KNOWLEDGE RETENTION MODEL FOR INSTITUTIONS OF HIGHER LEARNING: A CASE OF KENYA METHODIST UNIVERSITY (KeMU)

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DECLARATION

Student number: 37151126

I declare that: Knowledge Retention Model for Institutions of Higher Learning: a case of Kenya Methodist University (KeMU) is my own work and that all the sources that I have or quoted have been indicated and acknowledged by means of complete references.

16 May 2016

SIGNATURE DATE

(Ms Stephen EK)

ABSTRACT

Kenya Methodist University (KeMU) is facing challenges like duplication of work due to lack of a central repository for knowledge retention, loss of knowledge through expertise leaving the institution without knowledge being captured and over reliance on a few known subject matter experts as others have not been identified. Utilising the Knowledge Retention Strategy framework, this study sought to assess knowledge retention practices at KeMU, with a view to entrench the culture of sharing knowledge. The ultimate aim of this study was to develop a model for knowledge retention at institutions of higher learning which KeMU could adopt. The study relied on mixed method research (MMR) with qualitative and quantitative data mixed at collection, analysis, discussion and reporting levels. The study triangulated data collection tools which encompassed a questionnaire, interview, observation and review of documents to collect data from 106 respondents and 11 heads of departments respectively. These two groups were purposively selected as they play a key role in knowledge retention at KeMU. The study disclosed a variety of informal knowledge retention practices but formal practices like: documented work processes; training and development for specific job tasks; orientation for general and job specific; knowledge repositories; communities of practice; knowledge retention policies; knowledge recovery initiatives; and human resources processes and practices for knowledge retention were lacking. Considering the value placed on the above list of lacking essential practices for knowledge retention, KeMU is indeed in dire need for a solution to help retain operational relevant knowledge. The study formulated a KR model for institutions of higher learning that would help KeMU leverage its knowledge assets. The study recommends that KeMU should work out a knowledge retention policy on how to implement the best knowledge retention practices. A further study on measuring KM in an academic institution is recommended.

Key words: Knowledge acquisition; knowledge recovery initiatives; knowledge retention; knowledge transfer and sharing; knowledge retention model; higher learning institutions; universities; KeMU.

DEDICATION

To:

My family the Mwindu's.

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LIST OF ACRONYMS

ACET	Adams Communication and Engineering Technology
APQC	America Productivity and Quality Centre
CUE	Commission for University Education
CIPD	Chartered Institute of Personnel and Development
COPs	Communities of Practice
CPD	Continuing Professional Development
IHLs	Institutions of Higher Learning
HRD	Human Resource Department
HR	Human Resource
HRM	Human Resource Management
ICTs	Information Communication Technologies
IFAD	International Fund for Agricultural Development
IPMA-HR	International Public Management Association for Human Resources
ISO	International Organisation for Standardisation
IT	Information Technology
KeMU	Kenya Methodist University
KM	Knowledge Management
KR	Knowledge Retention
LIMAT	Lingayas Institute of Management and Technology
MIT	Massachusetts Institute of Technology
MMR	Mixed Method Research
OSN	Online Social Networks
PA	Performance Appraisal
SMEs	Subject Matter Experts
SPSS	Statistical Package for the Social Sciences
UK	United Kingdom
UNESCWA	United Nations Economic and Social Commission for Western Asia
UNISA	University of South Africa
UniSA	University of Australia

UNZA	University of Zambia
USA	United States of America

CHAPTER ONE
INTRODUCTION AND BACKGROUND

1.1 Introduction and background

Knowledge retention (KR) has become important in organisations, especially with the increasing reliance on knowledge to grow economies. Knowledge is increasingly recognised as the most important economic resource, surpassing the traditional resources of capital, labour and land (Drucker 1992). The value of knowledge in enhancing operational efficiency and effectiveness in organisations can no longer be denied (Choo 1995; Delong 2004; Delong 2005; Edvardsson 2003; Musana 2006; Ross and Ross 1997:413). However, most organisations are faced with the problem of knowledge loss. Therefore, proactive responses such as knowledge retention have to be implemented to retain both tacit and explicit knowledge (Delong 2002; 2004).

Academic institutions are no exception as they form part of the key sectors that have to embrace knowledge retention practices (Wamundila 2008). Therefore, universities must focus on retaining their institutional knowledge both in the tacit and explicit formats. This study was inspired by a growing concern over the loss of critical knowledge by universities in Kenya, as Waswa and Katana (2008) report that qualified academic staff members resign from Kenyan public universities in large numbers and secure better paying jobs abroad. This results in brain drain among the academic staff within the public universities in Kenya. Internal brain drain is also rampant with movement of highly skilled academics to other sectors in the country (Waswa and Katana 2008). From this attrition, universities have been losing critical knowledge with employees moving on to new jobs, faster turnover among mid-career employees, aging workforce and more competitive recruiting. When employees leave, the universities lose valuable knowledge; yet, it is the most critical asset to be managed (Halawi, Aronson and McCathy 2005). This study therefore, looked into aspects related to the development of a knowledge retention model for institutions of higher learning, with specific reference to Kenya Methodist University as a case study.

1.2 Contextual setting

Kenya Methodist University (KeMU) is an academic institution in Kenya consisting of a student population of over 9000 and a complement of 550 full time staff. KeMU also engages a number of part time teaching staff (KeMU 2012).

The University is dedicated to the furtherance of the Christian Faith and promotion of the required activities for the restoration of the relationship between human beings and God the creator. It strives to apply Christian principles and practical evangelism in all endeavors.

KeMU came as a logical step toward educational excellence as the focus of the Church in pursuance of its holistic Gospel. However, the university was not established as an isolated project. At least two institutions namely; Kaaga Rural Training Centre and Methodist Training Institute consecutively formed the basic foundation, in form of physical and other infrastructure in the establishment of KeMU.

KeMU started its operations in 1997 when the Commission for Higher education granted a Letter of Interim Authority, giving an approval for its establishment. The university opened its doors with 11 pioneer students. Over years KeMU has grown to a population of over 9000 students and over 550 members of staff. KeMU is duly accredited by the Government of Kenya through the Commission for University Education (CUE).

The university has five faculties, nineteen (19) academic departments, administration department, a library and a dispensary. Being an academic institution of higher learning, it offers postgraduate, undergraduate and diploma programmes. It also offers pre-university and bridging programme and certificate programmes (KeMU 2012).

As a Christian institution of higher learning, the KeMU's Mission is to contribute to the transformation of the society by providing high quality education that promotes excellence in scholarship, research and selfless service to the community (KeMU 2012).

Being an institution of higher learning, the programmes that the university offers entail tuition and research work. In the process- there is creation of knowledge through learning, teaching and research activities. As such, KeMU needs to be able to retain its operational knowledge, before it walks out of the door due to staff retirement and staff changing their jobs. There is necessity for KeMU to have a common repository for the knowledge created within the university, to ensure that crucial information is collected and stored in a timely way.

A knowledge retention model, is assumed, would help KeMU to roll out a plan of action that would see it manage its knowledge more effectively. Optimistically, the model will assist KeMU to formulate and implement a knowledge retention initiative that would see it achieve better knowledge acquisition, transfer and sharing. It will also help in formulating policies that guide on knowledge retention at the university.

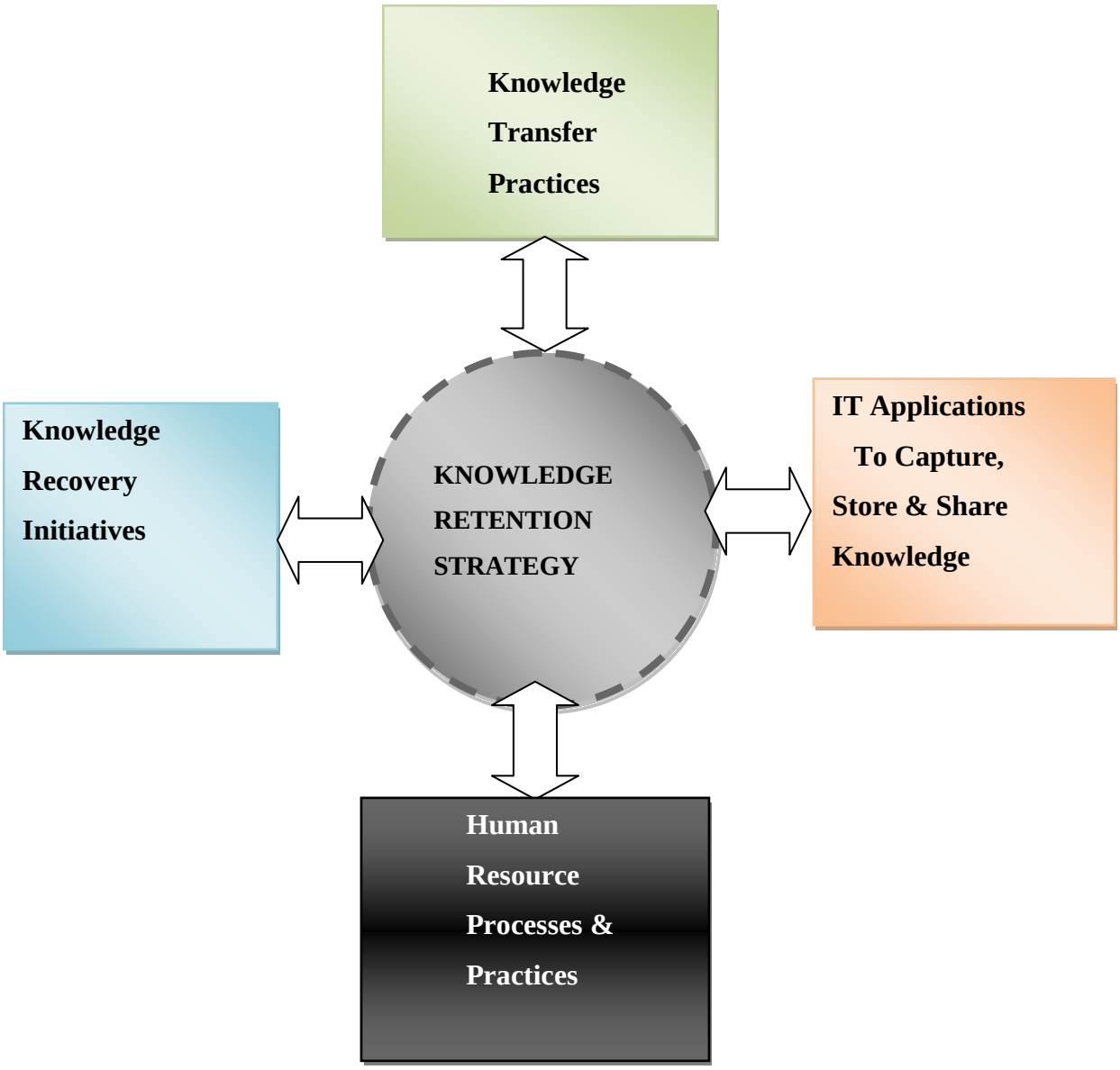
1.3 Theoretical framework

Many organisations have developed a knowledge retention strategy framework to help them capture and retain knowledge. According to Peterson (2012) development of a knowledge retention strategy is undertaken based upon the following four point framework:

- Human resource policies;
- Knowledge transfer practices;
- Information technology applications to capture, store, and share knowledge; and
- Knowledge recovery initiatives.

Following the threats posed by changing demographics at the Los Angeles Bureau of Sanitation, Dr. David Delong of the Massachusetts Institute of Technology's (MIT) Age Lab developed a knowledge retention framework that provides a multi-faceted, customised approach to the Bureau's knowledge retention issues. This framework is illustrated in Figure 1.1

Figure 1.1: Knowledge retention strategy framework



Model adopted
from DeLong (2004)

As indicated in Figure 1.1, the Knowledge Retention Strategy framework specifies four types of initiatives that shape an organisation's knowledge strategy. Each type of initiative represents a set of programmes and practices that an organisation can use to stem the loss of knowledge (Abkian,Turshollow and Umphres 2007). Abkian et al. (2007) continues to say that such a model can be adopted by an organisation to identify programmes and practices, which it has in

place that directly affects knowledge retention. The framework also helps identify new programmes and initiatives that an organisation could implement to continuously improve knowledge retention. Peterson (2012) contends that care must be taken to recognise a successful strategy, which must be multifaceted. Effective solutions to knowledge retention employ not only information technology tools, but also knowledge transfer activities and human resource policies and procedures.

This study was based on the DeLong's (2004) Knowledge Retention Strategy Framework. In other words, objectives and research questions flew from the framework and literature was reviewed based on these objectives. The evaluation of the KeMU human policies and procedures, the assessment of knowledge retention practices, ICTs applications to capture, store, and share knowledge being applied by KeMU and exploration of the use of the knowledge recovery initiatives formed the basis of its knowledge retention model that the researcher developed. The research involved evaluation of KeMU vulnerability to knowledge loss, the assessment of which members of KeMU staff hold critical knowledge, and the identification of what critical knowledge is at risk of being lost. A key aspect of a knowledge retention strategy is not only identifying the particular units within an organisation that could be vulnerable, but to also identify individual personnel who, if they left the institution, could severely impact operations.

1.4 The research problem

Due to lack of a framework KeMU has been continually "reinventing the wheel" whenever it loses knowledge through expertise leaving the university. As indicated in the introduction, organisations, including universities are losing employees through retirement, personnel changes and staff turnover. From a personal experience, KeMU has been losing experienced personnel's knowledge and the institution seems to lack strategies to retain same knowledge. Retirees leave the university without their knowledge having been captured and retained. This loss of knowledge through staff leaving or retiring raises the need to have formal structures in place that will help KeMU to capture that relevant knowledge. Smith (2005:4) asserts that knowledge management combined with a knowledge programme actively pursues ways to collaborate and

share information in a manner that makes the retiring staff receptive to sharing knowledge with the remaining staff.

In summary, it may be argued that the lack of a KR framework or model is an impediment to the growth of KeMU as it is not able to efficiently tap and share relatable knowledge for the improvement of the individuals and the institution at large. Once a knowledge retention model is developed, KeMU would be provided with means that would possibly be able to salvage the knowledge situation at hand.

1.5 Research objectives and questions

The general purpose of this study was to assess knowledge retention practices at KeMU, with a view to entrench the culture of sharing knowledge. The ultimate aim was to develop a model for knowledge retention at an institution of higher learning. To achieve this, the research was guided by the objectives and questions illustrated in Table 1.1.

Table 1.1: Research objectives, questions and possible sources of data

Research objectives	Research question	Research approach	Source of data	Chapter
To investigate knowledge acquisition, transfer and sharing practices at KeMU	What knowledge acquisition, transfer and sharing practices are in place at KeMU in order to retain knowledge?	Qualitative	Literature Questionnaire Interviews observation	Two Four
To determine whether knowledge retention policies have been developed and	What knowledge retention polices has KeMU developed and implemented?	Qualitative Quantitative	Literature Questionnaire Interviews Institutional Documents	Two Four

implemented at KeMU				
To determine knowledge recovery initiatives at KeMU	What knowledge recovery initiatives are in place at KeMU?	Qualitative	Literature Interviews	Two Four
To explore human resource processes and practices that are related to knowledge retention at KeMU	What human resource processes and practices are in place at KeMU?	Qualitative	Literature Interviews	Two Four
To identify ICT tools adopted as enablers of knowledge retention, creation, transfer and sharing at KeMU	What ICT tools have been adopted as enablers of knowledge retention, creation, transfer and sharing at KeMU?	Qualitative	Literature	Two Four
To develop a model for knowledge retention at an institution of higher learning	What model of knowledge retention has the institution developed?	Quantitative	Institutional Documents Questionnaires	Two Four

1.6 Justification of the study

Creswell (2003) observes that justification of a study explains the importance of the study. This study on knowledge retention is important and quite timely for KeMU as an institution for higher learning considering the challenges faced by institutions of higher learning with regard to knowledge retention. Knowledge has become a valuable asset for organisations especially institutions of higher learning although most of these institutions have not put up proper

measures to identify and manage the key knowledge so that it is availed for the success of the organisation. Organisations are faced with various attritions such as employees with specific expertise leaving hence knowledge loss; over reliance on key persons to solve the organisation's problems hence reinvention of the wheel each time they exist; and lack of a central repository where organisation knowledge can be stored for future reference. KeMU being an institution of higher learning is not exempted from such attritions. While KeMU is producing and acquiring knowledge, there exists no guidance on the capture and retention of such knowledge. In this regard, it was hoped that this study would make a significant contribution towards the existing body of knowledge in the field of knowledge retention in universities. The research topic was therefore identified as it will help the researcher to identify key knowledge related issues and therefore develop a model that will help make knowledge retention practicable at KeMU.

1.7 Scope and Delimitation of the study

This study was carried out at KeMU and the subjects targeted comprised the academic members of staff in all the five faculties of KeMU, the top management and personnel in the human resource department. The decision to collect data from academic staff members was based on the fact that they do immense work when it comes to creation of knowledge, at the university. They do this through teaching, writing publications and supervision of term papers and research projects. It was critical to get their input and insights on the knowledge retention model that was developed. The top management is also involved in knowledge acquisition through staff recruitment and the management of the university. The top management gave information on whether there are knowledge retention practices at KeMU and what procedures are in place to retain staff members who have obtained higher qualifications during their working time at KeMU. The human resource department gave information on staff recruitment and retention. Students were excluded from the study, as they do not preserve knowledge at the university. Equally beyond the scope of the study were other non-academic staff members and an assumption is that they do not generate knowledge related to the line function of the university, nor involved in direct preservation of knowledge.

1.8 Definitions of key terms

The key terms refer to concepts at the core of the study, concepts that must be unambiguous if the research has to be conducted with proper care and if the procedures and outcomes are to be properly understood by the reading audience.

1.8.1 Knowledge

Davenport and Prusak (1998:5) define knowledge as a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates from and is applied in the minds of the knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices and norms.

1.8.2 Knowledge management

Knowledge management is a collaborative and integrated approach to the creation, capture, organisation, access, and use of an enterprise's intellectual assets (Grey 1996). For the purpose of this study, knowledge management implies all collaborative efforts that are undertaken to enhance creation and use of institutional knowledge.

1.8.3 Knowledge acquisition

Knowledge acquisition refers to the practices used by an organisation to process knowledge (Delong 2005; Man 2006). Knowledge acquisition practices include recruitment, training and development, brainstorming, expert systems, subject matter experts and after action reviews (McCall 2006; Soo, Midgrey and Devinney 2002; Tsai and Lee 2006). In this study, knowledge acquisition refers to mechanisms that enable an organisation to possess knowledge. It looks at how tacit or explicit knowledge is made available within the organisation.

1.8.4 Knowledge retention

Knowledge retention is the capture of critical knowledge and expertise that is at risk of loss when employees leave an organisation (Kim 2005; Dan 2008). Knowledge retention aims at retaining as much of the departing employees' expertise and knowledge as possible. It is a managerial practice to ensure that knowledge is captured and retained before experts walk out of the organisations through various forms of attrition. Appropriate strategies and approaches must be developed to capture the employees' expertise and retaining it as organisational knowledge. Levy (2011) states that through knowledge retention, an expert's most valuable knowledge has to become an organisational asset. Based on these facts, knowledge retention can be defined as those activities directed at retaining valuable knowledge necessary for the operations of an organisation to help it sustain its operations effectively and efficiently.

1.8.5 Knowledge transfer

Knowledge transfer has been defined as an activity that facilitates knowledge flows in organisations (Bou-Llusar and Segarra-Cipres 2006). Knowledge transfer is a tool for problem solving and operational enhancement (McCall 2006). Such knowledge flows may involve interactions of individuals or making reference to codified knowledge (Lochhead and Stephens 2004). Knowledge transfer practices include succession planning, communities of practice, knowledge repositories, mentoring, coaching, phased retirement, job rotation, storytelling and orientation (Butler and Roch-Tarry 2002; Gale 2007; Ohio Environmental Protection Agency 2006; Stovel and Bontis 2002). Knowledge transfer refers to how knowledge flows in organisations, departments or indeed sections and units.

1.8.6 Knowledge retention policyOne way of ensuring a successful introduction of knowledge-based initiatives in an organisation is through the formulation of a knowledge policy or strategy (Dewe and Wright 2007:8; Soft AID Computers Limited 2005). The role of a policy in an organisational management has for a long time remained vital and is viewed as a mechanism for instituting organisational control over resources (Buchanan and Hucynski 1997:708; Ruschcliffe Borough Council 2005). According to the Municipal Research and Services Center (1999) "Policies are created to guide decision making … [and] formally adopted policy generally takes the form of a governing principle, plan, or course of action".

1.9 Research methodology

The study employed a mixed method research (MMR) approach specifically triangulation that encompasses qualitative and quantitative approaches. The combination of qualitative and quantitative approaches provides the most complete or insightful understanding of the research (Ngulube 2009). This situation leads to what Creswell (2003) call a mixed method or Multi-stage research approach. As a method of research, mixed method focuses on collecting, analysing and mixing both quantitative and qualitative data in a single study or a series of studies (Creswell 2003).

In this study, the incorporation of qualitative and quantitative research took place:

- in the research questions where both quantitative and qualitative questions were asked;
- in data collection where various methods of data collection were used; and
- on data interpretation where quantitative and qualitative results were closely examined for better understanding of the results.

Use of different data collection instruments enabled comparison and integration of collected data which strengthened the findings. Both primary and secondary data was collected. Primary data was collected by use of questionnaires, interviews and observations. Secondary data on knowledge retention in general and in institutions of higher learning in particular was sourced from literature and review of documents. Content analysis was used on qualitative data after which occurrence of various themes was counted quantitatively. Quantitative data was analysed using SPSS statistical package which enabled descriptive analysis. Chapter three of this study has been devoted to show a detailed report of the research methodology employed in this study.

1.10 Pretest or pilot study

Pre-testing of data collection tools has been described as one of the major tasks that should be employed before the actual data collection occurs (Anderson and Arsenault 1998:178). In addition, the pre-tested individuals should reflect the actual population of respondents that would be involved in the actual study (Johnson and Christensen 2004:177). A draft copy of the questionnaire was given to fellow Masters Students, staff in the Library and Information Science

department and one professor in the Department of Library and Information Science at the Technical University of Kenya to request their candid opinions over the tool. A number of the respondents commented on their understanding of the questions and the length of the questionnaire versus the completion time. The second step, according to David and Sutton (2004:89), is to interview a small number of people from the target population. The respondents were from different academic orientations, such as the Arts and the Sciences. As such, pre-test questionnaires were distributed to five respondents, in each of the following schools:

- Education and Social Sciences;
- Computing and Informatics;
- Science and Technology;
- Medicine and Health Sciences; and
- non-teaching department being the human resource department.

The four schools were chosen as they presented different backgrounds of academic at KeMU. The human resource department was chosen to represent the non-teaching staff. The number of individuals that can be used for pre-testing can range from two to ten, but in this study five were identified. After the pre-test, some questions were modified to include aspects like more answer preferences and multiple choice questions. The interview guide was pre-tested by interviewing the director, Computer Centre and the head of the Library Department.

In the pilot study, some errors were identified and subsequently corrected. Some questions were omitted as they were ambiguous, double barreled and lacking clarity. Where necessary, wordings and phrases were modified to ensure they were clear and unambiguous to suit the purpose of the main study. Babbie (2010:260) recommends that researchers should provide clear, short items that will not be misinterpreted. From the above, and the data gathered thereafter, the researcher learnt that “it is best to pilot-test interviews and questionnaires prior to implementation” (Neuman 2006:312). According to Neuman (2006), the importance of instrument validation and reliability in research cannot be overemphasised. During the instrument pre-test, the questionnaire was critically reviewed and the preliminary interviews conducted.

1.11 Issues of reliability and validity

According to Johnson and Christensen (2004:249) and Johnson and Waterfield (2004), numerous strategies can be used to achieve the validity and reliability assessment attributes in quantitative research. These include sampling, respondent validation, triangulation, audit and reflexivity (Johnson and Christensen 2004:249; Johnson and Waterfield 2004). The strategy used for this study was triangulation. According to Johnson and Waterfield (2004:123), "triangulation requires the researcher to examine data collected from different sources or by different methods or researchers, or findings derived from different analytical procedures". This study complied with this requirement, as data was collected using questionnaires, interviews, observation and review of documents, and different techniques were used to analyse data. Triangulation was employed to enhance the credibility and dependability of the research findings (Creswell 2003:196; Johnson and Christensen 2004:254; Johnson and Waterfield 2004). Also different techniques were used to analyse the quantitative and qualitative data collected. Qualitative data was analysed using Microsoft word while quantitative data was analysed using SPSS version 20.

In terms of reliability, this research ensured that it was achieved through the use of an interview guide where the same pattern of questioning was made on each interviewee. On the other hand, the questionnaire distributed had same questions. Thus as far as reliability of data collected was concerned, there was consistence. Therefore, it is possible that if another researcher undertook this research under similar conditions, they would be able to arrive at the findings that have been obtained in this study. Pre-testing of the questionnaire and the interview schedule helped to detent errors in the questionnaire as well as difficult questions.

1.12 Ethical considerations

Ethical considerations cover such aspects as voluntary participation, protection from all forms of harm, confidentiality, anonymity, informed consent, privacy and the conduct of the researcher when executing the research exercise (UNISA 2007; Babbie 2010:64-67; Neuman 2006:129). In this study, the following ethical issues were considered: confidentiality, informed consent and provision of debriefing, counseling and additional information.

1.12.1 Confidentiality

Confidentiality refers to the researcher ensuring that no one outside the research team will be able to identify the participants in the study and that responses of individuals are not directly repeated to others (Babbie 2010:136). In order to maintain confidentiality in the research, the names or contacts details of the participants remained anonymous and confidential. The participation was voluntary and the participants were assured that the information they provided was to be treated confidentially and solely for the purpose of the study. The participants were assured that specific information from the research was not to be given to their employer.

1.12.2 Informed consent

It is the duty and the responsibility of the researcher to furnish the potential participant with the necessary information on the nature and purpose of the research to be undertaken (Stangor 2011:48; Babbie 2010:136). In this case, the researcher obtained informed consent from all the subjects involved in the research. The researcher also sought permission from the institution, where the research was conducted. The researcher provided an information sheet, with a university letter head to all the participants. This letter introduced the researcher and also informed the participants why the research was being conducted and the outcomes.

1.12.3 Provision of debriefing, counselling and additional information

Participants must be thoroughly debriefed at the end of the study (Stangor 2011). In this study, the researcher gave participants a general idea of what the research was investigating, why, and their part in the research was explained.

UNISA has created its own ethics policy (2007) that adds greater protection for subjects. The policy states that the rights and interests of human participants should be protected in research. This is particularly important where information gathered has the potential to invade the privacy and dignity of participants. The respondents have a right to be treated with dignity and, wherever possible, to gain some benefit from the research. According to Oates (2006:55) the rights of participants include:

- Right not to participate.
- Right to withdraw.
- Right to give informed consent.
- Right to be anonymous.
- Right to confidentiality.

In this study, careful measures were taken to ensure that the study did not deviate from the above codes. Before any information was sourced from KeMU, a written permission to conduct the study was directed to top management of the institution. The study did not commence until the management had favourably responded to the request. Those entities which did not grant permission for the research were excluded.

The researcher exercised due diligence to ensure that the information provided by the respondents remained confidential. All data collected pertained solely to the key research objectives of this study. KeMU management was also afforded an opportunity to access the research results once the data analysis was completed.

1.13 Chapter outline

This section includes the intended chapters for the study.

Chapter one which is the introduction presents the background of the study, a brief history of KeMU, research problem, research objectives and questions, limitations, significance of the study and definition of terms. Chapter two covers the literature review. This includes the theoretical framework on knowledge retention strategies. The chapter reviewes such subtopics as knowledge acquisition, knowledge sharing, knowledge transfer, knowledge retention policies, human resource management processes and practices for knowledge retention, and ICTs used for knowledge retention. Chapter 3 presents the research methodology: an outline of the methodology and activities that took place; target population, sample, research instruments, data collection procedures and ethics to be adhered to were covered.

