)

Moreover, librarians' active participation in open access projects has equipped them with in-depth skills in the area of institutional repositories. Librarians mentioned that the skills gained in this area have prepared them for the management of research data projects.

Librarians tactfully negotiate with faculty on legal issues such as copyright agreements in the management of data. One respondent stated that:

"Open access to publications has given libraries experience with copyright and licensing, management of publishing and handling of embargo periods as well as retrieval and storing of publications in an international context." (ST5)

Discussions of findings

One of the major aims of the study was to find out awareness of research data mandates among academic librarians in Norway. The findings show that academic librarians involved in the study are well informed of policies regarding open access to research data in Norway. There is common knowledge and understanding on the research data management mandate as required in the guidelines of the Research Council of Norway. The participants were already engaged and familiar with the Research Council of Norway's guidelines since they already play major roles in advocating for open access to research publications at the institutional level. However, their familiarity with the mandate has not yielded many results yet, though a few academic libraries have initiated RDM services in their respective academic institutions. Examples of such initiatives is the "trolling" project at the Arctic University of Norway, a pilot research data project "BIRD" at the Norwegian Business School Library and the Arctic University library's "TORD."

The study also investigated the perceived roles of librarians in RDM. The results of the study indicate that these roles may be technical or non-technical. However, viewed differently these roles are three-fold: namely, advocacy and support role; role of providing access to data; and role of managing data collections.

On advocacy and support role, it was obvious that librarians involved in the study had prior extensive experience in promoting open access to research publications through institutional repositories and other open access options. Other related advocacy and support roles they identified include the provision of specialized advisory service on data storage services, documentation, and intellectual property rights. They often promote the use of open source software to optimize resources and ensure sustainability. Finally, as part of their roles in advocacy and support, librarians also promote and engender collaboration in an effort to ensure shared knowledge and expertise on various aspects of RDM.

In respect of the role of providing access to data, the findings show that librarians have some level of expertise in providing access to data collections, just as in their role in the traditional library. Many librarians expressed their experience with institutional repositories,

which they had used previously to provide relevant information objects to supports library users. It can therefore be concluded from the statements of the respondents that they perceive the role of providing access to data as a very plausible role that they can play with a high level of comfort.

Lastly on the role of managing data collections, the participating librarians perceive a potential role in managing data collections. This finding came to light as the librarians demonstrated their skills in using discovery tools such as BibSys Oria to enhance data access and sharing. Furthermore, most of the librarians' awareness of what constitutes data storage infrastructures and their purposes, application and description of metadata standards and schemas for efficient storage and retrieval of data sets, as well as other expertise points to the fact that they understand their potential role in managing data collections within the framework of RDM.

Conclusion

The study explored academic librarians' perceptions of their roles and involvement in research data management support services in the Norwegian context. More specifically, the study examined librarians' awareness of emerging research data mandates; and the perceptions of their potential roles in research data management. The study finds that many of the academic libraries involved in the study are providing a variety of research data management services and the librarians amply demonstrate their willingness to embrace the new service. As pointed out by Tenopir et al. (2014), these services appear to be extensions of traditional activities.

Of a major concern to this study is the level of awareness of the deposit and data sharing mandate by the Norwegian Research Council among librarians. Most of them are aware of the mandate on researchers to share their research data and this awareness is translated into their desire for more education in this emerging area in library services provision. It is plausible to say that without a mandate, librarians will continue to support students and researchers in finding datasets or repositories for their research, preserve research data in institutional or data repositories and help with negotiating copyright clearance for researchers, among many others.

The implication of this study for librarians in Ghana and elsewhere on the African continent is that librarians should begin discussions on how to provide specialised research support for researchers irrespective of whether there is a mandate or not. Among others, there should be deeper cooperation between researchers and librarians in assessing researchers' data needs. Furthermore, regardless of librarians' little awareness of RDM practices, academic librarians in Ghana should be proactive by pursuing their core responsibilities of supporting researchers by initiating RDM services. Finally, academic libraries should set up RDM

communities of practice to provide on-going skills development and education for particularly subject librarians in an effort to develop their expertise and improve their confidence to engage with researchers.

References

Association of Research Libraries (2006). To stand the test of time: long-term stewardship of digital data sets in science and Engineering. A Report to the National Science Foundation from the ARL Workshop on New Collaborative Relationships: The Role of Academic Libraries in the Digital Data Universe, September 26-27, 2006, VA

Auckland, M. (2012). Re-skilling for Research. Research Libraries UK. Retrieved March 20, 2016 from http://www.rluk.ac.uk/content/re-skilling-research

Beagrie, N., Lavoie, B., & Woollard, M. (2015). Keeping Research Data Safe2. Retrieved June 6, 2015 from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.215.1165&rep=rep1&type=pdf

Bruhn S.L. (2014). *Norwegian researchers willing to share research data.* Retrieved April 16, 2015 from http://www.forskningsradet.no/en/Newsarticle/Norwegian_researchers_willing_to_share_research_data/1253996461347

Calhoun, K. (2014). *Exploring digital libraries: foundations, practice, prospects*. London: Facet Publishing.

Carlson J. R., & Garritano J. R. (2010). E-science, Cyber infrastructure, and the Changing Face of Scholarship: Organizing for New Models of Research Support at the Purdue University Libraries. *Libraries Research Publications*. Paper 137. Retrieved April 11, 2016 from **http://docs.lib.purdue.edu/lib_research/137**

Corrall, S. (2012). Roles and responsibilities: Libraries, librarians, and data. In: Pryor G (ed.) *Managing Research Data*. London: Facet, 105–133.

Cox, A. M., & Pinfield, S. (2013). Research data management and libraries: Current activities and future priorities. *Journal of Librarianship and Information Science*, 1–18.

Cox, A. M., & Pinfield, S. (2014). Research data management and libraries: Current activities and future priorities. *Journal of Librarianship and Information Science, 46* (4), 299–316.

DAMVAD Report. (2014). *Sharing and archiving of publicly funded research data report to the Research Council of Norway*. Retrieved February 22, 2015 from http://www.damvad.com/media/97361/satellite.pdf

Garritano, J., & Carlson J. R. (2009). A subject librarian's guide to collaborating on e-Science projects. *Issues in Science and Technology Librarianship,* 57. Retrieved May 20, 2015 from

http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1168&context=lib_researc
h

Gabridge, T. (2009). The Last Mile: Liaison roles in curating science and engineering research data. *Research Library Issues*: A Bimonthly Report from ARL, CNI, and SPARC, no. 265 (August 2009), 1521. Retrieved June 22, 2015 from www.arl.org/resources/pubs/rli/archive/rli265.shtml

Henty, M. (2008a). Developing the capability and skills to support e-Research. *Ariadne* 55.

Henty, M. (2008b). Dreaming of data: The library's role in supporting e-research and data management. In: Australian Library and Information Association biennial conference, Alice Springs, Australia, 2–5 September 2008. Retrieved April 10, 2013 from http://apsr.anu.edu.au/presentations/henty_alia_08.pdf

Henty, M. (2008c). Dreaming of data: The library's role in supporting e-research and data management. In: Australian Library and Information Association biennial conference, Alice Springs, Australia, 2–5 September 2008. Retrieved April 10, 2013 from http://apsr.anu.edu.au/presentations/henty_alia_08.pdf

Henrichsen, B. (2016). New name for NSD: Norwegian Social Science Data Services Changes its name to NSD –Norwegian Centre for Research Data. Retrieved April 9, 2015 from www.nsd.uib.no/nsd/news

Hey, T. & Trefethen, A. (2003). The Data Deluge: An e-Science Perspective. *Grid Computing - Making the Global Infrastructure a Reality*, 809–824.