Chapter four presents data analysis. The findings are presented using tables, figures, charts and narrative description. Some interview excerpts were presented to allow the reader interaction with primary information. Chapter five presents the interpretation of results. Chapter six covers conclusions and recommendations which were made based on the findings from the study.

1.14 Summary

This chapter provides an overview of the dissertation. It also provides the context within which the study was determined. It also presents the problem for the study, the aims and objectives, definitions of key concepts used, and an overview of the research design and methodology used in the study. Finally, the chapter provides an insight of the other chapters that constitute the dissertation. The next chapter reviews literature on the subject of knowledge retention in organisations, in general and institutions of higher learning in particular.

CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.1 Introduction

The previous chapter provided the background to the study, contextual setting, theoretical framework, problem statement, research objectives and questions, justification of the study, research methodology, as well as definition of key terms.

This chapter reviews literature on the subject of knowledge retention in organisations, particularly in the institutions of higher learning, in particular. Literature review is an important step in any research, because it places a study in the context of what others have written (Mouton 2008; Neuman 2006). Furthermore, reviewing literature helps the researcher to establish how other scholars have investigated similar problems (Mouton 2008; Neuman 2006). The following sections present the literature that was sourced relevant to this study. The study was organised according to the objectives as outlined in Chapter one. The literature review is placed under the following themes: knowledge acquisition; knowledge transfer and sharing; knowledge recovery initiatives; human resource processes and practices for knowledge retention; and information and communication (ICT) aspects of knowledge retention. These were regarded by the researcher as vital components which need to be integrated for a successful organisational knowledge retention programme.

2.2 Knowledge

Contemporary knowledge- based economies studies, such as the study by Peterson (2012) on knowledge retention strategies in selected Southern Africa public broadcasting corporations, like SABC, ZBC and DBS, have shown that knowledge is not just another resource, like labour or capital, but it is an important meaningful resource (Drucker 1995; Choo 1998). As a source of economic success, knowledge has displaced traditional factors such as land and labour, hence the need for knowledge retention in organisations (Peterson 2012). In the knowledge economy, knowledge and expertise of workers must be seen as critical strategic resources (Drucker 1992; Bender and Fish 2000) and as such organisations need to devise ways of retaining them (Joe and Yoong 2006). Knowledge may only be in the heads of the employees and is lost when they leave

(Tissen 1998). Therefore, organisations need to come up with strategies to retain it. This awareness of knowledge and its value has resulted in organisations investing in knowledge management in order to capture, preserve and retain knowledge for reuse for the betterment of their organisations. Wamundila (2008:83) argues that in a study conducted by Cloete and Galant (2005) it revealed that in South African universities through the Carnegie Project have "training and mentorship programmes targeted at the development of new generation of faculty members". Wamundila (2008) continues to say that Cloete and Galant (2005) in their report, *Capacity Building for the Next Generation of Academics*, reviewed five universities with programmes aimed at retaining knowledge. The universities included: The University of KwaZulu-Natal; Pretoria; Cape Town; Witwatersrand and the Western Cape. These Universities have policies that promoted "equity and capacity building". Thus although not practiced under the knowledge retention and management label, the activities carried out by these universities are aspects of knowledge retention and management.

2.2.1 Types of knowledge

Nonoka and Tekeuchi (1995) have categorised knowledge into tacit knowledge and explicit knowledge. These scholars further state that tacit knowledge resides in the people's minds and may be difficult to articulate. On the other hand, as argued by Peterson (2012) explicit knowledge is that knowledge which is found in an organisation's documents, databases, manuals and procedures. Explicit knowledge is easy to share. Since explicit knowledge is codified (McElroy 2002) people find it easy to transfer and it is regarded as leaky and migratory. Therefore, it is upon an organisation to gather and retain this knowledge through various means at work, meetings, workshops and seminars or in tutor and apprentice roles (Peterson 2012). In this way Nonoka and Tekeuchi (1995) argue that there will be little risk that the knowledge, of the institution will leave at the same time of the employees' retirement.

2.2.1.1 Tacit Knowledge

Tacit knowledge is the form of knowledge that is subconsciously understood and applied, difficult to articulate, developed from direct experience and action and usually shared through highly interactive conversation, storytelling and shared experience (Sunassee and Sewry 2011).

Tacit knowledge exists in people's minds. It is difficult to articulate in writing and is acquired through experience (Nonoka 1991). According to Polany (1962), tacit knowledge is that knowledge which cannot be explicated fully even by expert and can be transferred from one person to another only through a long process of apprenticeship. The main challenge in knowledge management is how to capture tacit knowledge and make it explicit that can easily be understood and used (Peterson 2012). Tacit knowledge is personal, context-specific and therefore hard to formalise and communicate (Nonoka and Takeuchi 1995). Thus, knowledge managers should facilitate and create an enabling environment that will enable subconscious release of knowledge from the mind of the knowers. Tacit knowledge (also known as informal or uncodified knowledge) is what you know or believe from experience and can be found in interactions between employees and customers (O'Dell and Hubert 2011). O'Dell and Hubert (2011) further state that it is hard to catalogue, highly experiential, difficult to document and ephemeral. Tacit knowledge management is the process of capturing the experience and expertise of the individual in an orgnanisation and making it available to anyone who needs it (Dalkir 2005). Knowledge remains tacit until someone asks a direct question (which at that point, tacit can now become explicit), but unless that information is captured for someone else to use again at a later date, learning, productivity, and innovation are stifled (Peterson 2012).

Literature such as the study carried out by Wamundila and Ngulube (2011) on how to enhance knowledge retention at the University of Zambia proves that there is agreement among researchers that tacit knowledge is the most important type of knowledge that exists in an organisation (Wamundila and Ngulube 2011; Tiwana 2002; Nonoka and Takeuchi 1995) since it can be put to action, is used in innovation and creative practices thus adding value to services and experience and skills of employees (Jacobs and Roodt 2007; Koskinen, Pihlanto and Vanharanta 2002). The surveyed literature reveals that authors agree that tacit knowledge is very important in organisations since it is associated with action.

According to (Peterson 2012) the organisations lose tacit knowledge when employees leave for other organisations and also due to other forms of attrition. Hamaza (2008:2) argues that "as long as they stay on employment with the organisation, they contribute playing a competitive figure through effective decision making, communication and contribution. Once employees leave an

organisation knowledge in their heads is also gone." On the study carried out by Wamundila and Ngulube (2011) on how to enhance knowledge retention at the University of Zambia, it indicates that knowledge retention challenges do exist in the form of retirements (58.9%), resignations (64%) and deaths (58.9%).

2.2.1.2 Explicit Knowledge

According to Sunasse and Sewry (2011) explicit knowledge is easy to articulate, capture and distribute in different formats, since it is formal and systematic. Bouthillier and Shearer (2002) define explicit knowledge as knowledge that can be codified and therefore easily communicated and shared. Since explicit knowledge is shareable it is regarded as leaky and migratory (Peterson 2012:57). Explicit knowledge is codified, recorded and available, and is held in books, journal articles, databases, in corporate intranets and intellectual property portfolios (Tiwana 2002). Explicit knowledge (also known as formal or codified knowledge) comes in form of documents, formulas, contracts, process diagrams, manuals and records (O'Dell and Hubert 2011) and that this kind of knowledge is not useful without context provided by experience. Since codified knowledge is shareable, it can be readily transmitted to individuals formally and systematically (Takeuchi and Nonoka 2004).

2.3 Knowledge retention

This section of the chapter reviews studies that investigated the retention of knowledge. Focus is placed on the studies that were conducted in developed and developing countries. Knowledge retention, as sub-discipline in knowledge management, is less covered in academic research (Levy 2011; Phaladi 2011).

Knowledge retention is the capture of critical knowledge and expertise that is at risk of loss when employees leave an organisation (Kim 2005; Dan 2008). According to Peterson (2012), knowledge retention aims at retaining as much of the departing employees' expertise and knowledge as possible. He further explains that it is a managerial practice to ensure that knowledge is captured and retained before experts walk out of the organisations through various forms of attrition. In situations where the university workers decide to leave the institution,

knowledge retention ensures continuity of knowledge. Levy (2011) states that through knowledge retention, an expert's most valuable knowledge has to become an organisational asset. Experts and other specialists may not be willing to have their knowledge captured and such employers may provide some incentives for members of staff to share their knowledge (Peterson 2012). Knowledge, expertise and skills are found in organisational employees' heads. When such people leave, the knowledge is lost unless there are measures in place to capture, preserve and transfer it. Staff attrition is inevitable and vast knowledge does accompany retiring or departing workforce out of the door (Peterson 2012). Employees retire due to age. In many cases, these are the subject matter experts whose critical knowledge needs to be captured (Kim 2005). Loss of knowledge can result in duplicating work, expensive search for expertise and knowledge and employees not learning from the experienced. When senior employees leave without handing over guidance or organised procedures, the job performance of successors often does not equal that of the retiree or transferee (Peterson 2012).

Some of the organisations such as institutions of higher learning which have realised the importance of knowledge for their businesses have insitutionalised processes to capture and retain employee knowledge (Thomas 2009). In order to ensure knowledge retention organisations make use of interviews, videotaping, structured use of subject matter experts, repositories, mentoring and apprenticeship, knowledge maps, recruiting strategies, storytelling, leveraging retirees' in-house training functions, and sharing knowledge (Peterson 2012).

Knowledge enables individuals to perform and make decisions thus contributing to a large extent to the way individuals and organisations operate (Maponya and Ngulube 2007). Dixon (2000) observes that organisations are now addressing the issue of knowledge sharing due to their growing awareness of the importance of knowledge to organisational success. Through sharing, knowledge is retained in the organisation's employees (Peterson 2012). The transfer and sharing of knowledge for the purposes of retaining it, in any organisation has its own challenges. Such challenges include mistrust, politics, reluctance to share knowledge for fear of losing individual power, hoarding knowledge and absence of strong group affiliation (Fombad 2009; Wiig 1997). Generally people hoard, hold onto knowledge and are reluctant to share it (Yang and Fam 2009).

Knowledge retention is about focusing on the critical knowledge that is at risk of loss and developing actionable plans to retain that knowledge (Dan 2008). Not all knowledge in a university is of value and need not be captured and retained except that which is critical and at risk of loss (Wamundila 2008). Knowledge has appeared as the most strategically important resource for organisations (Grant 1996) and therefore, losing it would affect organisational performance. Statistics and literature searches related to knowledge retention in universities indicate that these entities lose some years of collective experiences and university knowledge due to retirements and staff departure. A study, by Waswa and Katana (2008) on academic staff perspectives on operating beyond industrial actions for sustainable quality assurance in public universities in Kenya, indicate that qualified academic staff have resigned from Kenyan universities and secured better paying jobs abroad. Long-term senior lecturers and senior executives take with them, knowledge of day to day operation of the facility, past successes and failures within the organisation and awareness of planning and decision-making that formed the institution (Lahaie 2005). In most cases, these individuals hold critical knowledge in their respective fields.

Vinson (2003) posits that when discussing knowledge retention, the primary concern is how to tap the brains of employees who are retiring, moving on to new jobs or otherwise leaving the organisation. He further suggests that knowledge sharing (ideas, best practices) and working with lessons learned but ignores other strategies such as communities of practice, archiving knowledge, mentoring, coaching, data curative and so forth. Knowledge is lost through retirement and movement of people but this can be overcome by documenting previous processes and procedures, forming communities of practice and harvesting knowledge. To retain important information and knowledge has remained the main challenge and strategic goal for organisations (April and Izad 2004). Knowledge can be retained in an organisation through various strategies that may involve education, training, establishing communities of practice and professional networks, documenting the processes and use of advanced software to capture work processes (Wamundila and Ngulube 2011; April and Izad 2004; Vinson 2003; Thomas 2009; Lahaie 2005). Most of the knowledge in organisations exists as tacit knowledge gained and built-up through years of experience (Peterson 2012). This knowledge must be captured and stored in the organisations' repositories such as databases, records, software and embedding it in

processes, products and services thus transferring the existing knowledge around in the organisation (Galagan 1997).

Studies that investigate knowledge retention in the SADC countries appear to be on increase (Phaladi 2011; Wamundila and Ngulube 2011). For instance Phaladi (2011) investigated the knowledge transfer and retention in the East Rand Water Care Company of South Africa. Data were collected through interviews. The experts who were interviewed were reluctant to contribute to knowledge transfer and retention. They perceived the junior staff as likely to leave and that the organisational culture did not support knowledge transfer and retention activities. In another study conducted by Wamundila and Ngulube (2011) investigated how knowledge retention may be enhanced at the University of Zambia (UNZA). The study was conducted by collecting data from thirteen senior management and 205 academics. Data collected through interviews and self-administered questionnaire indicated that the university lacked knowledge retention strategies to retain operational knowledge. The results indicated 27% of the respondents agreed that UNZA use succession planning as a way to retain knowledge, while 48% confirmed being members of a community of practice which is geared towards knowledge retention. These strategies assist in capturing tacit knowledge of experts in a university.

Another study conducted by Levy (2011) which involved eight organisations with more than thirty retiree knowledge retention mini projects, determined that successful knowledge retention could be achieved through documenting, integrating knowledge back into the organisation with particular care being dedicated to retaining knowledge. Levy (2011) further argued that people may retire leaving significant knowledge outside the organisation, causing business loss. The importance of capturing knowledge from retirees has been reported in several studies (Levy 2011; Mohamed and Mynors 2006; Madsen, Mosakowski and Zaher 2002; Newman and Conrad 1999; Poole and Sheehan 2009; APQC 2011). These indicate the value of knowledge that is held by retirees is immense and that organisations, such as universities, need to capture knowledge from retirees of such institutions.

When considering knowledge retention, Dan (2008) suggests that the following three questions must be asked:

- What knowledge may be lost?
- What are the organisational consequences of losing that knowledge?
- What actions can be taken to retain that knowledge?

This observation concurs with Young's (2006) view who describes a step-by-step process to combat the problem of organisational knowledge loss. It includes:

- The need to be aware of the risks that an organisation faces if knowledgeable and valuable staff members leave. This motivates the desire to retain knowledge by deploying knowledge retention strategies.
- A programme to retain knowledge of staff must be put in place. This type of knowledge is that which senior executives regard as irreplaceable, crucial, and valuable for the future success of the organisation.
- To determine the status of the retention programme by considering whether the retention methods are going to be a one-off activity or will be part of the programme.
- The last step considers the value equation, thus whether the cost of knowledge retention is worthy the knowledge captured for future use.

From DeLong's (2004) Knowledge Retention Strategy Framework the following that is knowledge transfer practices; human resource policies; knowledge recovery initiatives; and information technology applications to capture, store, and share knowledge are the strategies that were reviewed for knowledge retention.

2.3.1 Knowledge retention in organisations

Knowledge management discipline has coincided with the development of the global knowledge based economy where emphasis has been shifted from traditional factors of production, namely capital, land and labour, to knowledge (Jasimuddin 2008:57). Organisations are faced with the challenge of managing knowledge which is deemed central in enhancing products or services.

The forces of technology, globalisation and emerging knowledge economies are creating a revolution forcing organisations to seek new ways to reinvent themselves (Rowley 2000:1). The

knowledge-based society has arrived. Organisations that will succeed in the global information society are those that can identify value, create and evolve their knowledge assets (Rowley 2000:325). The creation of knowledge occurs in an unexpected or unplanned way (Dalkir 2011:65). This is particularly evident in a university setting where knowledge is produced by various academic staff through presentations, teaching, project supervision and writing publications. Loh et. al. (2003:9) eloquently contends that the creation of a *knowledge environment* in which knowledge management activities such as knowledge creation, transfer and use, can be embraced have traditionally been embedded within the academic reward structure of research and scholarship.

Many times in an organisation, employees work on various tasks and none of that knowledge is captured. According to Dalkir (2011:19) much of an organisation's valuable knowledge walks out the door at the end of the day. Loh et al. (2003:9) points out that few universities have an integrated collection of knowledge, embedded either in one knowledge repository, or in a series of linked repositories. This makes it hard for knowledge to be re-used and hence leads to re-inventing the wheel. According to Fernandez (2008:4), a greater challenge rests in the development of ways to manage the expertise of employees that reside solely in their minds, and to enhance the returns of such knowledge.

What would be the motivation for an institution of higher learning to have knowledge retention strategies in place? According to Dalkir (2011:4), some of management's motives are obvious: the loss of skilled people through turnover, pressure to avoid re-inventing the wheel, pressure for organisation-wide innovations in processes, products, managing risks, and accelerated rate with which new knowledge is generated.

Institutions of higher education can benefit from knowledge retention practices, by creating and maintaining relevant knowledge repositories, improving knowledge access, enhancing the knowledge environment and valuing knowledge (Loh et al. 2003:1). The question from an operational perspective is how can a 'knowledge' perspective lead to improvements in performance? (Colin 1999:143). The irony being that knowledge has always been produced in

higher learning institutions. The challenges of knowledge duplication and losses clearly call for knowledge retention.

Knowledge retention is very significant in institutions of higher learning. With the increasing reliance on knowledge to grow economies coupled with the influx of information due to new technologies that has made it easier to produce and distribute information. These external forces are some of the aspects that have prompted institutions to adopt knowledge management practices to ensure that relevant knowledge is captured, stored and shared. Academic institutions form part of the key sectors that should embrace knowledge management, particularly as they are learning institutions. Hence, they should ensure knowledge production, usage and retention. Hwang (2003:92) defines a learning institution; "as an institution, in which its members can acquire, share, create knowledge or apply it in their decision making. In order to manage knowledge, an academic institution has to realise its actual knowledge needs and capacity to manage it". This simultaneously raises the need for such institutions to have ways of retaining knowledge.

2.3.2 Knowledge retention at institutions of higher learning (IHLs)

According to Materu (2007) and Oosterlinck (2001), the rationale for the existence of universities can hardly be questioned in any given society. This is because of the fact that there are many benefits associated with university outputs. Unlike corporate and government institutions, universities have a unique mandate in society. They are regarded as the "reservoirs of knowledge, be it explicit or tacit" (Tippins 2003). Tasked with these responsibility to society, it is therefore, expected that managing universities is a challenging task (Wamundila 2008). Initially one of the challenges of managing a university was lack of finances (Johnstone 2004; Kurasha 2006; Tetty 2006). Of late, however, not only have finances been identified as a challenge but also operational functions (South African Council of Higher Education 2001). According to Oosterlinck (2002), universities have been practicing knowledge management according to the three mission statements of teaching, research and service. According to (Butcher 2007:2) "KM should be fundamental objective of any educational institution, as learning is its core function and should be reflected in how the organisation operates".

The nature and structure of IHLs makes them vary from other organisations making the concept of managing knowledge a bit more complex. Universities have a larger population all embedded in different smaller "institutions" such as libraries, faculties, schools and departments. All of these may be totally parallel to each other in terms of activities yet geared towards attaining the same goals. According to Shattock (2010:7), universities are multi-faceted, multi-product organisations which increasingly in the modern era are taking on additional roles, particularly in relation to the knowledge economy and social inclusion.

While carrying out their duties, university staff (both academic and non-academic) create knowledge that is beneficial to the society in general and the university in particular (Wamundila 2008). Thus, with the understanding that knowledge retention is the preservation of relevant operational knowledge (Delong 2004; Newman and Conrad 1999), the need to retain university knowledge has become apparent. Evidently, the need to retain organisational knowledge emanates from the identified drivers of knowledge retention: changing workforce demographics and profiles; employee turnover and mobility; and the need to document organisational knowledge (Gunnlaughstottir 2004).

Many institutions, including the academic institutions face a historical challenge in their workforce age demographics. As increasing numbers of senior employees edge closer to retirement, new employees are recruited to fill their places. The loss of experienced personnel combined with the influx of young employees is creating unprecedented knowledge retention and transfer problems. These threaten organisations capabilities for operational excellence, growth, and innovation. Organisations including universities need to exploit practical, effective retention and transfer processes and tools to minimise business disruption and accelerate competency development (Liebowtz 2009). Knowledge can be retained in universities through various strategies that may involve education, training, establishing communities of practice and professional networks, documenting the processes and use of advanced software to capture work processes (Wamundila and Ngulube 2011; April and Izad 2004; Vinson 2003; Thomas 2009; Lahaie 2005).

2.4 Knowledge retention policy

One way of ensuring a successful introduction of knowledge-based initiatives in an organisation is through the formulation of a knowledge policy or strategy (Dewe and Wright 2007:8; Soft AID Computers Limited 2005).

The role of a policy in an organisational management has for a long time remained vital and is viewed as a mechanism for instituting organisational control over resources (Buchanan and Hucynski 1997:708; Ruschcliffe Borough Council 2005). According to the Municipal Research and Services Center (1999) "Policies are created to guide decision making … [and] formally adopted policy generally takes the form of a governing principle, plan, or course of action", and key policy-making activities include:

- The development of a vision.
- The adoption of goals and objectives.
- The adoption of comprehensive plans, decisions about which programmes and services will be provided.
- The adoption of budgets and capital facilities plans.

Similarly, where policies may not be in place, other organisations develop strategies or strategic plans that at least serve similar purposes as a policy.

According to the guide by Ruschcliffe Borough Council (2005), "a policy is a set of guiding principles or rules intended to influence decisions and actions that reflect agreed practice" while "a strategy is a high level approach to an issue that is designed to deliver change by implementing policy". Given these definitions, the Ruschcliffe Borough Council (2005) differentiates a policy from a strategy by indicating that "policies differ from strategies in that they are statements, rather than high level plans delivering change". Thus as noted by the State University of New Jersey (1995) in its strategic plan: The University Strategic Plan articulates a planning process… The commitments, goals, and strategies set forth in the plan indicate the direction the university will take in order to maintain and enhance excellence in all of its endeavors.

A strategy is a product of a policy. However, this might not be always the case as it is also possible to have a policy formulated from a strategic plan (Wamundila 2008:85). Wamundila (2008:85) continues to say that this understanding is quite true with most higher learning institutions like universities where strategic plans are regarded as guides and departure points for most operational activities. Following this argument and based on practical observation, the introduction of knowledge management initiatives in organisations is also either by the formulation of a policy or development of a strategy (International Fund for Agricultural Development 2007; Soft-AID Computers Limited 2005). According to Helderman (1999) the knowledge management policy "is the policy in which the organisation makes clear which knowledge is required for its wellbeing. It is based on the organisation mission, primary goals, and strategy". Mohrman and Finegold (2000) also explain that a knowledge management strategy "guides activities and instills commitment from knowledge workers, who can plan their own development and feel that the company has a future".

The above argument is further supported by IFAD (2007), who, when developing their strategy for knowledge management "conducted a baseline assessment of its current knowledge situation; sought to gather, understand and apply the 'lessons learned' from the efforts of other institutions…" Based on the studies, "two key premises" were identified which should be used when developing a knowledge strategy. The premises as presented by IFAD (2007) were that;

- An institution's strategy for knowledge management must be firmly rooted in its core competencies, embedded in its work processes and linked tightly to its main products. Successful knowledge management strategies build on existing assets: and
- While appropriate hardware is essential, the key to successful knowledge management is found in the culture and mindsets of an organisation. The right mix of incentives is, therefore, critical.

2.5 Knowledge acquisition, transfer and sharing

This section dealt with knowledge acquisition, knowledge transfer and sharing. Techniques for knowledge acquisition, transfer and sharing are discussed.

2.5.1 Knowledge acquisition

Knowledge acquisition in organisations falls within two broad streams; explicit to tacit, and tacit to explicit mode. The explicit to tacit stream as one form of organisational learning is usually represented by the training and development efforts within an organisation. The tacit to explicit form of organisational learning/acquisition is usually represented by the organisational memory creation efforts of an organisation (Poulymenakou, Cornford and Whitley 1990). While looking at organisational problem solving, Poulymenakou, Cornford and Whitley (1990) suggest that not only does knowledge acquisition facilitate documentation of "past problem solving cases for future reference," but it is equally an enabler of problem visualisation and support mechanism for the individuals handling a given scenario. This is possible as organisational knowledge is found in many "agents" usually not easily available when required for problem solving, a situation that requires knowledge acquisition to provide means for incorporating knowledge available in different parts of organisations thus, providing managers with different perceptions of issues they are considering in every occasion (Wamundila 2008).

Based on the above consideration, it is safe to argue that not only is knowledge acquisition a vital requisite in organisational problem solving, but is equally important for sustaining organisational operations (Wamundila 2008). Lyles and Salk (2006:14) empirically established the existence of a positive relationship between knowledge acquisition and organisational performance vis-à-vis business performance and building employee competencies.

McCall's (2006) knowledge acquisition model indicates that there are two ways in which organisational knowledge is acquired. These are declarative knowledge acquisition and procedural knowledge acquisition. He argues that declarative knowledge acquisition occurs when individuals perform their work by either referring to an example or written rules, thus "encoding this declarative into declarative memory" resulting into declarative knowledge acquisition. On the other hand, the author argues that perpetuated use of declarative knowledge results into procedural knowledge acquisition.

Analysing McCall's (2006) knowledge acquisition model, the interaction between explicit and the tacit knowledge becomes clear. Such interactions can be related to Nonoka's (1994) theory of

organisational knowledge creation. The author contends that the concept of organisation knowledge creation is much encompassing than that of organisation learning. He further argues that the concept knowledge acquisition can only be likened to one of the four models of knowledge conversion called "internalisation"' where explicit knowledge is converted into tacit knowledge.

Nonaka's internalisation model is consistent with Argyris' (1994) views in Tsai and Lee (2006). The author indicates that the two types of learning exist in organisations namely single loop and double loop learning. While the former is concerned with "one-dimensional learning", where, for instance, an individual might be required to understand an operating standard procedure, the latter is concerned with not only understanding the operating procedure but also "why" such procedure must be understood. Tsai and Lee (2006:60) stresses that such an approach to learning facilitates critical thinking and evaluation.

In a nutshell, in order to enhance effectiveness in work performed, employees must consistently "update the knowledge they have learned, in order to go further and create better knowledge to perform their jobs" (Tsai and Lee 2006:60). Tsai and lee (2006:60) claim that failure to utilise acquired knowledge, that is, "learned concepts into real work situations", may explain why most organisations have failed to succeed. This view is in support of Soo, Midgley and Devinney (2002) who examined the relationship between knowledge acquisition, problem-solving capacity, new knowledge creation and firm performance, and deduced that a positive relationship between knowledge acquisition and firm performance exist.

From a classification perspective of tacit and explicit knowledge, Soo, Midgrey and Devinney (2002), stresses that knowledge acquisition involves an organisation's external interactions and internal practices "such as employee interactions, databases systems, and training and development".

While the above has focused on the acquisition of knowledge from explicit to tacit perspective, research in computer science, information systems and artificial intelligence in particular addresses the issue of knowledge acquisition based on tacit to explicit knowledge acquisition

(Kang and Lau 2002; Liou 1990' Liou 1992; Wagner 1990). Liou (1990:213) indicates that the process of knowledge acquisition has three main components namely:

- Participation of human resources (domain experts, knowledge engineers, users and managers, each with a different role to play);
- Knowledge elicitation techniques; and
- A structured and systematic approach to performing the knowledge acquisition task.

Liou (1992:59) stresses that while the knowledge engineers are concerned with the elicitation of the required knowledge domain from the experts who should be determined by experience and practice within the required knowledge domain. The knowledge engineers are equally responsible for the designing of the system (mainly expert systems and knowledge bases) where the knowledge will be stored and be readily available to be accessed. Liou (1992:59) provides a detailed methodology for knowledge acquisition based on a tacit to explicit mode as one that comprises the following stages:

- Planning for knowledge acquisition;
- Knowledge extraction;
- Knowledge analysis; and
- Knowledge verification.

Knowledge acquisition practices include recruitment, training and development, brainstorming, expert systems, subject matter experts and after action reviews (McCall 2006; Soo, Midgrey and Devinney 2002; Tsai and Lee 2006).

2.5.1.1 Knowledge acquisition techniques

According to Wilson (1989), there are many techniques for knowledge acquisition in organisations. According to authors like Harman and Brelade (2000) recruitment as well as training and development are some of the many knowledge acquisition practices. Mumford (1995) in Adams (2001:236) provides that intuitive, incidental, retrospective and prospective approaches facilitate work based knowledge acquisition. According to Wagner and Zubey (2005) among the common used techniques for knowledge acquisition include interviews, protocol

analysis and card sorting. Liou (1990:220) provides the following as knowledge acquisition techniques:

- Basic techniques – interviewing, structured interviewing and observations;
- Group techniques – brainstorming, nominal group technique, Delphi technique, consensus decision-making and computer-aided group discussions; and
- Supplementary techniques – protocol analysis, discourse analysis and repertory grid analysis.

Other authors such as Townsend and Gebhardt (2001) cite "After Action Reviews" as a practice that facilitates knowledge acquisition. According to Wamundila (2008), knowledge acquisition includes a range of varied techniques, and accordingly, Milton (2003:2) argues that many techniques exist because of many different types of knowledge in organisations which require different techniques to access.

2.5.1.1.1 Recruitment

According to Corredoira and Resenkopf (2006:20) and Harman and Brelade (2000), recruitment is the activity that is used to ensure the availability of tacit knowledge within an organisation. Recruitment is "the practice of deciding what the company needs in the candidate and instigating procedures to attract the most appropriate candidate for the job (Edwards and Rees 2006:197).

According to DeLong (2004:166), recruitment should be driven by an organisation's knowledge requirement. He continues to argue that the shortage of skilled personnel as well as shrinking talent pool of would be recruitees pose serious challenges for knowledge retention. He cites BP and Trinidad and Tobogo as one of the organisations that have used knowledge based recruitment. The approach used was based on initiatives recommended by Accenture and BPTT exploration team. The recommendations among others included:

- resourcing new employees through a proactive and targeted recruitment processes; and
- ensuring availability of a pool of qualified candidates to meet future staffing needs.

From the views expressed by DeLong (2004) and Harman and Brelade (2000), there is evidence that there has been a revolution in the way organisations acquire knowledge through recruitment. Such a revolution not only reaffirms the supremacy of knowledge as an organisational resource that offers competitive advantage (Politis 2003) but also represents a best practice for addressing knowledge gaps in organisational operations.

2.5.1.1.2 Training and development

In an organisation there comes a time when either the introduction of new roles or indeed re-designing operations due to changes in the work environment occur. There or also times when operations remain unchanged, but the organisation loses its staff with relevant operational knowledge and thus undertakes recruitment of new staff (Wamundila 2008). These scenarios create a knowledge gap between employee and the required employee performance. Therefore the situation necessitates the need for existing staff to acquire new operational relevant knowledge (Rowold 2007). Mostly this gap is often closed through a knowledge acquisition technique called training and development (Corredoira and Rosenkopf 2006; Okiy 2004; Rowold 2007). The practice of training and development also referred to as staff development is a common practice in universities (Browell 2000). With the coming of the knowledge-based economy, training and development has been broadened to encompass terms like “Continuous Learning”, “Continuing Professional Development” (CPD) and “Life Long Learning” (Browell 2000; Pjp 2001; Tuschling and Engemann 2006; World Bank 2003). Regardless of the terminology used, the objective of training is to achieve “better performance in the work place” (Vermeulen 2002:368).

There are various training approaches used for work-based knowledge acquisition in organisations. Dekker (2002) distinguishes between general and firm-specific training where the latter refers to training with a view to acquire knowledge for the current job and the former referring to training whose objective is not only limited to acquiring knowledge for the current job but also for future career development. This categorisation of training is also evident in universities (Stanford University 2003). In its staff development programme, Stanford University

(2003) recognises the importance of both Job-Related Training and Career Development Training.

2.5.1.1.3 Intuitive, incidental, retrospective and prospective

Mumford (1995) in Adams (2001:236) give four ways that facilitate work based knowledge acquisition. These are intuitive, incidental, retrospective and prospective. These are illustrated in Table 2.1.

Table 2.1 Mumford's Work Based Knowledge Acquisition Technique

Work Based Knowledge Acquisition Technique	**Description**
Intuitive	The intuitive learning is knowledge acquisition based on experience and the learner usually fails to understand what is learned but, however, recognises that they have learned something. The fact that learning is due to exposure to work environment and is difficult to articulate implies tacit knowledge acquisition since tacit knowledge is the one with such characteristics
Incidental	Incidental learning is where knowledge acquisition is by way of "mishaps" while performing a task and one takes note of such mistakes for the future
Retrospective	Retrospective learning is based on the ability to reflect back on actions by assessing what actually happened while performing a task. With time, one is able to make conclusions and therefore, reinforce the acquired knowledge
Prospective	Prospective learning is knowledge acquired on past experience as well as planning to acquire knowledge before indulging in nay work

2.5.1.1.4 Interviews (Protocol Generation)

Wagner and Zubey (2005) indicate that interviews or protocol-generation techniques as referred to by Milton (2003) are of various types including unstructured and structured interviews. The use of interviews as a way of acquiring knowledge is a common technique in human resources (Wamundila 2008). They are often used when engaging a new employee, when creating knowledge repositories or indeed, at the time an employee is leaving the organisation (Kelleher 2006). With reference to the creation of a knowledge repository, an expert could be interviewed while performing his/her job (Wagner and Zubey 2005:406).

In most of the organisations, most of the interviews that are conducted when an employee is exiting the organisation focus much on typical human resource matters such as what an employee might not have liked during their tenure in that organisation. Though such attempts can lead to staff retention, Kelleher (2006) argues that the worry should not be the loss of that person's capacity to take the role – a capacity that can be replaced by a new recruit – but about the loss of knowledge to the organisation … The problem is exacerbated when the person is regarded as an expert in the field, either through skills and qualifications or simply through length of time in employment.

Thus, the interviews should be based on the various knowledge that the departing individual is likely to leave with.

2.5.1.1.5 Protocol analysis

This technique involves "thinking aloud" during problem solving and when making decisions (Wagner and Zubey 2005:407). Usually, someone performing a task would be asked to "talk about his or her thinking process while solving the problem and the virtue of using this technique lies in the fact that specific actions for solving the given problem are transcribed" (Liou 1990:223). However, the technique has been criticised on the basis of "forcing the expert to express actions in words" (Wagner and Zubey 2005:407). Documenting one's know-how has

been viewed as a way of converting tacit knowledge into explicit knowledge, which could be stored in a knowledge base for ease of reference by others in the organisation (DeLong 2004).

2.5.1.1.6 Card Sorting

This technique of knowledge acquisition involves structuring an expert's knowledge (Wagner and Zubey 2005:407). Thus, recognised objects, experiences and rules are written down on cards and the involved expert is then asked to sort them into subject groups. Milton (2003) argues that the use of sorting techniques brings to the role of knowledge classification and different knowledge properties among other issues. Lambe (2007:10) indicates that much taxonomy for classifying organisational knowledge exists, including: lists; trees; hierarchies; polyhierarchies; matrices; facets; and system maps. The author argues that taxonomies serve as "artificial memory" for well organised organisational knowledge.

2.5.1.1.7 Observation

In this technique an expert in a certain field teaches a new employee by way of letting the new employee watch the expert performing the job. According to Liou (1990:222), this technique works well in a novice-expert situation. To ensure that the novice masters the task performed, documenting the salient steps involved in performing such a task or indeed recording the expert are ensured. As already noted, this technique for knowledge acquisition is usually used in expert-novice relationships (OhioEPA, 2006) and apprentices are a well-known cadre in this regard (DeLong 2004).

2.5.1.1.8 Brain storming

Brainstorming as knowledge acquisition technique is "a group method for developing ideas and exploring their meaning| (Liou 1990:225). However, it's use is dependent on the introduction of a scenario, and thus, it is viewed as a mechanism for instituting thinking for the purpose of generating ideas (Liou 1990:225). According to Wamundila (2008:50-51), in real life, brainstorming sessions take place in board rooms and the product of such sessions is, among others, the production of minutes.

2.5.1.1.9 Expert systems, subject matter experts and after action reviews

With focus on knowledge retention, the IMB Business Consulting Services (2003:6) in Wamundila (2008:51) informs of the available knowledge elicitation techniques for preservation of organisational memory with focus on "working with individual's to take their tacit knowledge and transform it into a more explicit and tangible format". According to Wamundila (2008:51), these knowledge acquisition techniques whose objective is to make "an individual's knowledge by preserving it in some form of a repository" include expert systems; subject matter experts; and after action reviews. Thus according to Wamundila (2008:51), there are some relationships between interviews and expert systems while subject matter expert relates to protocol analysis. Wamundila (2008) continues to say that after-action reviews are more or less the same with Mumford's (1995?) retrospective knowledge acquisition approach.

Subjecting IMB Business Consulting Services (2006:6) in Wamundila (2008:51) techniques to a detailed analysis, one notes their similarities to the other techniques discussed earlier.

2.5.2 Knowledge transfer and sharing

Knowledge sharing is the willful application and transfer from one (or more) person's ideas, insights, solutions, experiences (knowledge) to another individual either via an intermediary such as a computer-based system or directly (Turban, McLean and Wetherbe 2004; Bouthiller and Shearer 2002). This sharing is essential when employees arrive and others quit. Those quitting could be retirees, who have accumulated years of experience and knowledge that new employees need to utilise in work situations. Studies have shown that much of the organisational knowledge is tacit (rather than explicit) in nature and for organisations to retain the knowledge and benefit; there should be willingness on the part of employees who possess it to share (Hislop 2003; Katsirikou 2003; Jacobs and Roodt 2007). The knowledge that could be shared among learning institutions members include best practices; knowledge found in research articles, abstracts, and non-academic articles; and knowledge on how to manage the university records. Knowledge shared by individuals and by a community of practice becomes organisational knowledge (Peterson 2012:68). With their connectivity and interactivity, individuals and groups create

knowledge through knowledge sharing. This knowledge is retained in the organisational processes. Knowledge can be shared through storytelling, job rotation, forming communities of practice and through the intranets.

Knowledge transfer has been defined as an activity that facilitates knowledge flows in organisations (Bou-Llusar and Segarra-Cipres 2006). They continue to argue that knowledge transfer refers to exchange of knowledge between units within a firm (internal transfer) or between different firms (external transfer). Knowledge transfer is a tool for problem solving and operational enhancement (McCall 2006). Such knowledge flows may involve interactions of individuals or making reference to codified knowledge (Lochhead and Stephens 2004). According to Wilkesmann (2007) knowledge transfer is about providing and obtaining knowledge. Such an understanding of knowledge transfer assumes the existence of a link between knowledge acquisition and knowledge transfer. Antal (2003) stresses that "once knowledge has been acquired, it must be distributed. If knowledge remains with the unit or the individuals who obtained it, it is of little use to the organisation. For Fadel and Tanniru (2005) knowledge transfer is the application of acquired knowledge to work situations.

With a view to empirically verify transfer of knowledge in multinational corporations, Pederson, Petersen and Sharma (2006) differentiates between experiential and object knowledge transfer, with the former relating to tacit knowledge transfers and the later implying explicit knowledge transfer. Janz and Prasamphanic (2005:2) believe just like knowledge acquisition, knowledge transfer is a feature of organisational learning. Stovel and Bontis (2002:308) stress that investments in employee training and development activities are a positive attribute for knowledge transfer in the form of on-the-job training or off-the-job training. Such training ensures a continuous update of skills. Chisholm and Holifield (2003) in Wamundila (2008) held similar views after they examined tacit knowledge transfer within the contest of Work-Based Learning as a mechanism for Continuous Professional Development (CPD).

2.5.2.1 Knowledge transfer and sharing techniques

With many institutions, academicians and practitioners (DeLong, 2004; Stovel and Bontis 2002; University of California 2006) underscoring the importance of managing knowledge, several approaches to knowledge transfer have been identified including:

- Succession planning;
- Communities of practice;
- Coaching;
- Creating knowledge repositories through documentation;
- Story telling;
- Orientation, general and job specific;
- Mentorship, formal and informal;
- Job rotation; and
- Phased retirement.

According to (Butler and Roch-Tarry 2002; Gale 2007; Ohio Environmental Protection Agency 2006; Stovel and Bontis 2002), knowledge transfer practices include succession planning, communities of practice, knowledge repositories, mentoring, coaching, phased retirement, job orientation, storytelling and orientation. Meanwhile according to the knowledge retention strategy framework adopted from DeLong (2004), knowledge transfer practices include: job rotation programmes, training programmes, mentoring and coaching, standard operations procedure, informal networking and internships.

2.5.2.1.1 Succession planning

One of the most common known knowledge transfer approaches is succession planning (Butler and Roch-Tarry 2002). Stovel and Bontis (2002:309) argue that “knowledge management within firms is the heart of succession planning”. They stress that knowledge transfer through succession planning represents a proactive step towards the empowerment of new employees and consequently, avoidance of loss of knowledge by the organisation.

According to Butler and Roch-Tarry (2002:37), succession planning is an “ongoing, dynamic process” that focuses on the transfer of knowledge necessitated by an ageing workforce, unforeseen loss of knowledge due to deaths and turnover, and ensuring identification of “skills and competencies throughout the organisation”. They further argue that most organisations fail to exploit the potential of succession planning mainly due to absorption in “day-to-day issues, overly focused on short-term results or unable to adapt to change”.

Cardinal to the process of succession planning is talent identification (University of California 2006). The University of California (2006) identified various ways that can be used for talent identification and development for purposes of an effective succession planning programmes.

2.5.2.1.2 Communities of practice

Communities of practice are voluntary groups of people held together by a common sense of purpose, who share a concern, a set of problems, or a passion about a topic and who deepen their knowledge and expertise in a particular area of concern by interacting on an on-going basis with a real need to know what each other knows (Skyme 1999:63; Kim, Lee and Oslon 2008; Albers 2009). Such people have a common sense of purpose and common interests; they share work-related knowledge and experience and engage in a collective process of learning (Jain 2009; Abell and Oxbrow 2001). Peterson (2012) says that in order to retain knowledge, organisations rely on communities of practice for the purposes of identifying, capturing, and transferring knowledge. He continues to argue that communities of practice share experiences and insights but the people are not a formal team. Communities of practice working on company projects and initiatives share both tacit and explicit knowledge by taking information and materials and refining them to a point where they can become corporate positions on topics.

Tacit knowledge is regarded as the most important form of knowledge in any organisation because expertise rests on it (Nonoka and Tekeuchi 1995; Irick 2007; Jain 2009) but capturing it remains a major challenge. While no technology or database can capture all knowledge required in an organisation, communities of practice have proved the most powerful tools for learning and sharing knowledge for intellectual interaction and experience (Jain 2009). Communities of

practice can be used to capture retired and older employees' knowledge. Peterson (2012) argues that while it is generally agreed that tacit knowledge is very difficult to transfer from one employee to another, a community of practice is one strategy of helping knowledge transfer from the experienced, skilled, talented or from old employees to the younger employees. In this way, knowledge can be retained in the organisation when those who possess it depart.

Among the virtues for using communities of practice in organisations and universities include: ability to connect professionals, encourages knowledge sharing on a large scale and thus enabling survival of knowledge within the organisation and speeding up the learning for new members (DeLong 2004:114-115; Ngulube and Mngadi 2007). O'Dell and Hubert (2011) through their research found out that COPs can: provide the means to translate local know-how into global, collective knowledge; help employees exchange ideas, collaborate, and learn from each other; transcend boundaries created by work flow, functions, geography, and time; enable speed and innovation needed for marketplace leadership; and integrate into the fabric of your organisation's core work and value claims and successfully align with formal governance structures.

2.5.2.1.3 Mentoring and apprenticeship

Many universities are involved in mentoring and apprenticeship programmes including University of Aberdeen (University of Aberdeen 2006). At the University of Reading, the Senate agreed that "all new members of academic staff, regardless of seniority, should have an appointed mentor to assist the induction process". The university passed such a decision as it recognised the fact that "even experienced academics need guidance on the procedures of both the department and university. For new lecturers the need for ongoing support on all aspects of academic practice is particularly important (University of Reading 2007).

Mentoring and apprenticeship can be used as a strategy of transferring tacit knowledge, from an experienced employee (subject matter expert) to a more junior employee (LaMonica 2007; Nonoka 1997; APQC 2011). Mentorship entails the pairing of an experienced member of staff with a new employee in order to assist the new employee acquire new knowledge and skills to

operate (Beazley, Boenisch and Harden 2002). Mentoring and tutoring techniques enable senior employees to transfer their knowledge, wisdom, specific insights and skills to their juniors within a short space of time such that when the experienced employees leave the organisations or die the organisation's substantive practice, knowledge, history, stories and culture are preserved (Rusanow 2004; Dubin 2005). Mentors gently transfer subtle and experiences to others as role-models thus introducing mentees to their network in an informal setting. Subject matter experts (SMEs) are paired with individuals who have interest and therefore need further training and development in a subject matter area (APQC 2011). The apprentices follow the more experienced employee through their job and the apprentices extract information, write down information about experiences for future references and for reuse (APQC 2011). The same source continues to state that 'this technique provides unique opportunities for novice employees to share their experiences, thought processes, and decision-making strategies with junior members of the staff.'

2.5.2.1.4 Coaching

Coaching is the process of giving the individual trainee specific (task related) guidance and using feedback to develop and consolidate a new skill (Bentley 1995). Coaching helps people use what has been introduced to them; it includes observed practice, in which an expert observes and critiques a novice's performance (Valence 2006).

Coaching is more a 50-50 relationship. The coach still designs how knowledge will be shared, but the novice participates almost equally in the learning activity (Valence 2006). He continues to point out that practicing under the watchful eye of the expert, the novice hands-on, attempting to use the information and ideas that were introduced earlier, and already adopting the style. When knowledge is being shared, this level is likely to be the most exciting to the novice and the most unnerving to the expert. In coaching mode, principles and project managers can adjust the project delivery process to include "a lessons learned" module. In the process team members share information and insights to benefit their projects in the short term and feed into the firm's learning dynamic, over time (Valence 2006). According to Nitchike (2007), the importance of

coaching to the employee and the organisation include the improvement of employee performance which results in organisational performance.

2.5.2.1.5 Knowledge repositories through documentation

Documenting corporate knowledge has been cited as an approach that supports the transfer of knowledge amid changes in workforce demographics and knowledge attrition (DeLong 2004). According to Padilla (2006:1), most organisations are "loose documenters". With most organisations facing loss of knowledge through attrition and noting that knowledgeable new recruits as replacements is a difficult activity (Hanes, Gross and Ayres 2001; DeLong 2002; IBM Consulting Services 2003), organisations must develop means for documenting organisational knowledge (Hanes, Gross and Aryes 2001:1). Thus, documentation serves as a mechanism for transfer of explicit knowledge, where vital work practices for "local knowledge needed to perform a task" are captured (DeLong 2004:8). It is most suitable when an important employee is about to leave, although DeLong (2004:89) stresses that it should be an on-going exercise "not a way of catching knowledge just before it walks out of the door".

The transfer of knowledge through documentation has been viewed through the use of technology as an enabler (UNESCWA 2003). For instance, Lockhead and Stephens (2004), inform that the role of technology in knowledge transfer activities can be viewed to be twofold:

1. documentation, archiving and provision of explicit knowledge;
2. facilitation of a platform for written or graphic content. This enables employees to share knowledge face-to-face.

These two approaches may enable the permanent capture of discussions, databases or indeed visual explanations that can facilitate knowledge transfer.

2.5.2.1.6 Storytelling

Storytelling is another technique that is used for knowledge transfer. According to Prusak (2001), storytelling in organisations involves useful stories about people, work, the organisation, social bonding, signals, the past, and the future and how they relate to organisational operations. With proven benefits, LeBlanc and Hogg (2006) points out that storytelling is a knowledge

management technique which enables organisations to uncover tacit knowledge as part of a natural learning process. Storytellers in an organisation maintain cohesion and provide guidelines for people to follow (Holbeche 2005). Stories are effective in bridging generational gaps, communicate vital information about an organisation's culture, and help employees develop a sense of organisational identity (APQC 2011; Holbeche 2005). Storytelling may be used to capture successes, lessons learned and other knowledge explicitly in a university. Stories are instrumental for knowledge sharing and collaboration (APQC 2011).

2.5.2.1.7 Orientation

Orientation also considered as induction is another technique that is used (University of Reading 2007). It aims at transferring both explicit and tacit knowledge at two levels. These are identified as general and job specific orientation (Carr 2008; CIPD 2008; University of Melbourne 2002; University of Queesland 2006). General orientation is usually conducted to ensure that the new employee becomes knowledgeably equipped in relation to the "corporate goals, policies, procedures and standards" (University of Melbourne 2002). On the other hand, job specific orientation seeks to equip the new employee with actual, operational knowledge and skills required to carry out tasks effectively and efficiently (University of New South Wales 2007).

2.5.2.1.8 Job rotation

Job rotation is an organisational practice that facilitates knowledge transfer (Kastelli 2006). This practice is where an individual is moved through a schedule of assignments designed to acquaint them to the organisation. It involves the deliberate movement of employees from one position to the other. Job rotation guarantees employee exposure to other challenges and work activities.

Levine and Gilbert (1999:4) continue to argue that at senior management levels, job-rotation, frequently referred to as management rotation, is closely linked to succession planning. Through this practice, it is possible for the organisation to develop a pool and provide the manager with knowledge and experience that will enable them to step into an existing vacancy within the organisation. Here the goal is to provide learning experiences, by facilitating the transfer and

utilisation of knowledge as well as changes in thinking and perspective. Job rotation does not necessarily mean having to relocate a person entirely from their role, position or location. The organisation can have project rotation, cross-functional rotation and part-time rotations. Flexibility to organisational requirements is the key.

2.5.2.1.9 Phased retirement

Phased retirement is also one of the techniques for knowledge transfer (Lochhead and Stephens 2004). The practice is mainly used in situations where an organisation has experienced or anticipates loss of organisational knowledge due to retirement of employees (Howard Community College 2007). According to Gale (2007) long established organisations, like universities, are the first to experience knowledge loss threats that lead to most of them adopting phased retirement practices. Citing the ability to retain professors at a relatively low cost, Gale (2007) further comments that phased retirement is practiced by universities and has been found to be an effective tool for knowledge transfer. There are many universities that have phased retirement programmes (Wamundila 2008). The University of Iowa (University of Iowa 2013) has a phased retirement programme where faculty, professional and scientific staff, and merit system staff members employed by the Board of Regents for a period of at least 15 years and who have attained the age of 15, are eligible to negotiate with their departments a schedule for phasing into retirement.

According to the Department of the Premier and Cabinet, Government of Western Australia (2004), organisations undertake phased retirement programmes for the following reasons:

- Prevent skill shortage particularly at middle to senior management levels;
- Retain knowledge;
- Provide a system for effective succession management;
- Assist with creation of a flexible responsive workforce;
- Maximise the return on investment in human capital;
- Increase productivity and efficiency;
- Respond to ageing clients and their needs; and
- Encourage self-funded retirees.

2.6 Knowledge recovery initiatives

Every organisation will inevitably lose some critical knowledge (DeLong 2004). DeLong continues to argue that managers can anticipate and respond to this situation in three ways: programmes for effectively utilising retirees; outsourcing lost capabilities; and regenerating lost knowledge. In a research conducted by Jostad and Nowocin (2012) the following knowledge recovery initiatives were mooted: use of retirees effectively; outsourcing; and regenerating knowledge.

2.6.1 Programmes for effectively utilising retirees

The easiest knowledge recovery tactic to employ when expertise leaves is hiring retirees back as contractors or consultants (DeLong 2004). Retirees have skills needed and know the culture and organisational history. They also have extensive social networks necessary to get their jobs done, even when they are different from those they left. Given the looming shortage of specialised technical and engineering talent in many sectors including the universities, bringing retirees back as contractors is going to be a widely used short-term tactic for knowledge recovery in the years ahead. DeLong (2004) continues to say that one of the most consistent findings in his research was the extent to which organisations in some sectors, like chemicals and federal government, have already become dependent on bringing recent retirees back to work on a part-time basis. Using retirees as contractors, however, is a double-edged sword. It helps retain access to irreplaceable expertise, but it can also create a false sense of security that the organisation still controls some specific knowledge.

2.6.2 Outsourcing lost capabilities

Outsourcing is the act of transferring some of the organisations recurring internal activities and decision rights to outside providers, as set forth in the contract (Sancheti 2007:12). A study conducted by Sancheti (2007), in relation to outsourcing in India, it used a qualitative research design and data was collected through interviews and questionnaires. The study established that outsourcing concept is generally followed by reputed organisations and well educated

individuals in India. Outsourcing industry in India thrives due to offshore projects coming from mainly USA and UK with bulk of its transactions originating from these countries.

In some situations, retaining knowledge adequate to sustain acceptable performance levels is going to prove unrealistic (DeLong 2004). In those cases, looking at new business models may be the only choice executives have. According to DeLong (2004) outsourcing non-core capabilities has been a trend in sections of both the private and public sectors for years. He continues to say that some organisations are going to face another round of outsourcing decisions when it becomes apparent that the loss of substantial expertise in specialised areas is too difficult and costly to replace or sustain.

2.6.3 Regenerating lost knowledge

DeLong (2004) argues that management is going to recognise that it has simply lost a critical capacity that it may not recover by rehiring former employees or through outsourcing. He continues to say that sometimes this knowledge loss will occur when top management makes conscious decisions to downsize or relocate offices and, as a result, employees with unique knowledge leave the organisation. More often, knowledge will be irretrievably lost either through poor documentation and storage practices or through the retirement of highly skilled experts who fail to pass on their know-how. Regenerating essential knowledge that organisations can no longer access is a costly and frustrating effort, but in some cases it must be done (DeLong 2004).

DeLong (2004) contends that ultimately, every organisation's approach to knowledge retention will be unique. But, by necessity, it will include some combination of the elements described in his framework for knowledge retention that he developed for the Los Angeles Bureau of Sanitation (Abkian, et al. 2007). He warns that no matter where an organisation starts, it needs to be aware of the dangers of attacking knowledge retention with solutions that are too narrow. The most mistakes that many organisations do, he says, include implementing technology applications alone, thinking that they will solve problems. Effecting long-term knowledge retention in a serious way requires a much more holistic approach.

2.7 Human resource processes and practices for knowledge retention

It is a paradox that while so many authorities and commentators on knowledge management have come to the conclusion that KM ultimately depends upon people it is precisely the people (or HR) aspect which has been the most neglected in studies in this field (Storey 2001). He continues to argue that HR practitioners and HR analysts have been slow in making their mark in this emerging domain.

An international study by Pickard (1998) which examined the various issues and approaches to knowledge management found that three-quarters of the managers actually responsible for implementing such strategies thought that it was the people issues which were the most important and vital. But according to Pickard (1998), while organisations recognise the importance of capturing and managing and transferring knowledge, they have so far been unable to translate the need into organisational strategies which draw out human dimension.

Likewise, one of the major literature reviews of the people management aspects of knowledge management emphasises the point that, overwhelmingly, knowledge management has been approached with technological bias (Scarbrough 2003:47). The review "reveals an alarming gap in the treatment of personnel management issues". But as Scarbrough (2003:52) also note, "developing an alternative humanised approach to KM depends on more than simply criticising the IT-driven tendency currently dominant in the field".