Hodson, S., & Molloy, L. (2014). *Current best practice for research data management policies*. Retrieved May 5, 2016 from http://apo.org.au/resource/current-best-practice-research-data-management-policies

Jones, S., Pryor G, & Whyte A. (2013). How to develop research data management services - a guide for HEIs. DCC How-to Guides. Edinburgh: Digital Curation Centre. Retrieved March 5, 2016 from http://www.dcc.ac.uk/resources/how-guides

Lewis, M. J. (2010). Libraries and the management of research data. In *Envisioning Future Academic Library Services* (pp. 1–28). Retrieved March 5, 2016 from http://www.facetpublishing.co.uk/title.php?id=691-6

Lomheim, I. (2004). *The Quality Reform in Norwegian Higher Education – The Future Role of Academic Libraries* Retrieved July, 10 2014 from http://ntnu.diva-portal.org/smash/get/diva2:121853/FULLTEXT01

Lord, P., & Macdonald, A. (2004). *E-science curation report-data curation for e-science in the UK: An audit to establish requirements for future curation and provision*. Prepared for the JISC Committee for the Support of Research (JCSR). Twickenham, UK, The Digital Archiving Consultancy Limited. Retrieved July 10, 2014 from http://www.jisc.ac.uk/uploaded_documents/eScienceReportFinal.pdf

Lynch, C., & Carleton, D. (2009). The impact of digital scholarship on research libraries. *The Journal of Library Administration*, 49(3): 227-244.

Lyon, L. (2012). The informatics transform: Re-engineering libraries of the data decade. *International Journal of Digital Curation, 7*(1): 126–138.

MacColl, J. (2010). Library roles in university research assessment. *LIBER Quarterly*, 20(2), 152–168. Retrieved March, 10 2015 from http://research-repository.st-andrews.ac.uk/bitstream/10023/1677/1/MacColl2010LIBERQuarterly20LibraryRoles.pdf

Martinez-Uribe, L., & Macdonald, S. (2009). *A new role for academic librarians: data curation*. Retrieved May, 21 2015 from https://www.era.lib.ed.ac.uk/bitstream/1842/3207/6/data_role.doc

Martinez-Uribe, L., & Macdonald, S. (2009). User Engagement in Research Data Curation. In M. Agosti, J. Borbinha, S. Kapidakis, C. Papatheodorou, & G. Tsakonas (Eds.), *Research and Advanced Technology for Digital Libraries*, *5714*, 309–314. Berlin, Heidelberg: Springer Berlin Heidelberg. Retrieved May 21, 2015 from http://www.springerlink.com/content/7mnq13x34717p483

Monastersky R. (2013). Publishing frontiers: The library reboots. *Nature, 495*(7442), 430–432. Retrieved May 20, 2015 from http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&sid=8d92b68d-fe36-4f91-9f68-178e05cf4110%40sessionmgr110&hid=105

O'Brien, L. (2005). E-Research: An Imperative for Strengthening Institutional Partnerships. *EDUCAUSE Review*, *40*(6), 65.

Organisation for Economic Cooperation and Development (2015). *Principles and Guidelines for Access to Research Data from Public Funding*. Retrieved February 2015 from http://www.oecd.org/sti/sci-tech/38500813.pdf

Pinfield S., Cox, A. M., & Smith J. (2014). Research Data Management and Libraries: Relationships, Activities, Drivers and Influences. *PLoS ONE 9*(12), e114734.

Pryor, G., Jones, S., & Whyte, A. (2014). *Delivering Research Data Management Services Fundamentals of good practice.* Retrieved February 22, 2015 from http://hioa.eblib.com/patron/FullRecord.aspx?p=1680069

Steinhart G, et al. (2008) *Digital research data curation: Overview of issues, current activities, and opportunities for the Cornell University Library*. Retrieved May 18, 2015 from http://hdl.handle.net/1813/10903

Tammaro, A. M., & Casarosa, V. (2014). Research Data Management in the Curriculum: An Interdisciplinary Approach. *Procedia Computer Science*, *38*, 138–142.

Tenopir, C., Sandusky, R. J., Allard, S., & Birch, B. (2013). Academic librarians and research data services: preparation and attitudes. *IFLA Journal*, 39(1), 70–78.

Tenopir, C., Sandusky, R. J., Allard, S., & Birch, B. (2014). Research data management services in academic research libraries and perceptions of librarians. *Library & Information science Research*, 36(2), 84–90.

The Research Council of Norway. (2015). Open Access to Research Data; *Policy for the Research Council of Norway.* Retrieved January 10, 2015 from http://www.forskningsradet.no/en/Article/Open_access_to_research_data/124095 8527698

University of Leicester (2017). What is Research Data Management? Retrieved June 29, 2017 from www2.le.ac.uk

RAPPORTEURS REPORT

Keynote Address – Transition from Information Management to Knowledge Management: The Role of the Information Professional.

Presenter: **Dr. F. A. Katsriku** (Computer Science Department. University of Ghana, Legon)

The presentation examined knowledge management, stating categorically that for societies to survive to date implies that knowledge is produced and managed; and advances made in any society, has been made on the basis of knowledge. Knowledge management was explained as the systematic and organized approach to identify, capture and share information and knowledge (both explicit and tacit knowledge) within an organization for creation of new knowledge, competition and improvement of organizational processes. At the core of the knowledge management system is the creation of knowledge. All organizations, including higher education institutions, create knowledge which can occur through a variety of means, such as scientific discovery or discussions.

Scientific knowledge, obtained through scientific investigation is regarded as most reliable and is objective, unique, universal, and repeatable. Advances in the fields of instrumentation, communications and computer science has ushered in a new era - the era of the Internet of Things, an era in which everything and anything is connected and interconnected. The amount of knowledge generated by a nation can be linked to the number of publications coming from that nation. The knowledge can be easily lost if it is not captured through digitization, documentation, extraction, representation, and storage. The paper reiterated that progress and innovation is achieved through research and the solutions to the many challenges that nations face can be addressed through research.

As a way forward, the paper suggests that departments of computer science must be strengthened to deliver and support the technologies required to manage knowledge; and also set up a national centre for computer science and information technology research, to provide solutions to IT problems the nation encounters.

Key points from discussion

The speaker compared publication trends in Ghana to other places and indicated that there were 217 publications from Ghana in the field of Computer Science as compared to over 8,000 in South Africa, and over 26,000 in America; researchers were thus to be encouraged to publish more. Libraries should help in building capacity by educating faculty members, management, and library users; it should hold resources that will interest and continue to attract users; and it should also be able to connect people to knowledge experts.

Knowledge management does not only take into consideration putting resources electronically but also making the resources easily accessible to a large number of people. Thus, there is the need for collaboration and partnership between librarians, computer scientists, and information technology (I.T) personnel, in order to knowledge management.

The way forward includes among others digitization of hard copy resources and sharing of library resources.

Paper 1:   Knowledge Management: The Bedrock of Ghana's Development
Presenter: Randy Emmanuel Kommey

The paper highlighted the salient points that could be adopted and applied to work environment in reference to knowledge management. It discussed the five lenses of knowledge management, how Ghana could derive maximum benefit from KM, challenges of KM, and made recommendations.

The presenter explained Knowledge Management as 'doing everything possible to make the best use of an organisation's knowledge resources' and devising strategies to ensure that knowledge repositories are not lost. This he said could be done through improving knowledge access and transfer (placing emphasis on connectivity, access and transfer), learning in an organisation (reading from websites and journals in order to become knowledgeable), teamwork (where members of an organisation brainstorm), preserving institutional memory (recording all activities carried out in an organisation, and monitoring and evaluating staff performance for preservation), and managing intellectual capital card (need to manage staff who possess specialised knowledge and skill sets).

The paper emphasized that KM should be encouraged by formulating policies on KM, ensuring a culture of knowledge gathering, revamping and preserving important knowledge repositories such as libraries and archives, investing in new technologies required for KM, and organisation of regular training and workshops. The challenges identified include the fact that the concept is not well understood, lack of systems and tools for managing knowledge, and lack of a national database of subject matter experts.

The paper made some recommendations including the need to formulate a national information policy, establish a KM commission, train staff, collaboration between all departments in an organisation, and creating a national database of subject matter experts.

Key points from discussion
Knowledge Management is a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's

information assets. These assets may include databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers. KM was further explained as 'doing everything possible to make the best use of an organisation's knowledge resources'. The presenter reiterated that the five lenses of Knowledge Management were: devising strategies to ensure that knowledge repositories are not lost, improving knowledge access and transfer, learning in an organisation – reading from websites and journals to help one to become knowledgeable, preserving institutional memory, and managing intellectual capital card.