As noted above, the literature so far is thin in addressing HR issues which are peculiar to knowledge management. Basically, core employees perform the essential tasks within the organisation. The organisational human resource systems are designed to support and manage human capital (Gramn and Schnell 2001). There is growing evidence that human resource management can play an important role in retaining a high-quality workforce (Chew 2004). Studies of progressive HRM practices in training, compensation and reward sharing have revealed that these can lead to reduced turnover and absenteeism, better quality work, and better financial performance (Arthur 1994; Delaney and Huselid 1996; Ichniowsk, Shaw and Prennushi 1997).

Human resource practices comprise five main constructs: staffing, job design, performance appraisal systems, reward and compensation systems, and training development (Doan *et al*. 2011). Staffing refers to the extent to which organisations consider fit to ensure congruence of individual and organisational values and goals that will facilitate knowledge sharing among employees when conducting recruitment and selection procedures (Cabrera and Cabrera 2005). Job design refers to the degree to which employees will be assigned to positions that are consistent with their skills and abilities since it can influence workers' motivation, and opportunities to use knowledge (Kelloway and Barling 2000). Furthermore; team-based work design can increase social interactions among team members which are likely to facilitate knowledge sharing behavior. Performance appraisal systems refer to the extent to which organisations evaluate individual performance when considering knowledge sharing ability as one of the main performance criteria (Doan *et al*. 2011). Reward and compensation systems refer to the degree to which people, who are involved in knowledge transfer activities, will be recognised and rewarded (Doan et al. 2011). Training and development refer to the extent to which employees will be provided with great opportunities for personal growth and career advancement (Doan et al. 2011).

The knowledge retention framework developed by David DeLong for the Los Angeles Bureau of Sanitation (Abkian *et al*. 2007) recommended the following as some of the practices that can be adopted for human retention:

- career development training and other self-development opportunities
- succession planning.

Research shows that introduction of proper human resource activities might play important role in knowledge retention activities. Jinchveladze (2009) argues that knowledge flow cannot exist without a human factor. This notion is strengthened by a number of authors that KM is actually developed from human resource management (Yahya and Goh 2002; Soliman and Spooner 2000; Bhatt 2001). As Scarborough (2003) states KM has important implications when managing human resources, especially knowledge sharing. Many researchers (DeLong 2004; Chew 2004) focus on the role and function of HRM in managing knowledge. The analysis done by DeLong (2004) is more general on how HRM can contribute to identification and application

of knowledge in order to reach the organisation's objectives. For instance, Soliman and Spooner (2000) discuss knowledge gaps and the function of HR department in this process. However, preciseness and practicability of this process is lacking. Soliman and Spooner (2000) argue that HRM should play an important role in monitoring, measuring and intervening in construction, embodiment, dissemination and use of knowledge. Nevertheless, in this process specificity is lacking. A number of other authors link the function of HRM to KM with the purpose of sharing knowledge (Hislop 2002) and how employees should be willing to bring tacit knowledge into explicit knowledge. The analysis of Hislop (2002) however, lacks understanding that tacit knowledge might be embedded in the minds of employees without realising it. Hansen, Nohria and Tierney (1999) recommend focusing on organisation strategy to plan KM activities as vital. Hence, understanding what kind of knowledge can be valuable for organisation and what KM channels are is essential to serve for the strategy. HRM strategies can be aligned accordingly. In other words KM can be driving force and guiding principles for HRM strategies (Jinchveladze 2009). Alignment of these strategies can be realised through effective implementation of HR practices (Jinchveladze 2009).

According to Jinchveladze (2009), HR practices that encourage effective and efficient utilisation of knowledge capacity are crucial in achieving organisation objectives. They can play a vital role in supporting employees to create and share knowledge, such as building helpful atmosphere for knowledge transformation; motivating and boosting the commitment of employees to share knowledge (Jinchveladze 2009). Supporting this are (Lopez-Cabrales, Perez-Luno and Cabrera 2009). These authors argue that HR practices directly influence employee's capability to perform by impacting their knowledge, skills and ability. HR practices deal with how organisations hire and manage people (Boxal and Purcell 2008). Delery and Doty (1996:805) distinguished seven strategic HR practices that are "theoretically and empirically related to overall organisation performance". They are:

- internal career opportunities;
- formal training systems;
- appraisal measures;
- profit sharing;
- employment security;

- voice mechanisms;
- definition.

Delong (2004: 237) says that there are at least five areas that create the organisational infrastructure for knowledge retention. They are usually managed or heavily influenced by the HR function. They include:

- systems for evaluating skill/knowledge base;
- career development/succession planning process;
- building a retention culture;
- phased retirements programmes; and
- reinventing recruiting processes.

Recently more attention has been paid to new HR practices that include the use of work teams, job rotation, quality circles, total quality management (TQM), high levels of training and innovative pay systems (Michie and Sheehan 1999).

2.7.1 Career development programmes

To complement the skills inventory system, extensive career development and succession planning processes are needed to retain employees – or at least slow turnover and build long term workforce capabilities (DeLong 2004). DeLong continues to contend that if a skill management process monitors the current and future state of resources needed, a career development programme helps build the knowledge and competencies professionals and managers need to prepare for future roles. The career development programmes include training, mentoring, succession planning and job rotation.

2.7.1.1 Training and mentoring

As a follow-up of performance appraisal, training can play an important role in bridging the gaps between what an organisation knows and what an organisation must know (Soliman and Spooner 2000). The appraisal outcomes can be combined with other measures of evaluation to determine

the training needs in an organisation. For instance, before new products or processes are introduced a series of training sessions can be held to prepare and orient the employees. By doing this the link will be formed between knowledge retention and organisation strategy. Providing the training on organisation vision and mission has proved to direct knowledge retention activities to the right destination, serving the objectives of an organisation (Yahya and Goh 2002). In universities the question is how can the training be structured to facilitate generation of new knowledge which is so important for knowledge management in an organisation?

Implicit knowledge and experience that employees hold are very important resources of the organisation which may determine long-term success. For an organisation it is crucial that this knowledge is not lost and is utilised in a way that miscommunication and misunderstanding are timely avoided. Mentoring helps transfer tacit dimension of expert's knowledge (Bryant 2005; Swap, Leonard, Shields and Abrams 2001). The cited authors mention that specific aspects of the job, especially technical skills have been transferred through mentoring. Mentors can teach values, norms and organisational routines in informal ways. The authors mention the significance of mentoring since mentors possess the knowledge that has not been recorded in any database and is based on personal experience or tacit knowledge. Mentoring can be considered as an experiential learning, on the job training or learning by doing. These concepts are believed to be determinants of new knowledge creation. Mentoring is a process where knowledge is created through transformation of experience and embedded knowledge into perceptions of the person (Lam 1998; Nonaka 1994). It has been argued that mentoring can be a tool for transferring tacit knowledge amongst employees (Swap et al. 2001). Employees can observe the activities of mentors and through imitation and application of activities to externalise tacit knowledge (Nonaka 1994).

Bryant (2005) also mentions that mentoring is considered as an important source for learning. This process can support teams to be more effective since team members try to achieve common goals. This is achieved by team members helping each other by training and socialising (Jinchveladze 2009). According to Jinchveladze (2009), peer mentoring can turn tacit knowledge into explicit because they combine verbal forms of explanation with visual demonstrations. This

personal contact is very important for new knowledge creation and sharing. Ribiere and Roman (2006) concluded in their research that mentoring took a third place in the personalisation strategy. Hence, frequent application of mentoring practice can stimulate the transfer of knowledge though personal communication. So when employees need certain knowledge and skills, they can apply to not only stored, codified information rather mentors as sources of required knowledge.

Training programmes focused on developing skills beyond existing job requirements might contribute to generalist knowledge development (Kang and Snell 2009). If on the job training is not limited to one position and incorporates experience from other positions as well an employee gets broader vision of the organisation. This type of approach in training system facilitates creation of common ground in the enterprise (Jinchveladze 2009). Training can develop interpersonal skills and teamwork abilities in order to facilitate communication of employees within teams to create and share knowledge together (Lopez-Cabrales, Perez-Luno and Cabrera 2009). Working in teams during the training with employees with different competencies can stimulate sharing of skills and knowledge (Jinchveladze 2009). He continues to say that proper training can directly influence the capability of employees to transform tacit knowledge into explicit and share it within the organisation. For instance, utilising specific techniques during developmental programmes such as observation, simulation and experimentation can strongly strengthen knowledge creation possibilities in the organisation.

2.7.1.2 Succession planning and job rotation

According to (Skinny Ohio n.d.) succession planning is more important than ever. With an aging workforce and the approaching mass retirement of the “baby boomers,” one part of succession planning includes the need to capture and pass on the expertise, judgment, and insight of senior leaders before they retire. The second aspect of succession planning according to (Skinny Ohio n.d.) relates to the identification of employees within the organisation who have the potential to move into leadership positions. The International Public Management Association for Human Resources (IPMA-HR) concurs with Skinny Ohio by saying some of the positive results that stem from succession planning include the ability to develop a strong pool of internal candidates,

knowledge transfer, higher retention, and the ability to fill management positions without a significant gap. Butler and Roch-Tarry (2002:40) argue that succession planning is an "ongoing, dynamic process" that focuses on the transfer of knowledge necessitated by an ageing workforce, unforeseen loss of knowledge due to deaths and turnover, and ensuring identification of "skills and competencies throughout the organisation". They further argue that most organisations fail to exploit the potential of succession planning mainly due to absorption in "day-to-day issues, overly focused on short-term results or unable to adapt to change".

Job rotation gives possibility to the employee to become familiar with the specificity of other positions that can improve the understanding of organisational characteristics and objectives (Jinchveladze 2009). New ideas emerge when people are well aware about the organisation, its products, production processes and the market (Mumford 2000). While rotating on the jobs employees establish trust and social contacts with other units of the organisation (Jinchveladze 2009). Thus, transferring of knowledge takes a broader spectrum. Employees acquire shared understanding values and common vision (Lam 1998). This way bridging firm-specific knowledge with organisation strategy is facilitated.

Organisations use different forms of job rotation, some utilise cross functional teams for certain projects to ensure that knowledge is exchanged, and at the same time providing space for learning from shared experience (Jinchveladze 2009). He continues to argue that jobs can be shifted between different departments. Shifting jobs between the same areas of specialisation can refine the level of expertise between employees since they will share their professional insights and experience with other people in the same specialisation and support mutual learning. It has been proved that informal job rotation supports development of unique practices and processes that can be very hard to be imitated by competitors (Krogh, Ichijo and Nonaka 2000). Besides, it can support creation of overlaps or redundancy of information which is argued to be a prerequisite for knowledge creation (Nonaka 1994).

Lauren and Foss (2003) argue that "job-rotation among different engineering offices, as well as between engineering jobs supervisory jobs at the factory, facilitates the knowledge-sharing needed for horizontal coordination among the different phases of development". In addition the

authors argue that job rotation can support broadening the firm specific knowledge and skills of an employee. It can help employees experience new responsibilities, learn new skills and link them with the previous tasks. Consequently, this type of job rotation might be beneficial for generalist knowledge development and double-loop learning (Jinchveladze 2009). The same author argues that employees rotate to different positions which are divergent from their existing occupation and knowledge domains; they can acquire completely new understanding and question existing ones. Besides, bringing new experience to other knowledge domains will ensure the concept of lack of shared experience. So employees rotating in other areas of specialization acquire new perspectives of existing knowledge domains, but at the same time bring their experience there (Jinchveladze 2009).

2.7.2 Performance appraisal (PA)

For the learning organisation where knowledge creation and diffusion is vital development of employees is decisive. One major purpose of PA is to aid employees in improving organisational performance (Cummings and Schwab 1973). According to Jinchveladze (2009) PA can lead to rewards, training or even transfer for improving certain skills or even sanction. Hence, proper evaluation might be crucial determinant for further decisions in the employment issues. On the other hand, it can also be a follow-up activity of a training programme to measure its effect on the performance of employee (Jinchveladze 2009). PA may also give possibility to clarify the level of responsibility (Shipton 2006). PAs can create incentives to stimulate certain behaviour. For instance, evaluating how employees used knowledge assets in a firm during performance reviews can encourage employees to actively acquire knowledge from codified sources (Hansen, Nohria and Tierney 1999).

PA can stimulate communication between an employee and supervisor and ensure that the target goals are achieved. PA can be a two way process, on the one hand providing internal (employees) and external (customers) feedback (Yahya and Goh 2002); on the other hand, acquiring feedback from the employee being evaluated. This feedback will help to, first, understand what knowledge reservoir the organisation has in order to try to keep it if required

and, second, to know what skills the organisation lacks (Guzzo, Jetter and Katzell 1985) so that they are acquired through knowledge retention activities.

PAs focused on process evaluation and error avoidance can be beneficial for single-loop learning (Jinchveladze 2009). Jinchveladze (2009) argues that concentration on the process of accomplishing results in order to clearly see what actions facilitated and what hindered the achievement of objectives is essential for exploitative learning. PAs based on process evaluation might help provide more information to explain the results an employee achieved, e.g. by "behavioral observation scales" (Kang and Snell 2009:81). This type of evaluation will be based on details and quality performance. This kind of PA might be beneficial for specialist knowledge holders since they are focused on specific knowledge domains and are required to be precise and organised in performance (Kang and Snell 2009). Simple-loop learning or exploitative learning is based on refinement, efficiency and extension of existing competencies and knowledge (March 1991). Evaluating the process, the road that an employee passed to achieve outcomes can stimulate them to refine existing knowledge constantly (Jinchveladze 2009). The same author continues to argue that this can give the employee incentives to carry out existing responsibilities with increased diligence and attention. Hence, the concentration will be placed on existing knowledge domains and on their efficiency. This attitude can encourage employees to focus on the quality of performing certain tasks and try to improve and brush-up the skills needed for this process. Besides, the focus on *error avoidance* during the evaluation might ensure preciseness of performance and more responsibility (Kang and Snell 2009).

Motivation for further development is crucial for employees in learning organisations. Hence, during evaluation, focus should be placed on progress and positive achievements rather than critique of the outcomes (Mumford 2000). Criticism might hinder the motivation of an employee to be creative, generate new know and share it. PAs focusing on already achieved outcomes without stressing the ways, tactics, methods and tools used to achieve those results can support different purposes of performance (Jinchveladze 2009). These purposes can be stimulation of employee flexibility to use their own ways in order to achieve results. This attitude can support employee autonomy and can encourage them to search for divergent ideas and new ways for achieving better results. This type of PA can be beneficial for developing generalist knowledge

since they're possessors of knowledge from diverse knowledge domains and more able to absorb new information, digest and create into something different (March 1991). Hence, PAs based on result evaluation can stimulate double-loop learning, the process when employees question existing norms and practices and search for new possibilities, new ways of thinking to change the status quo, to experiment with new alternatives (March 1991). Thus, not focusing on the process of performance can encourage employees to use other alternatives rather than existing knowledge norms, be free to diverge from existing knowledge domains, and thus generate new ideas.

PA as one of the HR practices can be regarded as a mechanism of linking employee interests, motivations, capacity and expertise with organisation objective (Jinchveladze 2009). PA process can act as an effective information exchange tool which might later be transformed into knowledge by the employees. Besides, it can direct KM activities of employees such as rewarding creative behaviour, sharing of new ideas but at the same time accepting failures for keeping the motivation mood of employees to learn more (Yahya and Goh 2002). Learning is the part of knowledge transformation and sharing process.

Based on the above analysis, it can be argued that performance appraisal which is based on evaluating outcomes of performance, error tolerance and stimulation of teamwork can promote double-loop learning. The reasoning behind is that when employees know that they have a flexibility to use their own ways to achieve results, when their flaws will be tolerated, when their peers will be included in evaluation, they will probably be more flexible to search for new alternatives of achieving results and they will try to collaborate with colleagues or direct team members to share and learn more.

2.7.3 Reward systems

Rewards can follow performance appraisal. Roberton and Hammersley (2000) argue that reward system can be important predictors of knowledge sharing. The reward can take various forms, such as recognition, promotion, autonomy, empowerment, letter of appreciation etc. Independence is valued in knowledge –intensive organisations (Nurmi, 1998). Accordingly,

autonomy helps creative employees to develop new ideas by taking responsibility, benefiting from free time to develop initiatives (Yahya and Goh 2002).

The problem with reward systems might be that they can create dissatisfaction for some people and emphasise rewarded behavior rather than effectiveness (Jinchveladze 2009). Individuals might try to focus and show their own contribution rather than collaborate effectively with other employees (Scarbrough 2003). The similar problem appears with teams. As stated above teamwork is important for knowledge creation, but how to balance rewarding teams and individuals is the question. Gupta and Singhal (1993) offer certain guidelines, when to reward individuals and whole teams. They suggest rewarding whole teams mostly since there is a proof that they outperform those teams where individuals are rewarded within teams. Besides, there is an assumption that team based rewards might contribute to cooperation and belief that shared knowledge will be beneficial for the whole team and overall performance, so that everyone shares knowledge (Bartol and Strivastava 2002).

It is essential that the purpose of reward is clear (Jinchveladze 2009). Following the PA it can become vivid who took efforts to develop new ideas and who performed well. For knowledge intensive organisations like higher institutions of learning, rewards can be attached to skill/knowledge development in order to encourage new knowledge generation beyond current knowledge domain (Jinchveladze 2009). This incentive can contribute to generalist knowledge advancement; whereas, incentives attached to good performance and their effort to progress, can in their current job promote specialist knowledge development (Kang and Snell 2009). Providing incentives for generating new ideas can be beneficial for double-loop learning. The incentives, such as granting autonomy, placing more recognition for suggesting new alternatives for existing norms or practices, or even promoting or shifting to another challenging position can stimulate employees to be more proactive and opt to experiment with new ideas (Jinchveladze 2009). Jinchveladze continues to say that on the other hand, rewarding employees for performing well with fixed bonuses or other fixed incentives, for attempting to improve the norms and practices of their current job can contribute to single-loop learning.

From the above analysis it can be argued that financial rewards might be more applicable for specialist knowledge holders. This is because conducting repetitive work might require tangible incentives so that employees can contribute to improving existing practices of the jobs. In addition, these types of rewards can contribute to retaining the employees with a lot of firm-specific experience or specific training. It is essential for the organisation to keep the resources that were developed during the years and who possess the capacity which is hard to be imitated by competitors.

2.7.4 Building a retention culture

A whole body of influential work emphasised the crucial significance of 'culture' in shaping behaviour patterns in organisation (Storey 2001). Indeed, one of the most central views of the HRM School is that organisational culture is the key to organisational performance (Storey 1992; Deal and Kennedy 1991; Legge 1995). Moreover, the exponents of this approach also can be re-designed so that employees take on new priorities, new values and new conventions.

According to Storey (2001) there is some evidence revealing how organisational culture can create barriers to innovation and thus knowledge creation. He contends that, in particular, an evaluation and reward structure which clearly gives priority to alternative behaviours, such as conformance to procedure or to short-term profitability has been frequently noted. Likewise, the gap between what top managers espouse concerning the importance of innovation and knowledge creation – the necessity to take risks and the tolerance of failures – is adversely compared with what happens in practice and it is the practice which seems to set the tone for the shaping of culture rather than the corporate rhetoric (Storey 2001).

A culture which is conducive is also likely to be one which is open to new ideas, to the creation of knowledge and to the free flow of ideas (Davenport 1997:189). Davenport (1997) continues to state that such cultures tend to be open to the flow of information across organisational boundaries both internal and external. This implies a culture where hierarchical distinctions are few, where cross-functional boundaries are low and where ideas matter more than title, status or position. Sharing knowledge should not be expected as necessarily a 'normal' thing in all

cultures. Sharing and usage have to be motivated through time-honoured techniques performance evaluation, and compensation for example (Davenport 1997).

The quality of the career programmes may send an important signal about the organisation's real commitment to its employees. However, it is functional and business unit managers who create conducive day-to-day working environment ultimately determines the rate of employee retention and have the greatest influence over knowledge-sharing behaviours (DeLong 2004). Thus, culture is critical. He continues to argue that probably the most difficult task facing leaders worried about knowledge loss is how to change their organisation's values, norms, and practices (i.e., culture) to better support the retention of employees and their valuable knowledge. He further continues to say that organisations trying to sustain and improve performance need to create a working environment that minimises attrition of high performing employees, since turnover and knowledge retention are closely connected. They also must strive to create a culture that makes knowledge acquisition, sharing, and reuse part of everyday practice. Even organisations that began paying attention to knowledge issues are still struggling with the culture problem (DeLong 2004). He continues to say that the goal of achieving an ideally effective retention culture remains elusive.

2.8 Information and communication technologies (ICTS) for knowledge retention

ICTs are electronic means of capturing, processing, storing, and communicating information and these ICTs include digital information, computer hardware, software and networks and analogue based information such as radio, television and telephone (Kiplang'at and Ocholla 2005). Holbeche (2005) avers that as knowledge is generated, it is captured and made accessible to others through IT systems. Carisson (2008:54) observes that, "in acquiring knowledge, a crucial means is the use of information and communication technologies." Information technology has made the sharing, capturing and integrating of knowledge more feasible (Albers 2009; Dixon 2000).

IT resources can be an important part of any knowledge retention strategy, but executives must be careful not to view technology as the solution to their knowledge retention problems (DeLong 2004). IT applications are only enablers. They cannot meet knowledge transfer objectives alone.

He further contends that in order to retain organisational knowledge, line executives must make certain that IT applications are part of a comprehensive effort that includes changes practices, processes and behaviours.

New technologies have long been part of workplace everywhere in the world (Amtzen and Ndlela 2008). However, the pace at which new technologies are coming into market, replacing or renewing the old also brings new issues and challenges. ICT has a triad component of hardware, software and persware that contributes to knowledge management in general and knowledge retention in particular (Peterson 2012). The Persware component includes human resources and procedures involved in ICT. Hardware includes the transmission media, computers, printers, telephone, fax, copiers, and scanners. Tacit and explicit knowledge have a symbiotic relationship whereby tacit knowledge contributes to explicit and vice versa (Srikantaiah 2001:11). IT is a powerful facilitator and necessary enabler for effective knowledge management activities such as capturing, sharing, and integrating knowledge (Albers 2009; Jain 2009; Sahasrabudhe 2001:270). Contrary to previous perception that technology was key to success, the corporate world now realise the effectiveness of enterprises lies in the people's knowledge, intellectual capital and expertise (Wiig 2004:37).

In order to maximise the value of knowledge, organisations must have appropriate information system infrastructure that facilitates sharing, transforming and capturing knowledge. According to Ajimal, Helo and Kekale (2010) a robust system of information technology facilitates the communication, collection, and re-use of knowledge in a project-based organisation. The knowledge management system should also facilitate communication and knowledge exchange across different organisational entities that share knowledge and experiences (Du Plessis 2007). Information technology can increase knowledge transfer by extending the individual's reach beyond the formal communication lines (Alavi and Leidner 2001). Knowledge already exists in organisations and is easily extracted by sharing best practices (Ray 2008). To do this requires finding a way to quickly capture, store, and utilise critical processes and best practices to maintain a competitive advantage. A knowledge repository should be one-stop shop for knowledge application (Dalkir 2005). Knowledge repositories are usually intranets or portals that serve to preserve, manage, and leverage organisational memory. Dalkir (2005) says employees

should be able to find out what they need in order to access, understand, and apply the cumulative experience and expertise of the organisation.

Technology helps create repositories to store user's experiences and knowledge (Ray 2008). The repository helps organisations manage what they know and locate the knowledge when required. The repository is the foundation upon which a firm creates its family of information and knowledge products (Dalkir 2005). Looking at what users need and how they search for information will help develop repositories to provide access to organisational expertise (Pemberton 2004). KM programmes can take advantage of emerging technologies and design innovative ways to enable sharing at teachable moments (when an individual is most receptive to learning a new thing), with just enough detail, just in time, and just for the employee (O'Dell and Hubert 2011). They also state that social computing tools are reinvigorating KM by making it easier for employees to participate in knowledge creation and showing them the value of sharing with an online network of peers. Technologies that can be used to capture, share and transfer knowledge in order to facilitate knowledge retention in universities include: internet, intranet, workflow, data warehousing, virtual teams, electronic mail (E-mail), video-conferencing and teleconferencing, electronic workplace for collaborative work, groupware, blogs, wikis, database, and knowledge repository.

2.8.1 Internet

Due to its availability in most parts of the world the internet is now the world's public communication system linking individual people worldwide [Laudon and Laudon 2007). The internet is a huge network of computers in a global scale connected via telecommunication links, for the sake of sharing information. The World Wide Web is the worldwide collection of documents linked together. The internet provides extensive pathways for sharing knowledge because of its simplicity and ubiquitous presence (Saharabudhe 2001:271). Clients use the internet to request information from a particular Web server and the server sends the requested information back to the client over the internet (Laudon and Laudon 2007). This gives the university staff and students leverage to acquire more information from other sites. Organisations

such as universities set up websites to assist peple access knowledge through the internet.2.8.2 Intranet

This intranet technology is a common feature in many organisations where employees access data, information and knowledge from within an organisation while those from outside are restricted (Laudon and Laudon 2007; Saharabudhe 2001). According to Skyrme (1999) the first knowledge management initiative for many organisations is to install or improve the already existing organisational intranet. The intranet is protected from visits by outsiders. Averweg (2008) conducted a study at eThekwini Municipality (Durban, South Africa) on developing an intranet towards knowledge sharing. From a practitioner-based inquiry perspective data was gathered using a survey research design whereby employees were asked to fill in an online questionnaire that was emailed to them. The findings revealed that 87% of the respondents regarded an intranet as an effective way to conduct organisational interaction, 77% were of the view that it is the quickest focal point to disseminate and get orgnaisational communication, 72% said it enhances departmental communication while 65% were of the opinion that it helps the organisation improve its service to customers. These results indicate that the intranet is mainly used for accessing and sharing organisational information. As observed by Debowski (2006) intranets provide the technological platform for recording organisational knowledge. Averweg (2008) argues that intranets are integral to an organisation as it enhances an organization's knowledge sharing activities, supports the distribution, connectivity and publishing of information.

2.8.3 Workflow

Workflow tools allow documents and other forms of information to be routed among individuals and, this mean routing a new document to various members of a working team or sending a draft document to individuals for review and approval (Saharabudhe 2001:272; Laudon and Laudon 2007). Knowledge that does not flow doesn't grow and eventually ages and becomes obsolete and useless and yet by contrast knowledge that grows by being shared, acquired, and exchanged, generates new knowledge (Borghoff *et al*. 1998). Averweg (2008) ranked the findings in ascending order and 63% of the respondents viewed the intranet as necessary for employees to perform daily work functions. This suggests that much as the intranet may be utilised as a

workflow too it was not viewed as such at the eThekwini Municipality because it was ranked 6 and 7 position.

2.8.4 Data warehousing and data mining

Many organisations have data spread across different databases and to get information out of those databases is difficult and as such information technology based tools can enable easy search and extraction from a mass of data the nugget of knowledge that may be crucial to the business objectives of an organisation (Saharabudhe 2001:273). Information technology usually maintains the databases, hardware and software access points with the view to ensure survivability of information (Jafari *et al*. 2009). Data minng is one of the tools that are used to obtain information and knowledge in order to make an informed decision in an organisation (Jain 2009). Tools and techniques such as data mining are used to discover knowledge that is immersed within organisations and can help knowledge seekers to discover desired knowledge from the huge databases of the organisations. Data mining takes explicit knowledge found in datatbases and transforms it into tacit knowledge.

2.8.5 Virtual teams

Web conferencing and collaboration software provide virtual conference tables for participants to view and modify documents and slides, write or draw on an electronic whiteboard, or share their thoughts and comments using chat or voice conferencing (Laudon and Laudon 2007). Virtual communication operates through a variety of technological channels which include email, teleconferencing, videoconferencing, electronic brainstorming, group display screens, discussion threads and net meetings and other forms of electronic (Debowski, 2006:8,73).