Ghana could derive maximum benefit from KM by formulating a policy on KM, preserving institutional memories, encouraging organisational learning and a culture of knowledge gathering, revamping and preserving important knowledge repositories such as libraries and archives, investing into new technologies required for KM, and organising regular training and workshops on KM.

Paper 2: Knowledge Management practices in the living Librarians (BAANSI) of Dagbon
Presenter: Florence D-D Plockey

The presentation examined knowledge management practices of the B*aansi* of Dagbon, in the Northern Region of Ghana. It explained Knowledge Management as a term which includes deliberate efforts to maximise an organisation's performance through creating, sharing and leveraging knowledge and experience from internal and external sources. Knowledge acquisition is the process of absorbing and storing new information in memory, the success of which is often gauged by how well the information can later be remembered and retrieved from memory. The paper reiterated that knowledge acquisition of the B*aansi* was virtually practical, collective, social or interpersonal and lifelong.

Indigenous conceptions of intelligence, it was explained, emphasize the practical, interpersonal and social domains of functioning and are quite differentiated from the cognitive 'academic' intelligence that dominates Western concepts of the construct. In order to acquire knowledge, a learner must become directly and actively involved or socially participate in a community. Indigenous knowledge (IK) is vital information that is diminishing at an alarming rate; there is therefore the growing need to preserve it as indigenous communities around the world are facing a great challenge to the survival of their cultural heritage and knowledge traditions. It is said that IK faces extinction unless it is properly documented and disseminated.

The paper revealed that the knowledge produced is stored through Social Immersion, Memorization, Symbolization and Constant Practice. Social Immersion consists of user

interaction and user experience from a content driven approach; education and socialization take place through living together and among others, imitating existing activities and skills of adults. Things that society wanted to remember were composed into songs, proverbs, myths, poetics forms, and oral pose narratives including folktales and riddles. Memorization was explained as the concepts of learning mechanically, repeating material many times over. The act of memorization is often a deliberate mental process undertaken in order to store in memory for later recall.

Symbolization is the use of symbols to convey meaning. Human cultures use symbols to express specific ideologies and social structures and to represent aspects of their specific culture. The B*aansi* of Dagbon use sound as a symbol or code to communicate with their audience. Constant practice on the other hand, is similar to the concept of procedural knowledge which is knowledge of knowing "how to do or how to act" - learning by practice. In conclusion, the presentation tried to establish the fact that the B*aansi* are the living libraries/archives for Dagbon; and they are very important to the Dagbon society.

Key points from discussion
Dagbon society is divided into identifiable social classes and one major social class within the Dagbon traditional setup is the *Baansi* - holders of cultural wisdom and history; they live and relive the history of the Dagbamba. The process of knowledge acquisition or learning is lifelong, improves social inclusion, and takes place throughout the various stages in life.

Indigenous knowledge systems do not have library with books and computers, but they have their own way to produce, codify, store and retrieve knowledge and information; oral transmission was a major means of preserving knowledge before the advent of modern tools of codifying knowledge. It was established that the B*aansi* are walking history books, preserving their ancient stories and traditions through song. However, it is reiterated that indigenous knowledge, which has generally been passed from generation to generation by word of mouth, is in danger of being lost unless it is formally documented and preserved. The discussions concluded that Western trained librarians should endeavour to let their institutions become information repositories in their communities.

Paper 3: Digitisation in context: Considering ethics in information use at the University if Ghana
Presenter: Catherine Asamoah

It was observed by this paper that academic libraries all over the world are embarking on digitisation to: increase access, improve services to growing users, reduce the handling and use of fragile or heavily used original material and also to create back-up copies; as developments in Information Communication Technologies (ICTs) have greatly

improved the way most libraries serve their patrons to get access to information irrespective of their location (virtual access to information).

Apart from financial constraints, issues of ethical use of information, divergent management priorities, and lack of policy guidelines were considered to be among challenges bedevilling the library of the University of Ghana, College of Health Sciences as the study aimed at examining funding, copyright issues and other challenges faced by the College of Health Science Library in digitising its materials and propose a model to facilitate digitisation at the College.

A qualitative research method, using a case study approach, was adopted for the study; and interviews were conducted with management of the digitisation project, the Head of Technical Services and the Head of the College of Health sciences library, whiles secondary sources of data were used to support the trends of digitisation and ethics in information use.

Based on findings of the study, which also secured commitment by Head of the Digitisation Project at the University of Ghana, the following recommendations were offered;
1. Management priorities: digitisation of rare and historical materials should be a part of management priority to ensure access to information. Therefore, all the support needed to embark on such initiatives must be fully supported by management.
2. Funding: budgeting is a crucial phase in any digitisation project. Funds have to be secured for each phase of the project so it does not become stagnant. Management can apply for funding opportunities in organisations that are interested in such endeavours.
3. Policy guidelines for digitisation: There is the need for policy guidelines to help direct the digitisation project at the College of Health Sciences. By so doing priorities will be set as to what to digitise for the benefit of users and what not to digitise to cut down on cost.
4. Ethical aspects of digitisation (copyright): the ethical aspects of digitisation need to be clearly defined and explained to users. Issues of copyright clearance and intellectual property rights must be clearly outlined. The principles of ethics in information use must be critically enforced.

A recommended model for digitisation at the College of Health Science Library, considered implementation at six (6) phases, namely;
-   Phase 1: Project Management
-   Phase 2: Funding
-   Phase 3: collection Survey
-   Phase 4: Copyright Issues

- Phase 5: Interoperability
- Phase 6: Preservation

Key points from discussion

The various issues raised by paper was confirmed in the discussions. Concerning management priorities, management of the library was considered to be paying little attention to digitisation, whiles funding of the project was acknowledged to be problematic. It was confirmed that no specific policy was in place for digitisation in the college library, and that the institution-wide (University of Ghana) policy was adapted for use at the college library. Under copyright, the discussions also acknowledged prevalence of problems with regards to the priority of things to digitise – specifically, there is always the problem of what to give out/photocopy/scan.

It was concluded that digitization offers many new and exciting ways for access to information and materials on a virtual platform, but consideration but be made of the cost-benefit analysis to stakeholders. Long-term benefits of access to information and knowledge for learning, teaching and research was an assurance for digitization projects, but institutions need to exercise caution and not just jump on every digital information. Librarians were encouraged to convince management to see digitization as a good thing because the current knowledge revolution globally, had made digitization very relevant.

These recommendations were also made within the discussions;
- Information professionals should be able to write proposals for sponsorship. This can be done only and when people have been trained in proposal writing
- Setting up a committee to put in place clearly defined guidelines and plan the digitisation project
- Need to critically enforce the principle of ethics in information use

Paper 4: Ethics in information use at CSIR - the role of information professionals in academic and research libraries
Presenter: Lawrencia Donkor Acheampong & Margaret Sraku-Lartey

The presentation stated with a definition of general ethics and ethics in relation with information management. It was noted that in recent times, "information ethics" (IE) has come to mean different things to different researchers working in a variety of disciplines. The core issues of information ethics, as it was mentioned, include intellectual freedom, equitable access to information, information privacy, and intellectual property, but library professionals have been concerned with these issues for centuries, although advances in technology had made the general population more aware of these issues. The study therefore sought to find out whether information professionals had knowledge of the

ethics governing the use of information and how they applied these in their various libraries/information centres.

A two-stage multi sampling techniques was used for this quantitative study, which was conducted as a case study in the Kumasi Metropolis, located in the Ashanti region of Ghana. The first stage of sampling used the purposive sampling technique to select ten research and academic libraries from within the Metropolis, accounted for as four research libraries and six academic libraries, and the second stage involved the use of a random sampling technique to draw the sample size of forty (40) library and information science professionals from the ten selected academic and research libraries in the Metropolis. In all 40 questionnaires were sent out to the various libraries; however 85% (34) were received and analysed.