Virtual knowledge teams came to existence because of the existence of physical boundaries that have to be overcome. Such challenges may be geographical, temporary or even organisational separation and as such virtual teams rely on information technology to share knowledge and maintain communication. Virtual knowledge teams need to meet frequently in order to maintain group cohesion but team members rely on meetings to share issues.

Technology enhances the way people share knowledge and expertise in the organisation. Knowledge sharing can take place through virtual teams formed to operate for various purposes such as project management, professional networks, and collaborative specialisation between organisations, production, service and management (Debowski 2006). Virtual teams are valuable in facilitating the generation of ideas and new strategies, collecting data and sharing information and identifying creative solutions to problems (Buckley and Carter 2001 in Debowski 2006:9). However, they are less successful in generating solutions to problems or when dealing with technical or interpersonal conflicts. There is likelihood of poor communication and misinterpretation when the transmission channel is electronic.

2.8.6 Electronic mail (E-mail)

Electronic mail (E-mail) is a system that enables users to compose, transmit, receive and manage electronic messages and images across networks from computer to computer (Laudon and Laudon 2007). Through this technological channel an individual can share knowledge with one or more people by routing and or forwading a message using a distribution list (Laudon and Laudon 2007; Saharabudhe 2001). Besides messages an e-mail has capabilities for attaching text documents or multimedia files to messages (laudon and Laudon 2007). An e-mail enables a community of practice to share knowledge via the internet and can be spread across the world.

2.8.7 Video-conferencing and teleconferencing

This is a facility whereby teleconferencing allows the additional capability of viewing participants via video screens. A video-conference allows a community of practice to share knowledge and have visual contact with each other which is how many individuals across the world can participate in sharing knowledge through video-conferencing (Saharabudhe 2001:275). Teleconferencing is a basic technique of conferring simultaneously via telephone or email groupware. Laudon and Laudon (2007) aver that internet telephony enables organisations to use internet technology for telephone voice transmission over the internet or private networks.

Linked to telephony technology is th use of cellphones to share and retain information. Mobile phones enable people to communicate and access internet where conventional telephone or internet service is expensive or unavailable (Laudon and Laudon 2007). Through short message service (SMS) individuals receive and send data and alphanumeric messages that can be forwarded, stored and later retrieved. With the technological advancements there is now the fourth generation (4G) powerful enough to transmit voice, video, graphics and other rich media (Laudon and Laudon 2007). This shows that cellphones can be utilised to hsre and retain information that can be put into action.

8.2.8 Electronic workplace for collaborative work

Information technology tools provide an electronic workplace to enable collaboration and synchronising activities effectively at work (Saharabudhe 2001:275). Setting up discussion groups, bulletin boards, and news groups allows members of a community to share substantive knowledge with each other, reduce face-to-face meetings, save travel time and cost (Laudon and Laudon 2007).

2.8.9 Groupware

Collaborative computing tools or groupware are used to enhance the transfer of tacit knowledge within orgnanisation (Turban *et al*. 2004). Groupware provides individuals, teams, and workgroups at different locations in the organisation the capabilities to write and comment on group projects, sharing ideas and documents, conducting electronic meetings, tracking the status of tasks and projects, scheduling, and sending e-mail (Laudon and Laudon 2007). Groupware supports teams of people working together on a particular project. This software has created the death distance by enabling people from any geographical location to work together via networks. Groupware tools allow two or more individuals to brainstorm electronically. Through groupware many people can work collaboratively across the room or across the world. Organisational knowledge is a result of various interactive learning processes and the use of IT in the company that generates sustainable competitive advantages (Johannessen, Olaisen and Olsen 2001).

The use of IT facilitates the transfer of external explicit knowledge and increases the speed of the availability of information (Johannessen, Olaisen and Olsen 2001). Stafford and Mearns (2009) investigated the usage patterns, user attitudes and perceptions regarding online social networking technologies as a professional application for knowledge sharing within workplace at IBM Global Business Services in SA. Self-administered questionnaires were administered online to a sample of 68 employees and one in-depth structured interview was held with the organisation's knowledge manager. The findings revealed that employees had positive attitudes regarding usage of social networking tools for knowledge sharing. In this study 92% of the respondents said they used e-mail and selected it as one their most preferred collaboration tool. This is consistent with Laudon and Laudon (2007) who argue that through the use of online social networks (OSN) tools such as e-mails, blogs, wikis, forums, virtual communities, chat system, UseNet newsgroups and instant messaging, employees are able to collaborate and share their ideas and knowledge in an informal setting since OSN tools are highly effective in promoting knowledge sharing on a professional level among employees. A tool called Sametime, IBM's Instant Messaging tool, was ranked second highest level of awareness and use at 90%.

2.8.10 Blogs

A weblog shortened to blog is a a type of electronic communications that is widely used personnaly and commercially and even at workplace to capture information, publish stories, news, express opinions, commentaries and create journals and provides links to other sites of interest (Laudon and Laudon 2007; Ramirez 2006). Certain communities of practice may ise blogs as a meeting space by posting questions, minutes, information, comments and sharing ideas. Blogs provide news on particular subjects allowing readers to leave comments interactively and such aspects make them suitable to store knowledge from individuals that can be shared by a community (Ramirez 2007). Blog entries are usually archived for future use and departments can appoint individuals to archive their knowledge base. Blogging supports knowledge sharing and captured knowledge in a blog is easy to retrieve (Ramirez 2007). In some situations organisations can use blogs as their homepage where they may include news about the organisations, events, celebrations, and important notices. Blogs can capture an extensive range of information photographs, audio of video presentations, calendars and schedules, polls, links to

current news. However, blogs can be difficult to monitor and regulate so great care must be exercised to guard against unprofessional and inappropriate issues being shared (Atwood 2009).

Ramirez (2006) carried out a socialtechnical view of knowledge management to review the literature on knowledge sharing and its barriers. After presenting a series of knowledge sharing strategies blogging is then discussed to formalise the knowledge sharing strategies as a way to develop an organisational culture that promotes knowledge sharing. Blogging allows the reader to leave comments, suggestions in an interactive manner. The comments posted on the blogs are preserved and this way knowledge is stored for future use by a community. Blogging presents itself as a transparent too to share knowledge.

2.8.11 Wikis

This is an online platform that allows visitors to add, delete or modify information directly into the knowledge base thus allowing the listings to add viewpoints from different sources (Atwood 2009:50; Laudon and Laudon 2007). An organisation can hold various wikis that may include topic-based, departmental, or troubleshooting forums. Wikis unlike blogs are collaborative websites (Laudon and Laudon 2007) that improve employee engagement in knowledge creation and knowledge sharing.

Formal structured technological communication networks such as videoconferences, teleconferences, e-mail, internet, web-based networks intranets and mobile communications are effective ways and tools to share knowledge (Ramirez 2007). Technology, much as it may be seen to be very important in knowledge management, remains a useful enabler rather than a central tenet at the heart of knowledge management (Fombad, Boon and Bothma 2009). Nold (2009) contents with this view and argues that technology can facilitate information and knowledge sharing but single individuals creates new knowledge. Information technology makes it possible for the connections that enable knowledge sharing (Ramirez 2007) but the mere existence of technology it its use does not turn a knowledge hoarding organisation to a knowledge sharing one (Fombad, Boon and Bothma 2009). In any case the use of appropriate

and user-friendly IT is a fundamental part of most knowledge management systems (Ragsdell 2009).

2.8.12 Database

This is a shared collection of logically related data designed to meet the varied information of an organisation. A narrative database is an oral history or commentary that is created by one person interviewing another, talking about what they know and recording presentations done by organisational leaders. A narrative database can capture performance histories, participant comments where experience and tacit knowledge recide. The databases may comprise audio files, videos, or transcripts of discussions to ensure that th information is conveyed in a speaker's own words. This technology can be very useful in capturing the wisdom of retiring employees (Atwood 2009:49). Such sources will be revisited when need arises. Database technologies make it possible for organisations to swiftly collect, archive and distribute knowledge (Egan 1998:4).

2.9 Summary

This chapter reviewed literature on the subject of knowledge retention in organisations, in general and in institutions of higher learning, in particular. Literature on knowledge in general and knowledge retention specifically was reviewed. The main literature review was based on the objectives of the study. The literature reviewed looked at various aspects of: knowledge acquisition; knowledge transfer and sharing; knowledge recovery initiatives; human resource processes and practices for knowledge retention; and information and communication (ICT) aspects of knowledge retention. The gaps in KR that existed in these aspects as per the studies conducted by various authors were identified. It was realised that the gaps could be sealed if a well-integrated KR model would be developed. The next chapter, chapter 3 outlines how this study was conducted in order to achieve the objectives.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter discussed the literature review which revealed certain factors such as knowledge acquisition, knowledge transfer and knowledge sharing that need to be considered in order to retain knowledge in institutions of higher learning. These factors pertain to determining whose knowledge, the type of knowledge at risk and how to retain it. The purpose of this chapter is to discuss the research methodology adopted in the study. Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. Describing the methods used by a researcher is essential because it enables other researchers to replicate and test methods used in the study (Ngoepe 2012:88). In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them (LIMAT n.d:8). It is considered as an effective aid towards solving social and economic problems (Phophalia 2010:8). The rationale for this study was to assess knowledge retention practices at KeMU by means of mixed method research. Ultimately, the aim was to develop a model for knowledge retention at an institution of higher learning. The research approaches, research design, research method (population and sample design, instrument development and data collection) and statistical analyses to achieve the aim of this study are subsequently discussed. The discussion focuses on guidelines found in the literature and application thereof by the researcher in order to achieve the research objectives.

3.2 Research approaches

Cresswell (2006) asserted the importance of illustrating the research approach as an effective strategy to increase the validity of social research. Research approaches can be classified as either quantitative or qualitative or mixed methods (Myers 2007). According to Creswell (2009:4) quantitative research is a means for testing objective theories by examining the relationship among variables which can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures. It is associated with positivism. Stangor (2011:15) observes that quantitative research is descriptive. It uses more formal measures of beliefs, attitudes, intentions, behavior, including questionnaires and interviews subjected to

statistical analysis. In this study, quantitative data facilitated the measurement of knowledge acquisition, knowledge sharing, and the use of ICTs in knowledge transfer, sharing and retention. ACET Inc. (2013) stated that, quantitative research approach is an extremely efficient method for gathering information, especially for large groups of people. It is also less expensive as surveys can be dropped and picked after survey completion and further data can be collected online. Its disadvantage is that it generally does not include an explanation of 'why.' A second disadvantage is that respondents are limited to a set of response options and they may not feel that any of the options best describes their experience.

Qualitative research, on the other hand, is a means for exploring and understanding the meaning individual, or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures. The data is typically collected in the participant's setting (Creswell 2009:4). Stangor (2011:15) describes qualitative research as descriptive research that is focused on observing and describing events as they occur, with the goal of capturing all of the richness of the everyday behaviour. According to Galt (2009), it includes narratives, phenomenologies, ethnographies, grounded theory and case studies as its strategies of inquiry. Data is collected with the intent of developing themes from the data. It is associated with interprevism. ACET Inc. (2013) offers its advantage, that, contextual information is gathered when data is collected and respondents are free to answer any way they would like to. Unfortunately, this approach is time-consuming, as it can take a long time to collect and analyse data. Creswell (2009:4) states that often the distinction between qualitative and quantitative research is framed in terms of using words (qualitative) rather than numbers (quantitative), or using close-ended questions (quantitative hypotheses) rather than open-ended questions (qualitative interview questions). Elements of both qualitative and quantitative approaches can be incorporated in a study leading us to the third approach known as mixed method research (MMR) approach.

MMR is an empirical research that involves the collection and analysis of both qualitative and quantitative data (Punch 2009:288). It is defined as research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches and methods in a single study or programmes of inquiry (Punch

2009:298). Quantitative and qualitative approaches are mixed within or across the stages of the evaluation / research process (Traynor n.d. 12). The qualitative and quantitative data are analysed separately. Mixing occurs when the findings are interpreted (Harwell n.d. 155). It therefore allows the researcher to compare and relate the results from the different methods applied. Creswell (2006:5) states that its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone. Ngoepe (2012:96) argues that MMR provides strengths that offset the weaknesses of both quantitative and qualitative research.

In order to meet the objectives set, this study employed a mixed research approach that encompasses use of both qualitative and quantitative approaches (Creswell 2003; Johnson and Christensen 2004). The study is a case study and employed cross-sectional survey as a strategy of inquiry. The combination of these approaches was in cognisance of the fact that both qualitative and quantitative researches have their shortcomings. However, if combined, the two approaches could yield more credible results (Johnson and Christensen 2004). The combination of qualitative and quantitative research approaches was considered to be the best for this study in order to make use of multiple methods for data collection, interpretation and understanding of the research findings within a natural setting (Anderson and Arsenault 1998:119-134; Creswell 2003). There are various ways of employing mixed methods in research that broadly includes sequential and concurrent mixed methods.

Creswell (2009:14) discusses the sequential and concurrent mixed methods approaches. In a sequential approach, the researcher seeks to elaborate the findings of one method with another method. This will involve beginning with a qualitative approach and following up with a quantitative approach or vice versa. In a concurrent approach on the other hand, the researcher converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. Both forms of data are collected at the same time and then integrated in the interpretation of the overall results.

Creswell (2009:211) further subdivides the two approaches into what he refers to as strategies namely:

i) sequential explanatory strategy which is characterized by the collection and analysis of quantitative data in a first phase of research followed by the collection and analysis of qualitative data in a second phase that builds on the initial quantitative results.

ii) sequential exploratory strategy which involves a first phase of qualitative data collection and analysis, followed by a second phase of quantitative data collection and analysis that builds on the results of the first qualitative phase.

iii) sequential transformative strategy which has two distinct data collection phases, one following the other as in the first two strategies. It too has an initial phase (quantitative or qualitative) followed by a second phase (either qualitative or quantitative) that builds on the earlier phase. Unlike the first two, it has a theoretical perspective (e.g. gender, race) to guide the study.

iv) concurrent triangulation strategy is a concurrent mixed model design classified on the basis of purpose of the study. In this design, QUAL and QUAN approaches are used to "confirm, cross-validate, or corroborate findings within a single study"

v) concurrent embedded strategy of mixed methods research can be identified by its use of one data collection phase, during which both quantitative and qualitative data are collected simultaneously. Unlike the traditional triangulation model, a concurrent embedded approach has a primary method that guides the project and a secondary method that provides a supporting role in the procedures.

vi) concurrent transformative strategy is an approach in mixed methods that is guided by the researcher's use of a specific theoretical perspective as well as the concurrent collection of both quantitative and qualitative data.

The concurrent triangulation strategy was preferred for this study. According to Creswell (2009:213), in this strategy, the researcher collects both quantitative and qualitative data concurrently and then compares the two databases to determine if there is convergence,

differences, or some combination. This strategy was selected as it allowed the researcher to collect both quantitative and qualitative data at the same time (concurrently) hence saving time. Data collected may also be easily compared. Questions framed were targeted at collecting both quantitative and qualitative responses in the same research phase. According to Traynor (n.d.:13), concurrent triangulation strategy allows use of questionnaires during data collection that includes both open-ended (i.e. qualitative) questions and closed-ended (i.e. quantitative) questions therefore making it an appropriate approach for the intended instrumentation selected. Apart from the questionnaires, interviews were also conducted among the members of management. The researcher also employed observation as a method of data collection. Data was also collected by reviewing the documents.

The quantitative data was used to investigate which ICT tools have been adopted by KeMU as enablers of knowledge retention, transfer and sharing and also to investigate what knowledge transfer practices are in place at KeMU. Stangor (2011:15) observes that quantitative research is descriptive research that uses more formal measures of beliefs, attitudes, intentions, behavior, including questionnaires and interviews that are subjected to statistical analysis. In most cases quantitative research places emphasis on quantification in the collection and analysis of data which can be expressed in numbers, percentages and tables (Babbie 2010:35). Greene, Caraceli and Graham (1989) suggest five purposes of using MMR which are triangulation, complementarily, development, initiation, and expansion. In this research, MMR was used during data collection, analysis, interpretation and discussion. Both qualitative and quantitative data were collected where qualitative data was used to substantiate quantitative data.

3.3 Research procedures

According to Creswell (2009:3) research designs are plans and procedures for research that include the decisions from broad assumptions to detailed methods of data collection and analysis. Since the study aimed at assessing knowledge retention practices at KeMU, the task required a clear research design framework. Babbie, Mouton, Vorster and Prozesky (2002:72) define a research design as a detailed plan about what needs to be observed and analysed, why and how. The ‘what’ part of the research has already been captured in Section 1.4 on the “objectives of the study”? In this section, the most important aspects of the research design to be discussed

according to Babbie, Mouton, Vorster and Prozesky (2002:72) are the 'why' and 'how' elements which cover the case study and the survey.

3.3.1 The case study

A case study is a research design which provides a detailed story of the study case (Hancock 2002; Johnson and Christensen 2004:46; Key 1997; Myers 2007). The use of case study research approach has increased (Bachor 2000; Myers 2007; Rowley 2002). The increase in the usage of this approach has been attributed to the fact that it allows for in-depth investigation of a problem (Flyvbjerg 2003; Hancock 2002). According to Bachor (2000:2) the rationale for understanding case study research has been due to the fact that it is a "convenient and meaningful technique" that provides "face-value credibility…they can be seen to provide evidence or illustrations with which some readers can readily identify". As for Rowley (2002:78), the wide usage of case study research is mainly due to its capacity to "offer insights that might not be achieved with other approaches". Zucker (2001:2) argues that "the goal of the case study method is to describe as accurately as possible the fullest, most complete description of the case".

Becker (2005), Hancock (2002), Rowley (2002) and Soy (2006) note the following as some of the virtues associated with case study research:

- It offers a richness and depth of information;
- It is highly versatile research method and employs all methods of data collection from testing to interviewing;
- Enables an understanding of a complex issue or object;
- Can extend experience or add strength to what is already known through previous research; and
- Places emphasis on the context which can help bridge the gap between abstract research and concrete practice by allowing researchers to compare their firsthand observations with the quantitative results obtained through other methods of research.

Although there are many advantages of using case study research, this method also has its own shortcomings. For instance, Becker (2005), Hancock (2002) and Soy (2006) indicates some of

the sort-comings as biases of research findings mainly due to over exposure of studied cases and that the small numbers of studied cases are difficult to generalise. Besides the weaknesses associated with case study research identified above, Soy (2006:3) contends that many researchers in various disciplines are successfully carrying out case study research based on "carefully planned and crafted studies of real-life situations, issues, and problems". Thus for the purpose of this research, a case study design was used. The selection of this design was mainly due to the need to have a detailed investigation of various knowledge retention practices at KeMU.

3.3.2 Survey

Surveys are mostly used to capture the thoughts of a large population and collect descriptive information (Stangor 2011:16,107). It is the best method to the social researcher who is collecting original data (Babbie 2010:244). Kemoni and Ngulube (2007:125) and Babbie (2007:110) argue that survey research is the best study design as it uses more than one research method, thus taking advantage of their various strengths. Stangor (2011:107) observes that surveys are the widely used methods of collecting descriptive information about a group of people within a short period of time. In this study, large amounts of data were collected from KeMU through questionnaires. The researcher found it suitable to employ the survey method in this study since surveys are chiefly used in studies that have individual people as the units of analysis (Babbie 2010:254). The main aim of a survey is to produce a snapshot of the opinions, attitudes and behaviours of a group of people at a given time (Stangor 2011:107). The researcher considered using the survey method because of the population, sample size and the short time available for completing the study. Through use of questionnaires the researcher chose the survey research design for the purposes of describing the current state of affairs, describing academic staffs' and the mangers' thoughts and feelings about issues on knowledge retention that were studied.

3.4 Population and sampling techniques

Nachmias and Nachmias (1996:179) define population as the entire set of relevant unit of analysis or data. Population also refers to an entire group of individuals, events, or objects having

a common observable characteristic. KeMU has a staff population of five hundred fifty (550) teaching and non-teaching staff. The target population was identified using a non-probability sampling called purposive sampling. This style is most stressed as the rationale for undertaking case study research (Creswell 2003:185; TESOL 2007). The researcher identified potential respondents who were in possession of characteristics suitable for the ability to provide required information (Johnson and Christensen 2004:215). In this case, the target population was senior management staff, lecturers and human resource personnel who are two hundred and eighty six (286). Senior management has knowledge on which staff members have the knowledge that needs to be captured and the knowledge that is needed for the operations of the university. The lecturers have knowledge on the academic running of the university. The human resource department has information on staff recruitment and retention. Accessible population is a more narrowly defined and manageable population from which a sample is drawn for measurement and a sample population is a carefully selected subject of the accessible population so as to be representative of the whole population with the relevant characteristics (Mugenda and Mugenda 2003:9). In this study, the accessible population comprised of the academic members of staff in all the five faculties of KeMU, the top management and human resource personnel. The purpose for including top management was to find out whether there are knowledge retention strategies at KeMU and what procedures are in place to retain those who have obtained higher degree of qualification. The academics were included because they transfer knowledge through teaching, writing publications and supervision of term papers and research projects. The human resource personnel are involved in recruiting and also they conduct the exit interviews.

The target population was too large to be studied within the time frame in which this study was scheduled to be completed, hence the need to select a representative group (sample). The sample frame was a database of employees which were obtained from the computer centre at KeMU. The database indicates the position of every employee of KeMU. From the sample frame the researcher selected two groups. The first sample comprised participants who were given questionnaires while the second sample constituted the participants who were interviewed. The researcher drew the two samples from the database in order to comply with the need for a well-executed study (Marshall and Rossman 1995).

In order to arrive at the number of participants who received the questionnaires, a probability sampling method called stratified random sampling was used. Stratified random sampling "is a technique in which a population is divided into mutually exclusive groups (called strata) and then a simple random sample or a systematic sample is selected from each group (each stratum)" (Johnson and Christensen 2004:207). The strata comprised the academic members of all the five faculties of KeMU, top management and human resource personnel totaling to two hundred and eighty six (286). One questionnaire was used for all the strata. Once the population was identified, the actual sample of participants in the survey totaling to 106 was scientifically determined using the mathematical equation (see Table 3.1) for determining sample size for larger population. In this regard, a Raosoft sample size calculator, available on website http://www.raosoft.com/samplesize.html was used to calculate the level of confidentiality and the margin error.

Table 3.1 Equation for sampling (Raosoft 2012)

$$X=Z(^{c}/_{100})^{2}r(100-r)$$

$$N={}^{N\,x}/_{((N-1)E^{2}+x)}$$

$$E=\mathrm{Sqrt}[{}^{(N-n)x}/_{n(N-1)}]$$

Where N is the population size, r is the fraction of responses that one is interested in, Z (c/100) is the critical value for the confidence level c and E is the margin of error.

According to Ngulube (2005:135) a common rule of thumb is a 95% confidence level so that the results are accurate to within ±3%. A sampling error of 3% and a 95 confidence level means that the researcher can be 95 % confident that the population would resemble the sample, ±3% sampling error (Ngulube 2005:135). In this study a margin error of 5% was accepted and a confidence level of 90% was needed as suggested by the software utilised.

Following the above argument, a proportional sample size of 37% (106) was taken from the target population. The sample in each stratum was taken in proportion to the size of the stratum (see Table 3.2 for the sampling proportion). According to Singleton and Straits (2010:183) the advantage with proportional stratified sampling is that it makes representatives of a particular segment of population possible. After determining the strata, respondents were selected

randomly from each stratum, and the sub samples were combined to form the total sample. Therefore the sample constituted of 27 staff members from the faculty of Education and Social Sciences, 19 from the faculty of Computing and Informatics, 25 from the faculty of Science and Technology, 18 from the faculty of Business and Economics, 11 from the faculty of Medicine and Health Sciences and 6 from the Department of Human Resource.

Table 3.2 Population and sample for the study

No	**Stratum**	**Elements in population**	**Proportional sampling**
1	Education & Social Sciences	73 × (37%)	27
2	Computing and Informatics	52 × (37%)	19
3	Science and Technology	68 × (37%)	25
4	Business and Economics	48 × (37%)	18
5	Medicine and Health Sciences	30 × (37%)	11
6	Human Resource Department	15 × (37%)	6
	TOTAL		**106**

The lists on table 3.3 and 3.4 comprised of individuals with diverse roles that are deemed adequate and representative of most university operations. Interviewing these respondents was crucial as they brought a different dimension with regard to the data collected. For instance, some of the data required could only be collected from individuals involved in management. As such, it was necessary to purposively select these individuals.

Table 3.3 Interview participants (Teaching staff)

No.	Title of Interviewee and Unit
1	Dean, School of Economics
2	Dean, School of Medicine and Health Science
3	Dean, Faculty of Computing and Informatics
4	Dean, Faculty of Education and Social Sciences
5	Dean, Faculty of Science and Technology

Table 3.4 Interview participants (Non-Teaching staff)

No.	Title of Interviewee and Unit
1	Librarian, University Library
2	Director, Computer Centre
3	Director, Research and Development
4	Deputy Registrar, Academic
5	Deputy Registrar, Administration
6	Human Resource Manager

3.5 Data collection tools

In this study, the researcher employed the triangulation method because it provides for substantiation of constructs and ensures validity of the research results (Eishenhardt 1989:538). Kelly (2006) defines triangulation as collecting material in using as many different ways and from as many diverse sources as possible thus assisting researchers to understand better a phenomenon by approaching it from several different angles. Neuman (2006:149-150) identifies the following four types of triangulation: triangulation of measures is when researchers take multiple measures of the same phenomenon in order to see all aspects of it; triangulation of observers is making use of multiple observers in a study thus adding alternative perspectives to reduce limitations; triangulation of theory occurs when the researcher uses multiple theoretical

perspectives in planning the research or interpreting data; and triangulation of method means mixing qualitative and quantitative styles of research and data. This study used the triangulation of measures and methods, in order to obtain reliable data and valid results. The strength of the triangulation method adopted in this study of KeMU lies in the fact that the questionnaires and interviews are constructing measuring instruments and as such they tend to complement each other's weakness (Babbie et al. 2006:275). Babbie et al. (2006:275) argue that the use of multiple methods where the researcher combines different tools and investigation in the same study overcomes the deficiencies that follow one research design method.

To gain a better understanding of the knowledge retention strategies, the researcher made use of interviews, questionnaires, observations and study of institutional documents. The study triangulated the methods and the data were analysed quantitatively and qualitatively. The researcher made use of both qualitative and quantitative methods since they complement each other. Qualitative data was obtained through observations and interviews with managers and heads of departments, in order to determine the extent to which they did, or did not agree with each other. This enabled the researcher to develop more complete and well substantiated conclusions about the knowledge retention practices at KeMU.

3.5.1 Questionnaire

A questionnaire was designed for the academic members of all the five faculties of KeMU, and human resource personnel whose general aim was to gather information on known practices for knowledge retention, acquisition and transfer within KeMU. The questionnaire was designed so that it was mainly based on the objectives of the study. Both closed and open-ended questions were provided. With reference to closed questions, multiple choice questions were provided in which respondents selected the appropriate choice. On the other hand, spaces for open-ended questions were provided for questions where explanations and details were required. The questionnaire was emailed to those subjects with email addresses and mailed to those without email addresses.

The questionnaire had six sections namely: background information, knowledge retention, knowledge acquisition, knowledge transfer and sharing, and the role of ICTs in knowledge retention, transfer and sharing. Of the 106 questionnaires distributed, only 88 of them were returned giving a response rate of 83%. The questionnaire had a total of (36) items on (19) pages and thus relatively longer in terms of the time the respondents took to answer the questions. According to Burchell and March (1992) and the Forest Products Society (2003) high non-response rates are usually experienced when using lengthy questionnaires. The length of the questionnaire was as a result of the researcher having acknowledged the fact that her audience was of different professional and academic backgrounds and as such the researcher held the view that all the questions were necessary if the research objectives were to be adequately answered.

3.5.2 Review of documents

In this study reviewed documents served as sources of information to identify knowledge retention practices by KeMU. The establishment of tools, methods and techniques for knowledge transfer, knowledge sharing, knowledge recovery initiatives and human resource policies and procedures. From these, it was possible to establish patterns of interest (Tellis 1997) in KeMU, which has been the main focus of the study. The researcher accessed reports, magazines, organisational circulars and managers' notices posted on the notice boards. All these instruments are used by KeMU to communicate with the organisation's employees.

3.5.3 Interviews

Researchers also utilise interviews as another tool for data collection (Anderson and Arsenault 1998:190). To ensure consistency when collecting data, an interview guide document was designed. The document had two parts: the first part contained the salutation of the interviewee and introduction of the research topic and objectives. The second part had six sections. These addressed knowledge acquisition, knowledge sharing, knowledge transfer, knowledge recovery initiatives, human resource processes and practices, and finally information and communication technologies (ICTs) used for knowledge retention (See Appendix 111). As proposed by Bless, Higson-Smith and Kagee (2006), the scheduled structured interviews were based on an

established set of questions with fixed wording and sequence of presentation. The researcher ensured that the discussion bordered within the purpose of the interview as recommended by Anderson and Arsenault (1998:170).

The use of structured open-ended interviews ensured consistency in the data collected. This method combined the strengths of both structured and unstructured interviews (Peterson 2012). According to Peterson (2012), the structured part of the interview enabled the researcher to seek information on specific issues giving in-depth information about particular cases of interest. The unstructured approach created a relaxed atmosphere. Some of the interviews were face- to- face for respondents. Others, however, were telephonic interviews for those only accessible via telephones. Both the face-to-face and telephonic interviews were recorded on audiotape (preferred because of ability to disguise identity). Recording enabled the researcher, to evaluate and categorise the responses to establish the reliability of the data. There was note-taking on comments on respondents' responses especially the non-verbal communication, such as gesturing that could not be recorded on the audiotape. This ensured no information was omitted and facilitated data analysis since information was categorised as the interview progressed (Mugenda and Mugenda 2003:87). Most of the participants were interviewed in their offices at KeMU, except for the human resource manager. This participant was interviewed in the boardroom because this was his preference. The minimum duration of the interview sessions was forty minutes with the longest session taking one hour.

3.5.4 Observation

Observation research entails watching the observations and recording those observations in an objective manner (Stangor 2011:129). The researcher requested to sit in the exit interviews to make observations on the kind of questions asked. Qualitative researchers observe human behaviour as it happens and this needs patience, because observations are carried out in unstructured manner (Ngulube 2009). The researcher observed how the juniors interacted with their seniors, both formally and informally, in the offices and corridors. The data was gathered for a period of three months. During this time, the researcher observed how employees conducted themselves, in front of their seniors and juniors. The researcher recorded all the

observations and then used the data to compile the findings. These will be discussed in detail in Chapter 4. While collecting data for the three months at KeMU, the researcher observed for two days how employees utilised the library computers to share knowledge, by sending emails to workmates and colleagues, heads of departments, lecturers and students.

In line with Ngulube's (2009) assertion that patience is required by qualitative researchers when conducting research, the researcher observed seniors and juniors socialising informally, sharing knowledge and work experiences during tea and lunch breaks. The researcher managed to observe lecturers and non-teaching staff of KeMU acquiring knowledge in the university's library.

The researcher also observed how seminars, workshops, training and classroom activities were conducted, as part of tacit and explicit knowledge exchange, sharing and conversion. The researcher requested permission to attend sessions of a seminar and workshop which took place during the month of February and March 2014 respectively. During these times, the researcher gathered data on how participants acquired knowledge during these sessions. The researcher observed that during the classroom activities people were able to acquire and share knowledge.

3.6 Data analysis

Both qualitative and quantitative data may be analysed and interpreted concurrently. According to Creswell and Clark (2007), the concurrent approach involves conducting initial data analyses for each of the qualitative and quantitative databases. Secondly, it merges the two datasets so that, in the case of an embedded design, the supportive dataset can reinforce or refute the results of the primary set. In this study, both qualitative and quantitative data was analysed separately, then quantitative data was merged to the qualitative data set in order to provide support to the results of the qualitative data.

In this research, the main tools of collecting data were questionnaires, interviews, observations and institutional reports about KeMU. After the collection of the completed questionnaires data were checked for completeness, comprehensibility, internal consistency, relevance and reliability (Ngulube 2009:93).This step is referred to as cleaning the data (Litwin 1995:53). The data

cleaning exercise was done to remove numerous problems that arose during the analysis. The data gathered through the questionnaires were analysed using the Statistical Package for Social Science (SPSS) software version 20. The results of some of this analysis were exported into Microsoft Word and Microsoft Excel for visual presentation and reporting of the results. This will be discussed more in chapter 4.

The data that were collected during the interview sessions were analysed manually by content analysis. The notes that were taken by the researcher from the respondents during the interview sessions were used. Some of the open-ended questions were similarly analysed.

3.6.1 Questionnaire data analysis

Pre-coding of the questionnaire was done while data was being collected. Pre-coding means placing the code for each of the categories on the questionnaire (Mugenda and Mugenda 2003: 87). After completing data collection, emerging responses that were not catered for in the initial coding were factored in. The coding provided a platform for identifying similar patterns from the answers given in the questionnaire. Following the coding, the collected questionnaires were first checked for errors in responses as well as identifying unanswered questions, before being entered into the SPSS software. The open-ended questions involved qualitative data analysis at some level as the open-ended questions provided various responses upon which themes were developed. The identified themes formed groups where the various responses were categorised (Taylor-Powell and Renner 2003). Thus, each theme was then assigned a numerical code (Bryne 2001), which was then entered into the SPSS software. Thus, each code presented a theme- a tag assigned to related views by a group of respondents on a given question. Data analysis was carried out after data entry for both closed and open ended questions was complete.

3.6.2 Interview data analysis

In collecting the interviews data, the researcher took notes and recorded the interview sessions. This was done to ensure complete capture of discussions. Transcriptions of recorded interview sessions on a recorder were done but, only for sessions which were identified to be crucial for the

study. This part transcription complemented the hand written notes created during the interview sessions.

Content analysis (Hancock 2002) was then applied. This was when the researcher read through all the transcripts in order to identify themes. Hancock (2002) explains that the process of content analysis involves continually revisiting the data and reviewing the categorisation of data until the researcher is sure that the themes and categories used to summarise and describe the findings are a truthful and accurate reflection of the data.

3.7 Research evaluation

In this research a number of challenges were faced. Among them was the response rate for the survey. According to Ngulube (2005), response rate is a concern for most surveys. However the ability to report on it will reflect the quality of the survey. Thus, taking this standpoint, both unit and item non-response were faced. Item non-response was faced such that in some cases, some questionnaires were only answered half way while in other questionnaires some questions were not attempted. For item non-response for questions that were not attempted at all, the researcher considered such questions as unanswered and labeled them “non-response”. On the other hand, unit response was more observed than item non-response. Out of the 106 questionnaires distributed, the researcher was able to collect 88 questionnaires representing 83% of the total distributed questionnaires.

A number of reasons could be attributed to not achieving a hundred per cent (100%) response rate.:

- Firstly, the questionnaires were distributed at the time the university had opened for the first semester of the 2014 academic year. As such, most respondents expressed willingness to fill the questionnaire but had other responsibilities such as participation in registration and preparation of academic activities. Although the researcher had requested that the respondents return the questionnaire by 3 March 2014, this target was not achieved. As a result, extensions were made. Numerous visits were made to respondents as reminders. Despite the efforts made, some respondents kept on promising to return the questionnaires but to no avail.

- Secondly, just after the university opened in January 2014, the university staff members went on a go-slow due to poor conditions of service. Thus, it was difficult to find respondents in their offices.

Despite the above challenges, the combination of the data collection method was a good approach in view of the research problem investigated and the combination of different types of employees in KeMU.

3.8 Summary

This chapter has described the methodology that was used in conducting the research. The chapter provided the basis upon which the research data was collected and analysed. The next chapter presents the research results arising from the questionnaire, interview processes, observation and review of documents.

CHAPTER FOUR
DATA ANALYSIS AND PRESENTATION

4.1 Introduction

The previous chapter addressed the methodology used in data collection for the study. This study employed a mixed research approach that encompasses the use of both qualitative and quantitative approaches (Creswell 2003; Johnson and Christensen 2004) for data collection. The qualitative methods included document reviews, interviews and observations while the quantitative method involved the use of questionnaires.

In this chapter, data that was collected using questionnaires, interviews, observations and review of documents is presented and analysed. The general purpose of this study was to assess knowledge retention practices at KeMU, with a view to entrench the culture of sharing and transferring knowledge. The ultimate aim was to develop a model for knowledge retention at an institution of higher learning. The gathered data was presented according to the objectives of the study as stated below:

- To investigate knowledge acquisition, transfer and sharing practices at KeMU;
- To investigate whether knowledge retention policies have been developed and implemented at KeMU;
- To explore knowledge recovery initiatives at KeMU;
- To investigate human resource processes and practices for knowledge retention at KeMU;
- To investigate ICT tools adopted as enablers of knowledge retention, creation, transfer and sharing at KeMU; and
- To develop a model for knowledge retention at an institution of higher learning

A mixed data analysis approach referred by Cresswell (2009:218) as data transformation was adopted to analyse data for this study. This form of triangulation was adopted as it allowed the researcher to concurrently compare and combine data collected from different instruments used. In the following sections, the results of the findings are presented.

4.2 Characteristics of the respondents

The researcher was interested in knowing the respondents job designation, the department and the duration they had worked for the university. This information was useful for the purposes of follow-ups during interviews with the heads of departments to clarify certain issues.

4.2.1 Departments

In this section the respondents were asked to indicate their departments. In total six departments were investigated as indicated in Table4.1.

Table 4.1 Departments and roles of respondents

	Department						
Job designation	**Education and social sciences**	**Computing and informatics**	**Science and technology**	**Business and economics**	**Medicine and health sciences**	**Human resources**	**Total**
Lecturer	23	16	22	15	8	0	84
% within Job designation	27%	19%	26%	18%	10%	0%	100%
% within Department	100%	100%	100%	100%	100%	0%	96%
Human resource officer	0	0	0	0	0	4	4
% within Job designation	0%	0%	0%	0%	0%	100%	100%
% within Department	0%	0%	0%	0%	0%	100%	5%

As reflected in Table 4.1, 84 (96%) of the respondents were lecturers from various departments. A total of 23 (27%) were from the department of education and social sciences, 16 (19%) from

computing and informatics, 22 (26%) from science and technology, 15 (18%) from business and economics and 8 (9.5%) from medicine and health sciences. Besides the academic staff, 4 (5%) of the respondents were from human resource department. Interviews were administered to 11 heads of departments as shown on Table 3.3 and Table 3.4.

4.3 Knowledge acquisition, transfer and sharing practices

This section aimed at establishing KeMU processes and practices for knowledge acquisition, transfer and sharing.

4.3.1 Knowledge acquisition

This section aimed at establishing KeMU practices for knowledge acquisition. Organisational knowledge acquisition refers to the possession of relevant operational knowledge through activities with a view to foster efficiency and effectiveness in the performance of organisational functions (Wamundila 2008:127) in (Choo 2001; DeLong 2004; Liou 1990; Man 2006). Based on the various knowledge acquisition activities performed in most learning institutions, respondents were asked to indicate the kind of knowledge acquisition activities which existed at the university. Furthermore, the respondents were asked the academic functions in which they had been involved in before joining KeMU, whether they had training at the time they joined KeMU and their views on proposed professional training that should be made available to teaching staff. Questions on the use of other knowledge acquisition methods such as brainstorming, subject matter experts, expert systems/knowledge bases as well as after action reviews were asked.

4.3.1.1 Priority of acquisition of knowledge and information

The study sought to establish how organisational knowledge flows in the university. A question on whether knowledge acquisition was a priority in the institution was asked. Responses from the questionnaires showed that acquisition of knowledge and information was a priority at the university. The majority of the respondents, 78 (89%) indicated that acquisition of knowledge

and information was a priority at the university while a few 10 (11 %) objected. The summary on priority of knowledge and information acquisition is indicated in Table 4.2:

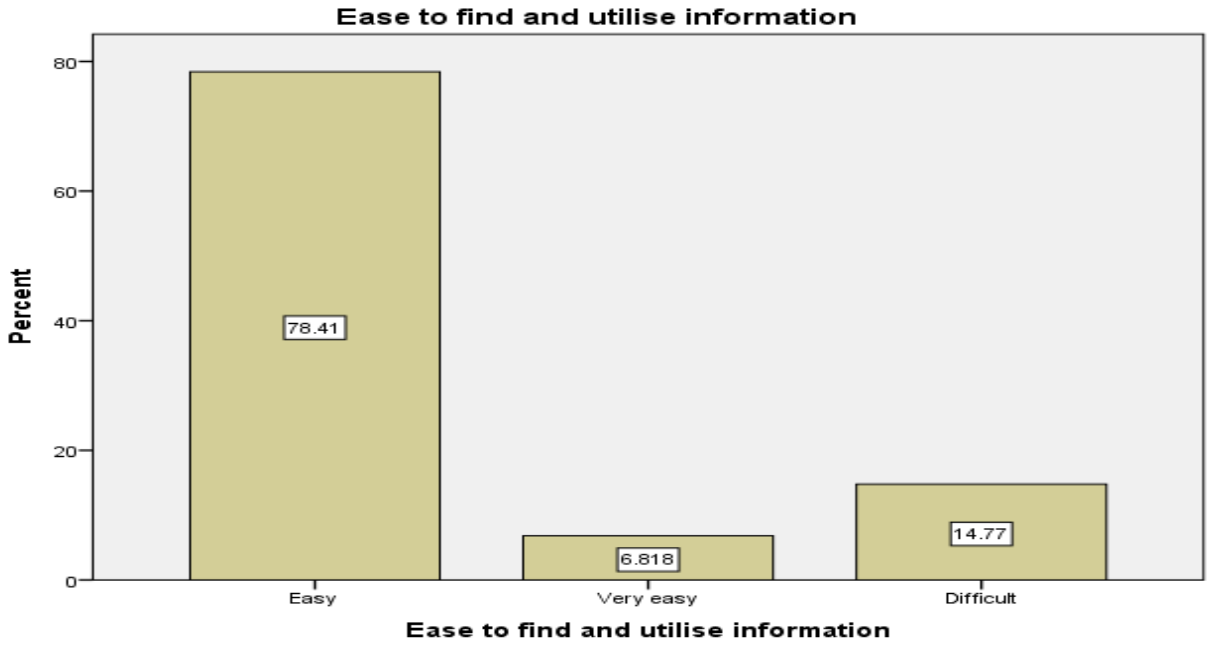
Table 4.2 Priority of knowledge acquisition

	Frequency	**Percent (%)**
Yes	78	89
No	10	11
Total	88	100

4.3.1.2 The ease of finding and utilising information in the university

The ease with which information is found and utilised in an organisation reflects on how it is easy to acquire knowledge and share it among employees (Peterson 2012:174). Knowledge sharing is very essential in an organisation in the event that a knowledgeable employee departs the organisation through retirement, death or resignation. Respondents were asked how ease it was to access and utilise information in their institution. The findings are represented in Figure 4.1:

Figure 4.1 Ease of finding and utilizing information at KeMU



From the results as shown in figure 4.1, it is generally easy (78%) to find information, very easy (7%) and very difficult (13%). The easy and difficult options would yield 85% and 15% respectively.

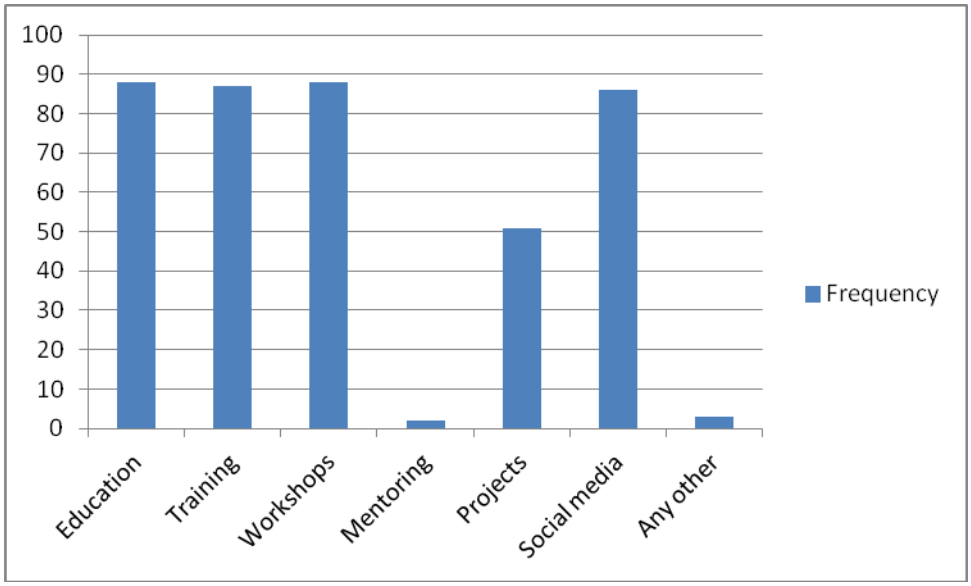
The respondents who chose the 'difficult' option were further asked to explain why it was so. The respondents from the academic departments mentioned; failure by the university to subscribe to databases on important courses, slow internet connectivity, lack of transparency and co-operation. The respondents from human resource department cited slow internet connectivity and file misplacement making access and utilisation of information difficult.

4.3.1.3 Knowledge acquisition activities at the university

This section aimed at establishing the kind of knowledge acquisition activities that existed at KeMU. According to Figure 4.3, all the respondents 88 (100%) indicated that education was being used to acquire knowledge. In this case, 87 (98%) of the respondents indicated that training was being used to acquire knowledge while 1 (1%) said that training wasn't being used. On workshops, 88 (100%) indicated that this technique was being used to acquire knowledge.

Regarding mentoring, only 2 (2%) of the respondents indicated that it was being used, while 86 (98%) revealed that this technique was not being practiced. On the other hand, 51 (58%) respondents indicated that projects were being used, while 37 (42%) indicated that the technique was not being practiced. When it came to social media, 86 (98%) indicated it was being utilised well, and 2 (2%) said that it was not being fully utilised. On whether there was any other technique being used apart from the ones provided by the researcher, 3 (3%) indicated that conferences were vital avenues of acquiring knowledge at the university. Figure 4.2 gives the summary of these findings:

Figure 4.2 Kinds of knowledge acquisition activities at KeMU



Knowledge acquisition activities

4.3.1.4 Experience in teaching, research, curriculum development, academic public life, and consultancy at the time of joining KeMU

In this study, 60 (68%) indicated that they had experience in teaching before they joined KeMU, while 28 (31.8%) cited that they did not have. A further 10 (11 %) said they did not have any experience in research before joining KeMU, whereas 78 (89%) indicated that they had experience.

Regarding curriculum development, 1 (1%) of the respondents indicated that he had experience in curriculum development before joining KeMU, while 87 (99%) cited that they did not.
1 (1%) indicated that they had experience in academic public life before they joined KeMU, and 87 (99%) mentioned that that they did not have.

It was however noted that 27 (31%) had experience in consultancy before they joined KeMU and 61 (69%) said they did not.

4.3.1.5 Professional training in teaching, research, curriculum development and academic public life

Having determined their participation in various academic activities before joining KeMU, the respondents were further asked to indicate the academic functions in which they had specialised professional training at the time they joined KeMU. These excluded bachelors, masters and PHD qualifications that they had acquired.

From the findings, 9 (10%) revealed that they had specialised professional training in teaching at the time they joined KeMU and 79 (90%) said they did not; whereas 60 (68%) pointed out that they had specialised professional training in research at the time they joined KeMU and 28 (32%) said they did not.

Regarding specialised professional training, 3 (3%) specified that they had this skill at the time they joined KeMU, while 85 (97%) said that they did not. A paltry 2 (2%) indicated that they had specialised professional training in academic public life at the time they joined KeMU, while 86 (98%) said they did not.

In the same study, 17 (19%) indicated that they had specialised professional training in academic public life at the time they joined KeMU and 71 (81%) said they did not have.

4.3.1.6 Necessity for specialised professional training before commencement of duties

Having determined their professional training before joining KeMU, the respondents were further asked to indicate the academic functions in which they would have needed specialised professional training before commencing their duties at KeMU.

A total of 55 (63%) said that they would have required specialised professional training before commencing their duties at KeMU, while 33 (38%) said that they did not require it. Another 4 (5%) indicated that they too required specialised professional training before commencing their duties at KeMU and 84 (96%) said that they did not.

Majority of the respondents, 85 (97%) pointed out that they required specialised professional training before commencing their duties at KeMU, whilst 3 (3%) said that they did not require any. Furthermore, 84 (96%) indicated that they required specialised professional training before commencing their duties at KeMU whereas 4 (5%) said they did not. It was also established that 54 (61%) needed specialised professional training before commencing duties at KeMU, while 34 (37%) said that they did not.

4.3.1.7 Necessity for specialised training in specialised courses

Having determined their necessity for specialised professional training before commencing their duties at KeMU, respondents were also asked to state whether it was necessary or unnecessary for academics to undergo training in some specialised courses in order to enhance their performance.

On undergoing specialised training in induction/orientation to functions, policies and procedures at the university, in general, and the school/department in particular, all 88 respondents (100%) indicated that it was necessary to undergo such training. In regards to specialised training in teaching methodology, 87 (99%) pointed out that it was necessary to undergo such training while 1 (1%) said that such training was unnecessary. The findings also indicated that 61 (69%) saw it necessary to undergo such a training, while 27 (31%) revealed that such training was not needed.

Furthermore, 74 (84%) indicated that it was necessary to undergo such training while, 14 (16%) said that such training was not required.

On undergoing specialised training in school/departmental administration and management, 85 (97%) revealed that it was necessary to undergo such training while 3 (3%) said it was not. Concerning undergoing specialised training in general and specialised computer programmes, all the 88 (100%) respondents indicated that undergoing such training was necessary.

4.3.1.8 Necessity for other specialised training

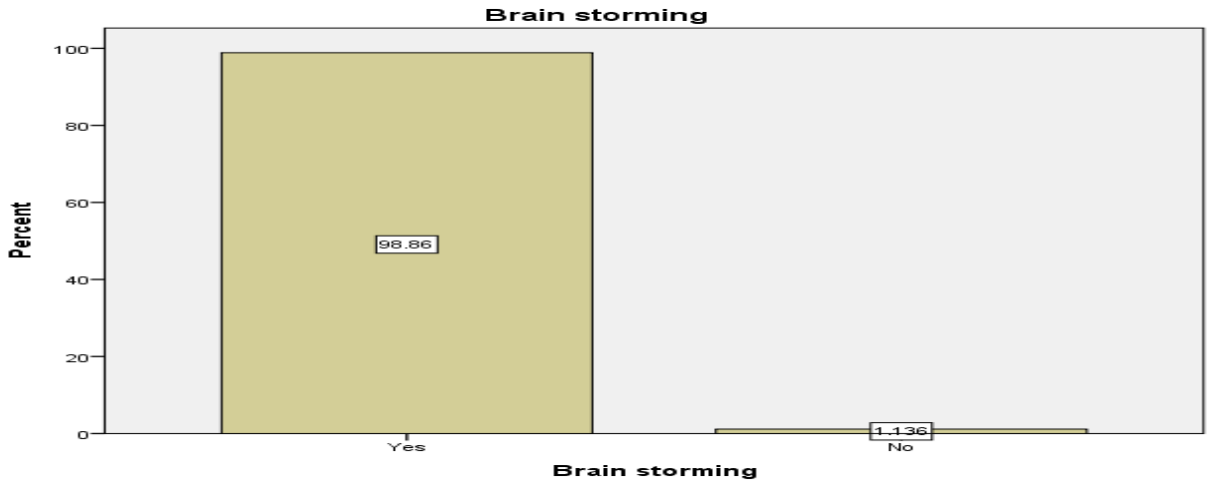
In addition to having specialised training in the above presented aspects, respondents indicated that short training courses in the following areas were necessary:

- Data management especially on how to manage research data;
- How to use social media in teaching;
- Information search technologies;
- Knowledge management especially on how to retain the institutional knowledge; and
- Research skills and statistical data analysis using the latest statistical software.

4.3.1.9 Knowledge acquisition through brainstorming

This section on the questionnaire addressed the challenges in the work environment and the respondents were given different techniques that are used to address challenges at the university. One of the techniques given was brainstorming. According to Figure 4.3, 87 (99%) agreed that brainstorming was in use in their schools/departments, while 1 (%) did not use brainstorming.

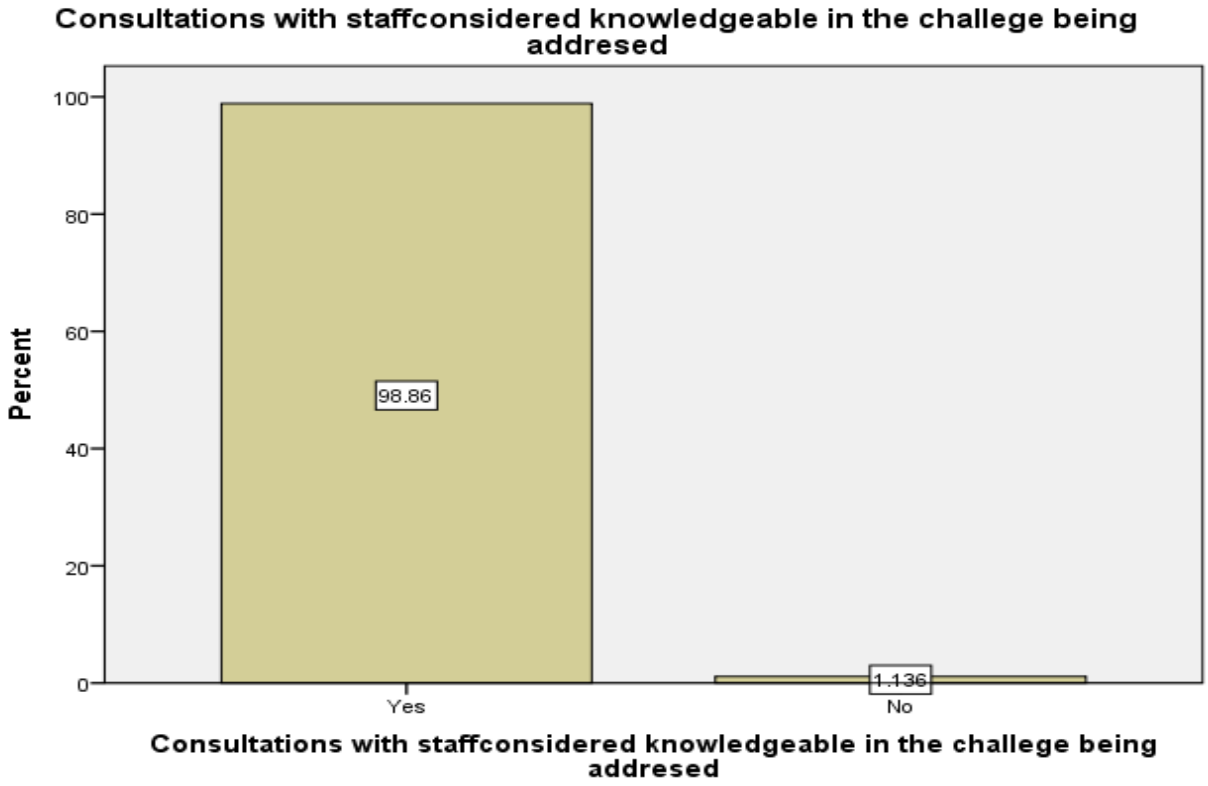
Figure 4.3 Use of brainstorming



4.3.1.10 Consultations with subject matter experts

On handling operational challenges by way of consultations with staff considered knowledgeable in the challenge being addressed (subject matter experts), 87 (98%) agreed to be consulting, while 1 (1%) declined the use of consultations in their schools/departments. This is captured in Figure 4.4.