It was found by the study that LIS professionals have a fair level of knowledge in ethical principles for library and information service delivery, a situation that impacts positively on users of library and information services. It brought to bear the importance of applying ethical principles in the provision of library services to various clients, which also means that LIS professionals must be up to date on new developments in the sector thereby confirming the need for continuing information literacy training for both professionals and users.

It has also revealed that length of service in the field did not necessarily imply high knowledge in ethical issues, and therefore LIS professionals must rather be exposed to emerging issues on a regular basis. The following recommendations were proffered;

1. The application of ethical issues in the library environment should be a priority consideration in all libraries in Ghana.
2. Library and information science educators must do their best to show the significance of ethics in the profession.
3. Staff should participate in training to develop relevant skills and upgrade their knowledge.
4. The provision of code of ethics for the profession is important and must be championed by professionals and the association.
5. User education should be encouraged among information professionals
6. Professionals should be encouraged to enforce ethical principles within their organisations.
7. The various organisations studied and indeed all libraries should also strengthen the research and ethics committee and set up desks to sensitise and create awareness among their users.

Key points from discussion

It was agreed that information professionals are 'qualified staff who have undergone studies in librarianship and information studies to degree or post-graduate level'. Such an officer was responsible for designing, planning, organizing, implementing, managing and evaluating library and information services and systems to meet the needs of the users of library and information services in the community. Key among his or her responsibilities include:

1. Analysing resources and information needs of the library or research community.
2. Formulating and implementing policies for service development.
3. Answering reference and information enquires using appropriate materials.
4. Assisting users in the use of library resources and information.
5. Developing services to meet the needs of special users.
6. Collection development
7. Organisation and exploitation of resources.
8. Provision of advice and assistant to users in finding and using information under development of systems that will aid access to the library resources.

Major among the challenges encountered by the information professionals in the delivery of service relates with finance, use of ethnical methods in their work, government attitude to research and information generally, and attitude of the larger society with respect to information management. Methods adopted by the information professional in gathering data or information on their service provision are mostly through questionnaires and interviews.

COMMUNIQUE FROM THE 2ND CARLIGH INTERNATIONAL CONFERENCE

The Consortium of Academic and Research Libraries in Ghana (CARLIGH), at its Second international conference held at CSIR-INSTI, Accra-Ghana from 28th – 30th September 2016 with the theme Transition from information management to knowledge management: The role of the information professional agreed that:

- Publication and knowledge generation trends in Ghana are very low. It was agreed that it will take more than governmental efforts to address this challenge. Hence all stakeholders, including government, academia, researchers, industry, civil society and the international development community, must join the effort to expand on the knowledge generation capacity of Ghana.

- Most of the Ghanaian indigenous knowledge resources (research publications, traditional knowledge, etc.) are not documented and/or digitized and made available to the global community. Effort should be made by relevant stakeholders to document, preserve and share indigenous knowledge via various online platforms.

- Much attention has not been given to Knowledge Management as a nation, and the needed systems and tools for managing knowledge have not been adequately provided. It is recommended for the creation of a National Commission for Library and Information Science to oversee the coordination and management of information and knowledge management at the national level. There is also a need for national policy to guide information and knowledge management.

- The commission can also work to develop a national database of experts in various disciplines of knowledge. Institutions of Higher Learning (IHL) in the country should work at reviewing their curriculum to include knowledge management. Other corporate organizations should set up knowledge management units within their establishments.

- Information professionals must continue to play the crucial role of protecting the intellectual property and copyrights of researchers, publishers and inventors. However, for the researchers/authors/inventors who are willing to give free access to their intellectual properties, in the spirit of free access to information, librarians and their institutions should support such initiatives.

- Continuous Professional Development programmes for Information professionals should also aim at developing skills in information technology (IT), scientific editing,

proofreading, marketing, advocacy and referencing. Training for such professionals should also be tailored to address ethics, morals, and attitudes.

- There is the need to restructure the management and policies of libraries and information centres. Occupational titles of officers, responsibilities, communication channels, networking and socialization should also be reviewed to reflect changing global trends.
- Issued this 30th day of September, 2016, and signed on behalf of CARLIGH Management Committee by;

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(Chairman, CARLIGH Management Committee)

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