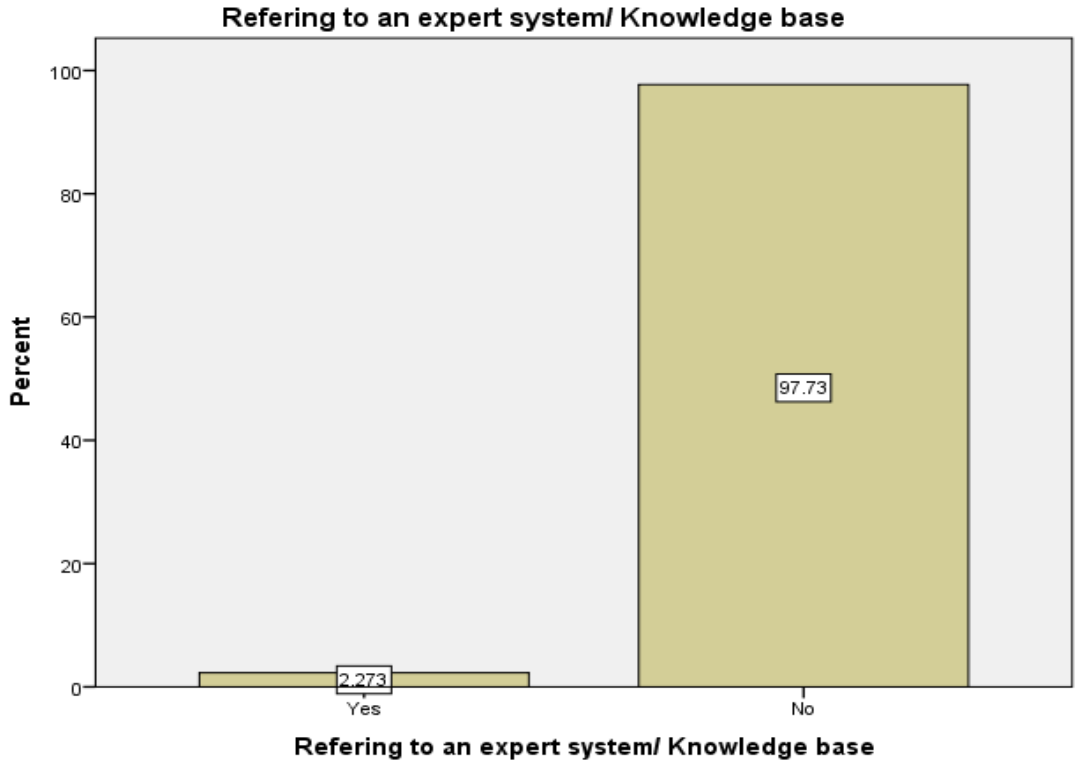
Figure 4.4 Consultations with subject matter experts



4.3.1.11 The use of expert systems/knowledge base

Regarding handling operational challenges by referring to an expert system or knowledge base, Figure 4.5 indicates that 2 (2%) agreed that expert system or knowledge base were being used in their schools/departments, while 86 (98%) declined the use of the expert system or knowledge base.

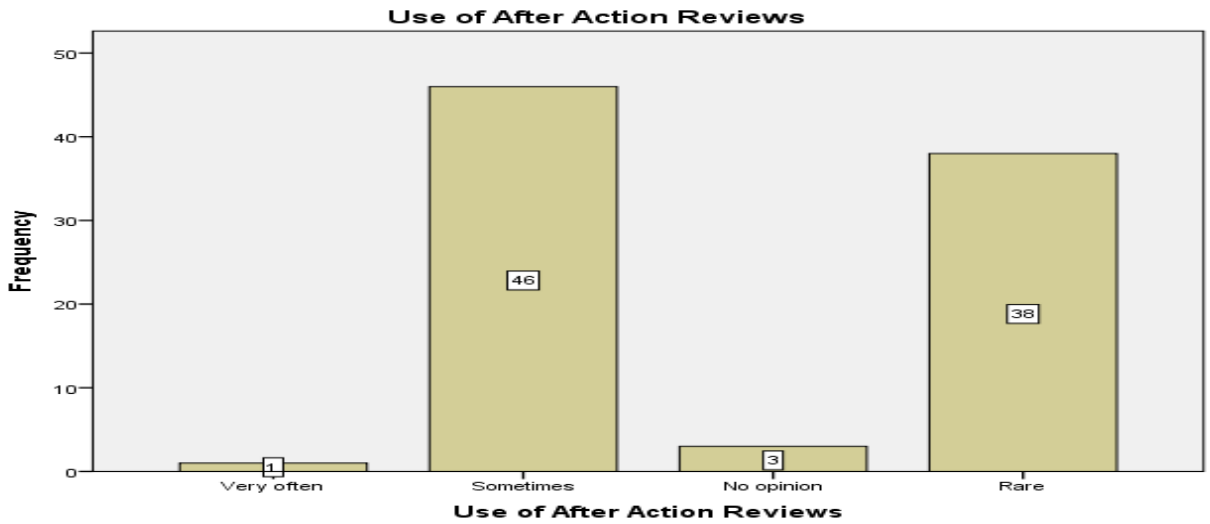
Figure 4.5 Referring to an expert system/knowledge Base



4.3.1.12 The use of after action reviews

Enquiries from the researcher as to whether the institution held sessions to reflect on the effectiveness of efforts to handle operational challenges were determined as follows; 1 (1%) indicated that such sessions were held very often, 46 (52%) said that such sessions were held sometimes, 3 (3%) alleged they had no opinion over such sessions and 38 (43 %) indicated that such sessions were rarely held. This is reflected in Figure 4.6:

Figure 4.6 The use of after action reviews



4.3.2 Knowledge transfer and sharing practices

This section aimed at establishing KeMU practices for knowledge transfer and sharing. Organisational knowledge transfer and sharing involves a number of practices with the aim of enabling an organisation to sustain its relevant operational knowledge (Wamundila 2008:134). With this understanding respondents were asked various questions that addressed the practices that are being used by KeMU to transfer and share knowledge.

From the documents reviewed, there was evidence that the institution shared knowledge through reports, magazines, institutional circulars and notices from heads of units posted on the notice board. There existed reports published relating to the various research activities being conducted at the institution. The institutional circulars shared knowledge on various practices, for example the researcher came across a circular dealing with the code of regulations. On the notice board, the researcher found memoranda communicating various upcoming activities and events at the university.

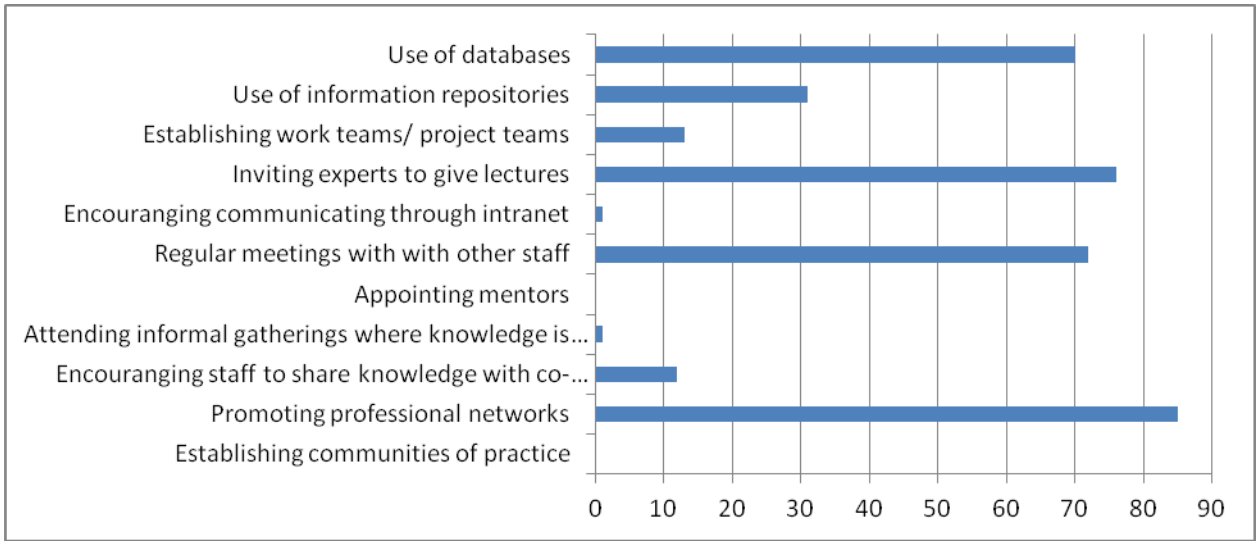
4.3.2.1 Roles of managers in promoting knowledge transfer and sharing

In this section, respondents were asked to indicate the role the managers of the university played in promoting knowledge transfer and sharing.

All the respondents 88 (100%) indicated that communities of practice had not been established to transfer and share knowledge. A total of 85 (97%) indicated that the managers had established professional networks to transfer and share knowledge, while 3 (3%) said the managers were not promoting professional networks. On encouraging staff to share knowledge, 12 (14%) pointed out that the managers encouraged staff to share knowledge with co-workers, while 76 (86%) revealed that the managers did not. Regarding attending informal gathering where knowledge is shared, 1 (1 %) indicated that the managers attended informal gatherings where knowledge is shared and 87 (99%) said that they did not.

All the respondents 88 (100%) revealed that the managers did not appoint mentors as a way of knowledge transfer and sharing. However, 72 (82%) indicated that the managers held regular meetings with staff, while 16 (18%) said that they did not. In the case of encouraging communicating through the intranet, 1 (1%) indicated that managers encouraged such communication, while 87 (99%) said that they did not. Further, 76 (86%) revealed that the managers invited experts to give lectures, while 12 (14%) said that they did not. On the other hand, 13 (15%) indicated that work teams/project teams had been established, while 75 (85%) said that they had not. Ultimately, 31 (35) indicated that there was usage of information repositories, while 57 (65%) said there was no usage of such. On use of databases, 70 (80%) indicated that there was usage of databases, while 18 (21%) revealed that there was no usage of such. Figure 4.7 gives the summary of these findings:

Figure 4.7 Roles of managers in promoting knowledge transfer and sharing



As per the literature reviewed in Chapter 2, observation research entails making observations of behaviours and recording those findings in an objective manner (Stangor 2011:129). As part of the observation, the researcher requested to sit in the exit interviews to observe the kind of questions asked. Eventually, the researcher noted that when HR conducted exit interviews they asked questions as to why an employee was leaving but, no questions related to knowledge retention. Also as part of the observation, the researcher observed how juniors interacted with the seniors, both formally and informally, in the offices and corridors. From this, the researcher established that the juniors were free to interact with the seniors and they could ask questions on various tasks. During tea breaks, the juniors and seniors from the same unit would share knowledge on various tasks. This indicated to the researcher that knowledge is shared between juniors and seniors.

4.3.2.2 Collaboration with other universities

This section on the questionnaire was to find out if the university worked collaboratively with other universities. Such joint operations result in the generation and acquisition of new knowledge that could be retained as organisational knowledge for future use and development of an organisation (Mohamed et al. 2006). Inter-organisational interaction promotes knowledge

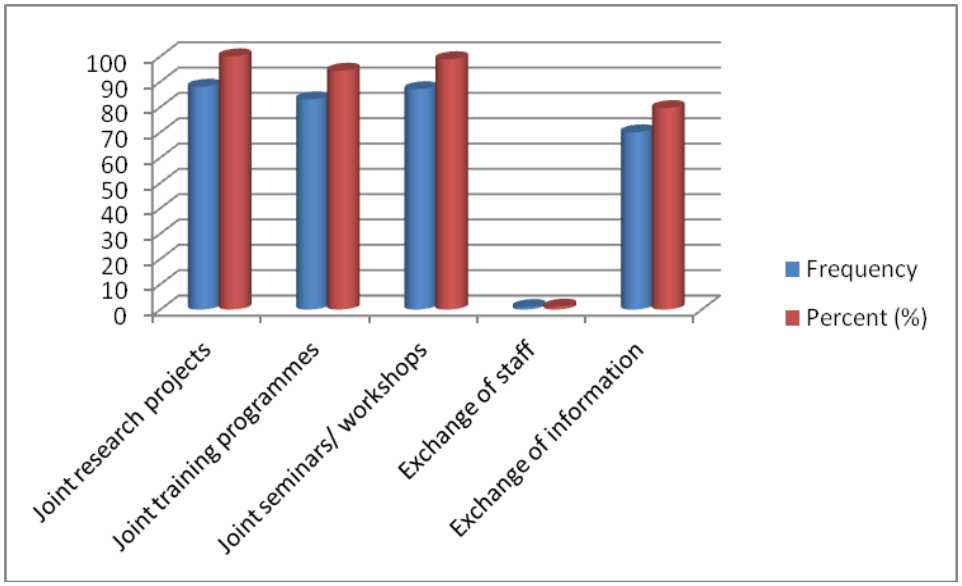
creation and sharing through joint projects, training programmes, seminars and exchange of staff (Peterson 2012:182). Such programmes promote learning and production of new knowledge. Respondents were asked to select all the options they thought were being applied at the institution.

Collaboration with other universities in knowledge retention practices is represented as follows:

- Joint research projects, 88 (100%) of the respondents indicated that the practice was being used for knowledge retention.
- Joint training programmes, 83 (94%) of the respondents indicated that the practice was being used, while 5 (6%) said that such practice was not being used.
- Joint seminars/workshops, 87(99%) of the respondents indicated that the practice was being employed.
- Exchange of staff, 1 (1%) of the respondents indicated that the practice was being used for knowledge retention, while majority 87(99%) indicated that the practice was not being utilised.
- Information exchange, 70 (80%) indicated that the practice was being used, while 18 (21%) indicated not.

Figure 4.8 gives a summary of these findings:

Figure 4.8 Collaboration of the institution with other universities



4.3.2.3 Rewards/incentives to eencourage knowledge sharing

Having established the ways in which managers promoted knowledge transfer and sharing, respondents were also asked to indicate what rewards there were to encourage knowledge sharing at the university. Regarding promotion at work, all the respondents 88 (100%) indicated that there existed no such reward. On pay rise all the 88 (100%) indicated that there was no pay rise as a reward/incentive to encourage knowledge sharing. Every respondent 88 (100%) indicated that there were no monetary rewards to encourage knowledge sharing. None of the respondents indicated any other rewards/incentives exist to encourage knowledge sharing. Table 4.3 gives a summary of these findings:

Table 4.3 Rewards/incentives to encourage knowledge sharing

Rewards/Incentives	Frequency	
	No	**Yes**
Promotion at work	88	0
Pay rise	88	0
Monetary rewards	88	0
Any other	88	0

4.3.2.4 Reasons for sharing knowledge

The purpose for this section on the questionnaire was to find out what motivations the respondents considered as reasons for sharing knowledge. The following were the findings:

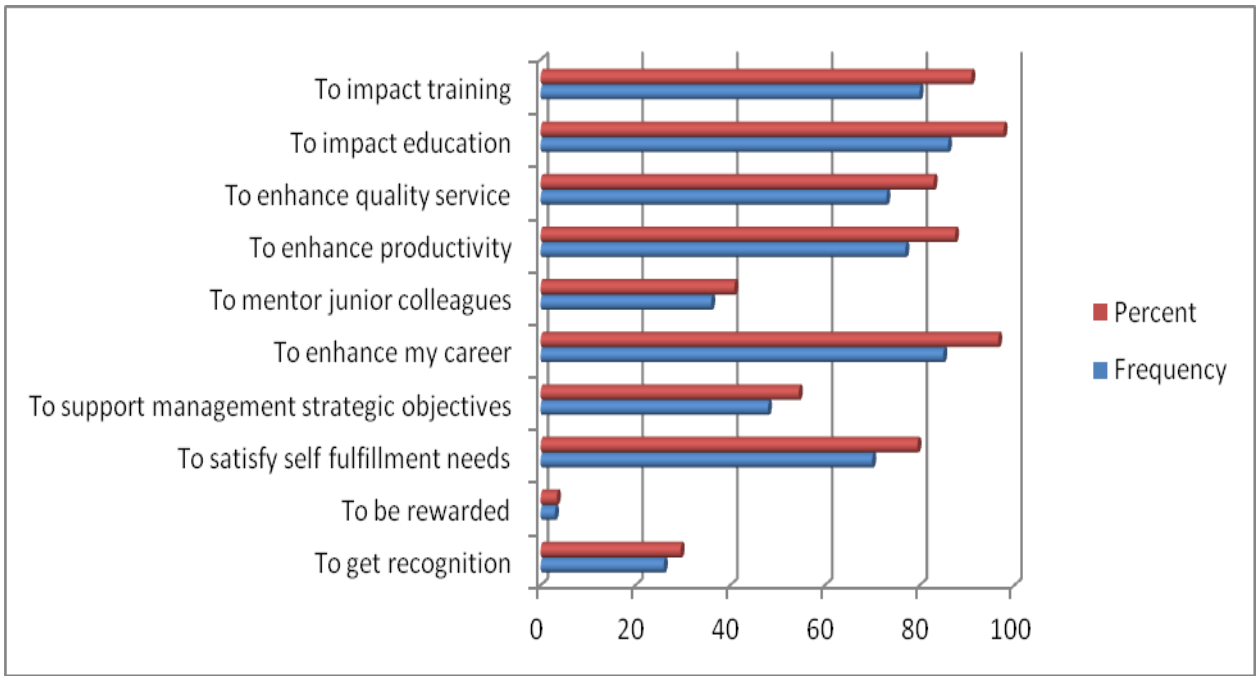
The study established that 26 (30%) of the respondents indicated that they shared knowledge in order to get recognition, while 62 (71%) declined that this was one of the motivation. Only 3 (3%) of the respondents indicated that the reason for sharing knowledge was to get rewarded, while majority of the respondents 85 (97%) said they did not expect to be rewarded. Furthermore, 70 (780%) of the respondents pointed out that satisfaction of self-fulfillment needs was one of the reason they shared knowledge, while 18 (21%) revealed that this was not a reason for sharing knowledge.

In regards to sharing knowledge, 48 (55%) designated that supporting management strategic objectives was one of the reason they shared knowledge, while 40 (46%) pointed to the fact that this was not a reason for such. However, 85 (97%) showed that enhancing one's career was an incentive for sharing knowledge, while a 3 (3%) declined to this factor.

On mentoring junior colleagues, 36 (41%) of the respondents indicated that this was one of the inspiration for sharing knowledge, while 52 (59%) said that this was not.

Majority of the respondents, 77 (88%) singled out enhancing productivity as the reason for knowledge sharing, while 11 (13%) revealed that this was not the case. Figure 4.9 gives the summary of these findings:

Figure 4.9 Reasons for knowledge sharing



4.3.2.5 Knowledge sharing tools

Having established the reasons for knowledge sharing, the respondents were further asked to indicate what knowledge sharing tools were being used at the institution. Question 20 and 21 on the questionnaire required the respondents to identify tools that were commonly used to share knowledge among the employees for the purposes of knowledge sharing and further identify the ones they thought were effective in knowledge sharing. The results for the questions were as indicated in Table 4.4:

Table 4.4 Knowledge Sharing Tools

	Commonly used for sharing knowledge		Most effective in sharing knowledge	
	Frequency	Percent (%)	Frequency	Percent (%)
Staff meetings	82	93	81	92
News letter	84	96	19	22
Circulars/ Memoranda	82	93	79	90
Informal interactions	16	18	4	5
Briefing sessions	4	5	4	5
Use of the notice boards	84	96	73	83
Email	87	99	86	98
Websites/ online resources	86	98	70	80
Intranets	1	1	3	3
Web portals	53	60	55	63
Blogs	1	1	4	5
Mail groups	7	8	6	7
Community of practice	2	2	0	0
Mobile Phones	15	17	3	3
Workshops	87	99	88	100
Seminars	88	100	86	98
Conferences	88	100	85	97
Team building exercises	68	77	46	52
Written reports	83	94	84	96
Face to face interactions	57	65	12	14
Social events	39	44	1	1
Training	82	93	76	87
Performance appraisal	4	5	5	6
Mentoring programmes	0	0	2	2

From the findings in Table 4.4, it emerged that the most used tools for sharing knowledge were as follows: seminars 88 (100%), conferences 88 (100%), workshops 87 (99%), email 87 (99%), websites/online 86 (98%), newsletter 84 (96%), written reports 84 (96%), staff meetings 82 (93%) and training 82 (93%). The same tools apart from the newsletter, 19 (22 %) were also the most effective in sharing knowledge. Mentoring programmes, performance appraisal, community of practice, blogs, intranets and briefing sessions were not commonly used as tools for knowledge sharing and they were also not the most effective tools for knowledge sharing.

The interview part aimed at finding out how the university ensured knowledge flow among the staff. This was complimented by another question on how the heads of the units ensured that operational knowledge was retained for purposes of continuity amidst mobility and staff related attrition challenges. Particular attention was paid to knowledge transfer and sharing practices, such as succession planning, communities of practice, mentoring and apprenticeship, coaching, knowledge repositories through documentation, storytelling, orientation, job rotation and phased retirement.

From the observations made there were also memoranda and circulars on the university public notice boards, in the elevators, in the office corridors and at staff canteens. This indicated to the researcher that knowledge is shared even in public places.

The researcher observed for two days how employees utilised the library computers to share knowledge. She found out that employees would use computers to send emails to colleagues, heads of department, lecturers and students. This indicates that the employees utilised the ICTs to share knowledge. Some employees utilised the Internet to communicate through social media commonly used being Facebook, Twitter and Skype.

The researcher also observed how seminars, workshops, training and classroom activities were conducted, as part of tacit and explicit knowledge exchange, sharing and conversion. The researcher requested permission to attend sessions of a seminar and workshop, which occurred during the month of February and March 2014 respectively. During these times, the researcher gathered data on how participants acquired knowledge during these sessions. The researcher observed that during the classroom activities people were able to acquire and share knowledge.

4.3.2.6 Succession planning

On succession planning, the interviewees were of the view that there was no formal system for replacing vacant positions. However, one of the interviewees revealed that there were criteria for promoting staff within the university, although the practice was not being viewed as succession planning. Another interviewee stated that positions that fell vacant were filled by the staff

already working at the university and who had the right qualifications for that specific vacancy. Another interviewee mentioned that vacant positions were filled up by staff under acting capacity provided such a staff possessed minimum qualifications and exhibited sufficient experience to perform in the position during the acting capacity.

As to whether the promotion of an employee was a result of need to replace a vacancy, one interviewee stated that the three major determinants of promotion were the availability of a vacancy, meeting the stated promotion criterion for the desired position and on the performance appraisal score.

4.3.2.7 Communities of practice

On the use of communities of practice, the interviewees mentioned that they held meetings where they shared different ideas but, never realised that this is a form of a community of practice. Other forms of communities of practice mentioned by respondents included seminars, retreats, workshops and conferences. Although this was the case, they observed that these were not purposely done to bring staff together for purposes of knowledge transfer and sharing.

4.3.2.8 Mentorship and apprenticeship

In regards to mentorship and apprenticeship, some of the interviewees mentioned that some staff members were being mentored to consult amongst themselves and around specific tasks that they were expected to perform. However, the majority of the interviewees were of the view that once staffs were employed, the assumption was that they knew what was expected of them. For this reason, the heads of various units only ensured that the new employees were provided with office space and other equipment needed for the job.

4.3.2.9 Coaching

As pertains coaching, some of the interviewees, mentioned that they ensured that new staffs were given guidance by more experienced staff on how to perform specific tasks. One of the interviewees (the Dean of School of Business and Economics) revealed that during a conference

a senior lecturer in the department teamed up with a junior lecturer to prepare for a paper presentation. This was a way of seniors coaching juniors on the techniques required for a good presentation.

4.3.2.10 Knowledge repositories through documentation

The researcher wanted to establish whether the various units in the university had knowledge repositories. From observations, it was revealed that the university had a library and a record office, which form part of knowledge repositories of the university. Among all eleven (11) interviewees, only the university librarian mentioned that the library had a knowledge repository where they stored all the publications published both by staff and the students. This was a way of storing the knowledge created through publications for future reference by both staff and students. These publications were stored both in hard copies and in soft copies in databases.

4.3.2.11 Storytelling

In regards to this method, some of the interviewees mentioned that they held numerous informal discussions. However, such discussions concerning various tasks were not being viewed as formal knowledge transfer mechanisms.

4.3.2.12 Orientation

Orientation was another method that the researcher examined. The human resource manager mentioned that it was a requirement in her unit that new employees in the university were oriented. The university librarian also concurred with what the human resource manager had mentioned by indicating that it was a requirement that every new employee in the university library be oriented. However, majority of the interviewees, especially those from the academic units, said that the orientation provided to their employees mainly depended on what each individual employee was required to know about the university. In short, no formal orientation programmes exist specifically related to activities the employee would be performing.

4.3.2.13 Job rotation

This was another aspect where interviewees provided varying responses. For example, interviewees who headed academic units stated that it was not possible to rotate academic staff, due to specialisations in different academic fields. However, the same academic interviewees acknowledged the fact that support staffs were usually rotated to various departments, even without being consulted.

The university librarian mentioned that middle and junior staff levels in the library were rotated to various sections in the library, in order to familiarise them with all the operations of the library. However, in the case of the human resource, this section revealed that rotation was only done to replace or fill a vacancy, resulting from an attrition challenge and not necessarily to ensure knowledge transfer and sharing. However, in the process she had realised that such rotations had helped the human resources staff to acquire knowledge on various operations within the unit.

4.3.2.14 Phased retirement

All the interviewees stated they have faced staff attrition challenges, either as a result of retirement, death or resignation. For the interviewees who faced retirements of academic staff members, they all mentioned that retired staff were usually called back to offer consultancy services, or were usually employed on contract basis if they so wished.

However, the above application was not the same with support staff, as retention on contract terms of employment or consultancy heavily depended on uniqueness of skills and knowledge possessed by such an employee. The affected unit should justify the need to have the individual retained on contract.

4.4 Knowledge retention policy

Organisational knowledge comprises of both tacit and explicit knowledge that is found in an organisation (Peterson 2012:173). Before establishing whether there existed policies on knowledge retention at KeMU, the researcher sought to establish how organisational knowledge

flows in the institution. From the interview findings both tacit and explicit knowledge were considered important in the institution. The librarian indicated that one needs tacit knowledge when discussing issues with a customer rather than making references to recorded knowledge. On the other hand, the human resource manager indicated that explicit knowledge was important since they used recorded information for their reference.

Furthermore the interviewees were asked to point out some of the risks they considered to be associated with loss of tacit knowledge in the institution. One of the heads of department said that when such people leave the institution they go with the knowledge, and the risks of losing tacit knowledge are so high particularly if it was not captured and archived. The librarian indicated that the risk would be the deterioration of the quality of work because it is impossible to replace 15 years of experience. The computer school director said, "the risks are very high… if you don't document. If the person leaves, also the knowledge is gone." He further said losing tacit knowledge moves the whole institution five or more years back. This simultaneously affects the vision and strategic planning of the institution.

As stated in Chapter 2, knowledge retention is the capture of critical knowledge and expertise that is at risk of loss when employees leave an organisation (Kim 2005; Dan 2008). Knowledge retention is capturing and preserving knowledge in the institution for reuse in the future. The knowledge retention component of the interview aimed at establishing how knowledge was captured and retained at KeMU. Particular attention was paid to how the university determined the knowledge to be retained and how this knowledge was retained.

In order to determine which knowledge was to be retained, interviewees were asked to state the criteria that were being used to determine the knowledge to be retained. Majority of the interviewees, sited evaluation of the knowledge needed for the operation of the institution as one criteria used. One interviewee said that there were no set criteria of determining which knowledge should be retained. Others indicated that they shared knowledge especially on carrying out tasks that needed consultations with more knowledgeable staff as a way of knowledge retention.

From the documents reviewed, the researcher established that although the institution had developed various policies, there was no policy developed on knowledge retention. However, from the quality manual developed in 2013, the university had documented procedures for various tasks requirements in accordance with ISO 9001:2008.

4.4.1 Institutional policy on reusing knowledge

Knowledge management is about people, processes and policies (Peterson 2012:207). The researcher here wanted to establish if there were policies at KeMU with regards to reusing knowledge, preservation of knowledge and assigning responsibilities to retain knowledge. From the questionnaire findings 1 (1%) respondent indicated that there was a policy on recalling retirees, while 1 (1%) respondent pointed out that there was a policy on extracting from university archives. Only 1 (1%) indicated that the university had a policy on data mining. Where the respondents were asked whether there was any other policy that existed on reusing the institutional knowledge, only 2 (2%) respondents indicated that they were not aware of the existence of any policy on reusing the institutional knowledge. Table 4.5 summaries these findings:

Table 4.5 Institutional policy on reusing knowledge

		Frequency	Percent (%)
Extracting from university archives	Yes	1	1
Recalling retirees	Yes	1	1
Data mining	Yes	1	1
Any other	None	85	97

4.5 Knowledge recovery initiatives

Every organisation, as discussed in chapter 2, will inevitably lose some critical knowledge (DeLong 2004). DeLong continues to argue that managers can anticipate and respond to this

situation in three ways: programmes for effectively utilising retirees; outsourcing lost capabilities; and regenerating lost knowledge. These are some of the practices that the researcher sought to know whether they were being utilised by KeMU.

4.5.1 Programmes for effectively utilising retirees

On this practice, most of the interviewees mentioned that retirees were brought back to work on part time basis, or as consultants. The HR stated that the university was losing important knowledge when the expertise left the university either on retirement, resignation or death. The university had therefore come up with ways of utilising such expertise on a contract basis. However, majority of the interviewees mentioned that most of the retirees were not willing to come back on part time basis. Therefore, it was difficult to capture this knowledge once the retirees had left the university.

4.5.2 Outsourcing lost capabilities

None of the interviewees ever mentioned the availability of outsourcing lost capabilities as a knowledge retention practice. However, the librarian mentioned that the library had outsourced the digitisation services when it was automating its operations.

4.5.3 Reengineering lost knowledge

Among all the interviewees, only the librarian mentioned that they were regenerating the lost knowledge by documenting the procedures and processes of the operations of the library.

4.6 Human resources processes and practices for knowledge retention

In this section, the researcher investigated the human resource process and practices that could be used to retain knowledge in the university. These included: career development programmes; performance appraisal; reward systems; building a retention culture; and phased retirement programmes.

4.6.1 Career development programmes

Regarding career development programmes, the HR mentioned that the unit had a career development programme. Here the knowledge and competencies gaps were identified. Staff members who needed to upgrade their knowledge and competencies were identified. It is envisaged that when funds are made available they would be sponsored to undertake necessary studies. The career development programmes that were investigated included:

4.6.1.1 Training and mentoring

On training and mentoring, some of the academic interviewees mentioned that training of the academic staff was being conducted. The interviewees said that every three years, the heads of various academic units would hold a meeting. At this meeting, they would evaluate those staff that needed further training. These staff would then be sponsored either to undertake the training locally, or internationally at other universities. The university librarian also stated that the library staff would be sponsored to undertake some training programmes either within KeMU, or at other local universities. It was revealed that during the automation of the library, some staff members obtained training on the software being used. The HR mentioned that such training depended on the availability of funds and the willingness of the staff to undertake such endeavors.

Regarding mentoring, most of the interviewees revealed that there existed no official mentoring programmes. However, junior staff were encouraged to interact with more experienced staff to enable them ask questions on how to handle tasks.

4.6.1.2 Succession planning and job rotation

On succession planning, most of the interviewees indicated that the university would identify those employees who had the capacity to move into leadership positions. This ensured that there was no management gap, in case a position became vacant. The researcher noted that the interviewees were unaware that this was one practice of knowledge retention.

Regarding job rotation, interviewees held varying responses. For example, interviewees who headed academic units stated that it was not possible to rotate academic staff due to specialisations in different academic fields.

4.6.2 Performance appraisal (PA)

On this HR practice, majority (8) of the interviewees stated that performance appraisals were conducted yearly. At the start of every quarter, the heads of units would set certain targets for the employees in their units and these formed the basis for evaluation at the end of every calendar year. However, the HR revealed that the kind of performance appraisals being conducted were basically on whether the employees had met the set targets and not as a technique for knowledge retention. The HR further contended that the PAs were used for promotion purposes. Those who had met their set targets would be rewarded through job promotion or salary increment.

4.6.3 Reward systems

Rewards can follow PAs. Rewards can take various forms, such as recognition, promotion, autonomy, empowerment and letter of appreciation. On reward systems, the majority of the interviewees mentioned that among the rewards stated, only recognition and letter of appreciation were being used. However, the HR revealed that after the PAs the employees would be rewarded by promotion or increasing their salaries. The majority (9) of the interviewees mentioned that rewards helped retain employees especially those deemed to be knowledgeable in certain fields.

4.6.4 Building a retention culture

Here the researcher wanted to find out whether KeMU had built a knowledge retention culture. Among the interviewees, some mentioned that there existed a culture which was open to new ideas, to the creation of knowledge through research and to the flow of ideas from wherever these ideas originated. The HR stated that sharing of knowledge and usage among employees was one of the university’s cultures.

4.7 Role of ICTs in knowledge retention, transfer and sharing

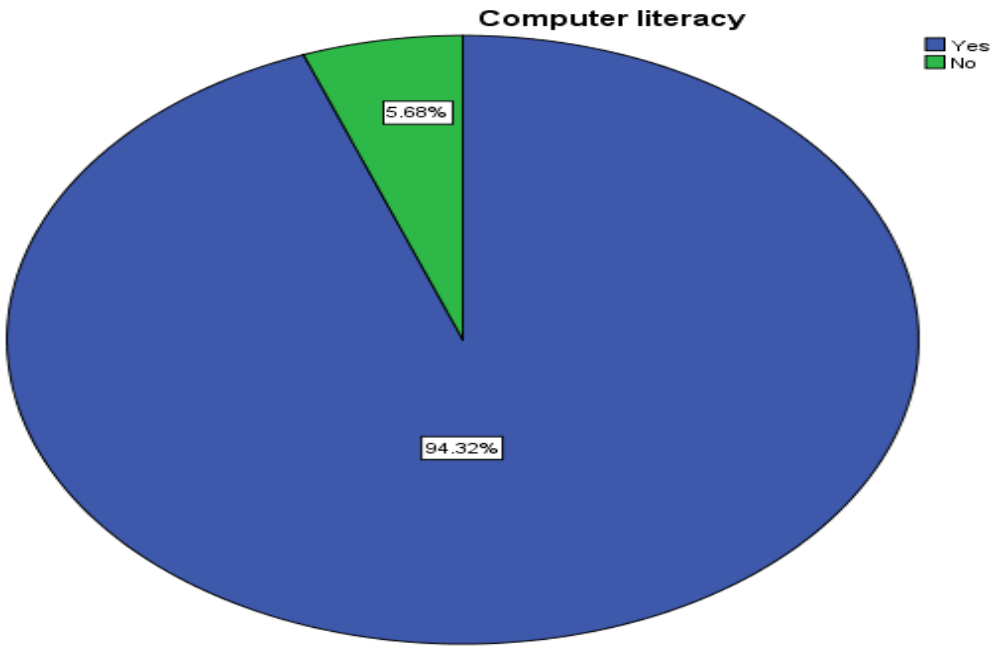
The knowledge-based view focuses on organisation's ability to gather, produce, maintain and disseminate knowledge (Peterson 2012:210). ICT is impacting heavily on the way organisations function and plays a vital role in the knowledge society (Carison 2008). ICT makes it possible for connections that enable knowledge transfer, sharing and retention in organisation (Carison 2008).

ICT resources can be an important part of any knowledge retention strategy but executives must be careful not to view technology as the solution to their knowledge retention problems (DeLong 2004). ICTs are just enablers. The knowledge-based view focuses on the organisation's ability to gather, produce, maintain and disseminate knowledge. In this section, the researcher investigated computer literacy and access to ICT; freedom of access to internet; and technologies used to retrieve, share and disseminate knowledge.

4.7.1 Computer literacy and access to ICTs

Computer literacy is the ability to utilize computer technology, in order to get information and communicate (Laudon 2007). Of all the 88 questionnaires returned, 83 (94%) of the respondents regarded themselves as computer literate while 5 (6%) said they were not.

Figure 4.10 Computer literacy



Technologies are enablers in knowledge retention, sharing and dissemination (Carisson 2008; Buckman 2004). The respondents were asked to indicate which ICTs they had access to in their institution. The results are shown in order of the highest to the lowest in table 4.6:

Table 4.6 Access to ICTs

Tool	Frequency	Percent (%)
Internet	86	98
Websites	86	98
Intranet/ Email	85	97
Computers	85	97
Databases	77	88
Skype	51	58
Discussion forums	33	38
Cell phone	4	5
Wikis	3	3
Fax	2	2
Telephone	2	2
Virtual conference rooms	0	0
Electronic bulletin boards	0	0
Knowledge directories	0	0
Groupware	0	0
Intelligent search engines	0	0

The majority of the respondents had access to internet 86 (98%), libraries 86 (98%), websites 86 (98%), intranet/email 85 (97%), computers 85 (97%) and databases 77 (88). On average 51 (58%) respondents had access to Skype. A few of the respondents indicated they had access to discussion forums 33 (38%), cell phone 4 (5%), wikis 3 (3%), fax 2 (2%) and telephone 2 (2%). All the respondents 88 (100%) indicated that they had no access to virtual conference rooms, electronic bulletin boards, knowledge directories, groupware and intelligent search engines.

On ascertaining whether the institution had internet connectivity, the respondents were then asked if they had free access to the internet. 87 (99%) of the respondents indicated that they did, while only 1 (1%) respondent had no access.

On computer literacy, all the interviewees regarded themselves as computer literate. The majority of the interviewees mentioned that they had access to internet; others mentioned websites, intranet/email, databases, cellphones, telephone and social media. Others said that they had access to Skype. Some of the respondents indicated they had access to discussion forums,

wikis, and fax. None of the interviewees had access to virtual conference rooms, electronic bulletin boards, knowledge directories, groupware and intelligent search engines such as Google.

4.7.2 Technologies used to retrieve, share and disseminate knowledge

Accessibility to technologies makes it possible to retrieve, share and disseminate knowledge (Peterson 2012: 215). In order for the researcher to determine what technologies were being used by the institution to retrieve, share and disseminate knowledge, the respondents were asked to identify technologies that were accessible to them. The results are shown in table 4.7:

Table 4.7 Technologies used to retrieve, share and disseminate knowledge

Tool	Frequency	Percent (%)
Intranet/ Electronic Mail	87	99
Internet	87	99
Computers	82	93
Databases	76	86
Skype	46	52
Discussion forums	36	41
Intelligent search engines	8	9
Fax	6	7
Virtual conference rooms	2	2
Cellphone	2	2
Telephone	1	1
Group ware	1	1
Wikis	1	1
Electronic bulletin boards	0	0

From the findings, all the respondents 88 (100%) used intranet/email, 87 (99) used internet, 82 (93%) used computers, 76 (86%) used databases, 46 (52%) used Skype, 36 (41%) used discussion forums. Intelligent search engines 8 (9%), fax 6 (7%), virtual conference room 2 (2%), cellphone 2 (2%), telephone 1 (1%), 1 (1%) groupware and wikis 1 (1%) were less used to retrieve, share and disseminate knowledge.

On technologies used to retrieve, share and disseminate knowledge, all the interviewees said they used libraries, email, and internet. Others mentioned using databases, Skype and discussion forums. Intelligent search engines, fax, virtual conference room, groupware and wikis were less used to retrieve, share and disseminate knowledge.

From the university website, the researcher found out that the university used ICT for knowledge retention, transfer and sharing. The university website had Facebook and Twitter links where both staff and students communicated to various subject matters. On the website, there were also links to various courses offered at the university.

4.8 Respondents' suggestions on knowledge transfer and sharing

At the end of the questionnaire and the interview, respondents were asked to make suggestions, recommendations, or comments regarding knowledge sharing and knowledge retention in the university. The following suggestions were made:

4.8.1 Knowledge sharing

- Open other ways of sharing knowledge like virtual conference rooms, Skype and wikis;
- Staff should be encouraged to share knowledge through various methods especially on social media like Facebook, Skype and WhatsApp.
- Staff to be encouraged to share knowledge with staff from other institutions.
- Holding seminars, training and workshops for knowledge dissemination so that when the knowledge experts leave the ones who remain still retain the operational knowledge.
- The university may give incentives or rewards to experienced, skilled and talented employees to gain staff co-operation, motivation and encourage them to share knowledge and mentor other employees.
- University should establish Internet and intranet services to facilitate access to knowledge exchange.
- The university should facilitate the increase of formal and informal group interactions and discussions through email to encourage knowledge sharing.

- The university to introduce mentorship programmes to enable the coaching of juniors and new employees to learn by doing, observing and imitating from experienced staff.
- Draft policies to allow the use of experts to mentor new employees and also deliberate policies should be established to encourage knowledge sharing.
- Retirees to be allowed to do consultancy work and recalled to assist when needed
- The university should join with other regional and international universities in exchange programmes so, as to exchange knowledge and embrace aspects of advanced technologies in other countries.
- The university should create a supportive knowledge sharing environment to ensure that knowledge is retained in databases, libraries and technical training manuals.
- Encourage team work, exchange programmes, recruitment of staff development fellows and encouraging experienced staff to transfer knowledge to younger academics.
- Engaging departed staff as consultants, part-time employees or guest lecturers.
- Acclimatising new hires to the activities and expectations surrounding knowledge sharing that include introduction to subject matter experts within the university training on job tools and technology systems.
- Introducing communities of practice especially online ones, networks and forums which allow workers who perform the same tasks to meet and share experiences and best practices.
- The management to establish team-based work design to increase social interactions among team members, which is likely to encourage knowledge sharing behaviour.
- The human resource department should conduct exit/knowledge retention interviews, particularly where critical knowledge of a departing staff member is recorded and preserved for future reference.
- Create institutional structures that promote knowledge sharing between departments and provide the opportunity for staff to meet with their peers and management to share information on what the university does.
- Maintain good relations with the organisational alumni, as they may have useful information and contacts that the university could rely on.

- Have staff forums where senior managers meet with staff and explain decisions or communicate policies and strategies in a formal setting.
- The university should have staff attachment study tours to other universities with strong institutional structures.
- Staff members that undergo specific types of professional training should be bonded for 1 to 3 years, depending on the length and nature of the training. This should be done to ensure the transfer knowledge and utilisation of the knowledge within the university. This is to prevent the exit of staff immediately after receiving training.

4.8.2 Knowledge Retention

- Capture the knowledge of the employees and store it in databases for use by other employees.
- Knowledge should be stored in institutional repositories and made available if possible online for easy retrieval.
- Information should be stored on the network instead of PCs.
- The university needs to establish a highly computerised record and archiving system to enable retrieval and accessibility of knowledge by every employee.
- Creating databases where all notes and course material could be kept in soft copies, organised on the basis of areas of specification.
- Encouraging documentation handover and retention of official records of activities (teaching materials, modules, manuals, reports, tests, course outlines, assignments and subject files).
- Request academics to compile booklets for the courses they teach, submission of dossiers annually reflecting experience on teaching methods, narratives, case books and recommendation on establishing good record keeping methods.
- Improve conditions of service and employ young and new lecturers on permanent basis to embrace sense of belonging.
- Find out reasons for staff departure, acquiring external contacts used for university operations and personal contacts.

- Acquisition of documentation on relevant operations such as student management, course handling, university procedure, consultancy seeking and curriculum development.
- Hiring experts, retirees and other specialists to train junior staff, provide coaching and mentoring services for a reward so that knowledge will be captured and retained.
- The university need to conduct regular performance evaluations that include peer to peer feedback.
- Develop knowledge maps which consist of business process diagrams in which each process is linked to specific knowledge and training.
- Harvesting knowledge, where registered knowledge is organised and accumulated by category on knowledge map of the management system and is regularly updated. This can be used by employees for future reference.
- Create an open access to minutes/agendas via an intranet
- Create electronic bulletins where weekly updates circulate electronically to all staff.
- Acquire research knowledge and publications from departing academic members of staff
- Briefing and handover of relevant operational materials, such as lecture notes, books, handbooks and administrative records.

4.9 Summary

This chapter has presented results of the collected data obtained from document review, questionnaires, interviews and observations. Data gathered through questionnaires was analysed using descriptive statistics from the Statistical Package for Social Science (SPSS) software version 20. The results of some of this analysis were exported into Microsoft Word and Microsoft Excel for visual presentation and reporting of the results. The data collected during the interview sessions and from the observations were analysed manually by content analysis. The analysis helped in obtaining vital information on the profile of the participants. The data has been presented in tables and charts. The results presented here provide the background for the discussions in the next chapter. The next chapter interprets and discusses the study findings as presented in Chapter Four. The interpretation and discussion is based on the study objectives.

CHAPTER FIVE

INTERPRETATION AND DISCUSSION OF RESEARCH FINDINGS

5.1 Introduction

The previous chapter analysed and presented the results of data obtained through document reviews, questionnaire, interviews and observations. This chapter provides the interpretation and discussion of the results. This is a key component of any research and it helps in drawing inferences and generalisations of findings to the problem statement (Ngoepe, 2012:153). Creswell, as quoted by Ngoepe (2012:153), contends that "an interpretation of results means that the researcher draws inferences from the results for the research questions, hypothesis and the larger meaning of results." Blaxerand Tight (1998:196) emphasise that interpretation is a process by which a researcher attaches meaning to collected data and findings and compares that meaning to other authors.

The main objective of this chapter is to bring the findings into the fold of the existing literature in relation to knowledge retention, transfer and sharing; and the ICTs tools adopted as enablers of knowledge retention, transfer and sharing at KeMU. The aim of this study is to develop a knowledge retention model for institutions of higher learning. To achieve this aim, five main objectives/ research questions were formulated to guide the study. This chapter provides a discussion of the findings in line with the objectives of the study which were outlined in chapter 1 (Table 1.1). The discussion that follows is based on the following themes:

- Knowledge retention policies;
- Knowledge transfer and sharing practices;
- Knowledge acquisition;
- Knowledge recovery initiatives;
- Human resource processes and practices for knowledge retention; and
- Role of ICTs in knowledge retention, transfer and sharing

5.2 Knowledge retention policy

Under this theme, the researcher wanted to establish if there were policies at KeMU with regards to reusing knowledge, preservation of knowledge and assigning responsibilities to retain knowledge. From the survey findings, it was established by the researcher that there existed some policies on recalling retirees, extracting from the university archives and data mining. From these findings, it is clear that even if some policies existed regarding knowledge retention, majority (10) of the respondent were unaware of these. According to Kidwell, Vander Linde and Johnson (2003); Sawyer (2004); University of California (2006); UniSA(2007), universities internationally and Africa in particular, need to put mitigation mechanisms in place such as policies and strategies in order to deal with knowledge retention challenges that face education institutions of higher learning. Although respondents indicated that there were policies with regards to reusing knowledge and preservation, the researcher could not find any such policy or strategy document developed by any institution of higher learning in Kenya including KeMU.

In Chapter 2 it was established that drivers for knowledge loss in organisations include workforce demographics, employee turnover and mobility and lack of documentation (DeLong 2004; Padilla 2006; Stovel and Bontis 2002). Failure to address these challenges leads to loss of relevant operational knowledge (DeLong 2004; Kruse 2003; Padilla 2006; Scalzo 2006; Stovel and Bontis 2002). Based on this understanding, the researcher sought to find out how knowledge was captured and retained at KeMU. Particular attention was paid to how the university determined the knowledge to be retained and how this knowledge was retained. From the interview findings, majority of the interviewees cited that the evaluation of knowledge needed for the operation of the institution was one of the criteria used. Others said they shared knowledge especially on carrying out tasks that needed consultations with other knowledgeable staff as a way of knowledge retention.

5.3 Knowledge acquisition

As already mentioned, KeMU has a number of functions performed by its staff that include academic, technical, administrative/management and professional tasks. Unique skills are required to perform these tasks knowledgeably. Converting either tacit to explicit knowledge, or vice versa, helps in capturing knowledge in an organisation (Peterson 2012:232).

With regard to knowledge acquisition practices, from both the survey and interview data collection methods, respondents indicated that tacit knowledge was distributed and shared through formal socialisation activities such as apprenticeship, staff meetings and mentorship. These thus, confirm Levey's (2011) view that tacit knowledge is transferred vertically during mentoring and teamwork. Knowledge that has not been codified (tacit knowledge) is transferred in brainstorming sessions and one-on-one conversations (Hansen, Nohria and Tierney 2001). Holbeche (2005) asserts that brainstorming, where free-flow group discussion can stimulate a number of ideas, is one of the standard techniques of tacit knowledge sharing resulting in retention of such knowledge in other employees' heads.

From the survey findings, the researcher established that knowledge was also acquired through formal activities such as education, training, workshops, projects and social media. This finding confirms Jacobs and Roodt's (2011) suggestion that managers can plan strategies and interventions to provide opportunities to share, including training courses, workshops and sharing in informal settings. All these activities mentioned above confirm Nonoka and Takeuchi's (1995) stage of socialisation where knowledge is created and shared by employees through SECI activities.

5.4 Knowledge transfer and sharing practices

Organisational knowledge transfer and sharing involves a number of practices. The aim of which is to enable an organisation to sustain its operational relevant knowledge (Wamundila 2008:134).

The study established that institutions cultures supported knowledge transfer and sharing. Individuals chose to share knowledge when they felt like doing so and experts could leave the institution at any time. The loss of knowledge due to an employee leaving can be minimised, if there is a high level of knowledge sharing (Barber *et al*. as cited in Steplehurst and Ragsdell 2010). When sharing knowledge, individuals willingly explicate their ideas, insights, solutions, and experiences to another individual either via an intermediary, such as a computer-based system, or directly (Turban *et al*. 2004). Table 4.4, reflects that all the respondents were familiar

with all the knowledge sharing tools in the university. From this study, it was established that workshops were the most commonly used tool for knowledge sharing and simultaneously regarded as the most effective tool for knowledge sharing.

Beside the meetings that the heads of departments hold with the other junior staff, the study established that the heads of departments hold meetings at managerial level. This practice is consistent with Nemani's (2010) view that valuable sharing of knowledge occurs during managerial staff meetings, where younger managers learn from more experienced ones. In the case of conferences, interviewees revealed that knowledge sharing is functional, especially during conferences where experienced staff members share their knowledge in the form of paper presentations. The same is done during seminars. This is consistent with Levy (2011) who affirms that there is horizontal knowledge transfer where knowledge is shared and transferred among people in the team/department/organisation. Levy further argues that effective vertical knowledge transfer facilitates organisational knowledge retention enabling minimal business competitive loss due to employees' retirement.

Emails are another tool that was being utilised for knowledge transfer and sharing at the university. This is consistent with findings of a study conducted by Staplehurst and Ragsdell (2010) on two UK small and medium enterprises (SMEs), where it emerged that knowledge flows via supporting emails.

Even though the majority of the respondents indicated that informal interactions were not commonly used tools for knowledge sharing, the researcher established during observations that juniors and management staff interacted during tea and lunch breaks and other social gatherings. This is consistent with research conducted by Khalid and Mahmood (2010), and Staplehurst and Ragsdell (2010) which indicated that employees and management shared knowledge in small groups informally during lunch or smoking breaks. The study established that community of practice, intranets, mobile phones, social events and mentoring are infrequently used as tools to transfer and share knowledge. This view was illustrated in chapter 4 table 4.4. Circulars/memoranda were also common tools for knowledge sharing. Interviews with heads of

departments confirmed that employees use memoranda that are posted on notice boards, in staffrooms for staff communication.

In this study, computer technology entails the use of the email, websites, intranets, web portals, groupware, blogs and mail groups. As such, the computer technology has been recognized as an enabling tool in facilitating knowledge sharing (Nemani 2010). Blogging was not common with respondents as a knowledge sharing tool. This could be so because employees preferred using other social networking tools such as Facebook, Twitter and WhatsApp. The internet plays a crucial role in knowledge management activities by providing access to the worldwide wealth of information (Malhan and Gulati 2003).

5.4.1 Succession planning

A common knowledge transfer technique, known as succession planning involves deliberate facilitation of knowledge flow among staff with a view to avoid knowledge loss through attrition challenges (Butler and Roch-Tarry 2002). From the interview findings, succession planning as a formal knowledge transfer technique did not appear to exist. Some of the respondents only indicated that in one way or another, people familiarised themselves with tasks in their units and as such acquired knowledge through experience. Given the importance placed on succession planning (Stovel and Bontis 2002), the findings at KeMU clearly indicate that succession planning as a knowledge transfer and sharing technique was lacking.

5.4.2 Communities of practice

Communities of practice are formal or informal groupings of employees whose common goal is to share operational knowledge (Cadiz, Griffith and Sawyer 2006; Nickols 2003).According to the survey findings, only 2% respondents agreed that communities of practice existed at KeMU. Asked about the role of managers in promoting knowledge transfer and sharing through communities of practice, 100% respondents indicated that such communities of practice were not regarded as tools for transferring and sharing knowledge. Holbeche (2005) is of the view that in this era of technological advancement, organisations may encourage online communities of

practice since the online environment supports and facilitates the networking of a community of learners. Asked to choose the most commonly and effectively used tool for knowledge sharing, respondents ranked communities of practice as last amongst other forms of knowledge sharing (position 24 out of the 24 options to select from). From the findings of this study, it emerged that communities of practice were the least utilised activity by HRD, in the sharing of tacit knowledge between individuals. This is in spite of Holbeche (2005)'s argument that greater value is placed on the sharing of information through networks. The findings also indicated that at KeMU communities of practice was the least used form of formal socialisation used to distribute and share tacit knowledge.

However from the interviews, all interviewees mentioned that they belonged to an informal grouping where they share operational knowledge. They also indicated that they held meetings where they shared different ideas (for example, weekly management meetings). Other respondents mentioned seminars, retreats, workshops and conferences though they said these were not purposely done to bring staff together for purposes of knowledge transfer and sharing. From these findings, one can claim that employees at KeMU share knowledge among themselves at a large scale in the meetings. DeLong (2004) and Ngulube and Mngadi (2007) reached the same conclusions in their studies.

5.4.3 Mentorship and apprenticeship

Mentorship and apprenticeship is one way in which knowledge in an organisation can be transferred and shared. According to OhioEPA (2006), mentorship involves the pairing of an experienced staff with a novice, in order to help the novice acquire competences required for operational benefit. The survey results indicate that mentoring programmes were not commonly used tools for knowledge sharing. From the interview findings, majority of the interviewees were of the view that no mentorship activities were in place, except for the fact that staff members are encouraged to consult with colleagues on various issues regarding operations. These findings therefore, suggest that at KeMU some form of mentorship should be considered. The lack of such a programme, suggests a lack of commitment from the institution in ensuring that operational knowledge is transferred amongst staff, particularly when compared with other

universities that have formally recognised mentorship programmes such as University of Reading (University of Aberdeen 2006; University of Reading 2007).

5.4.4 Coaching

Related to mentorship, coaching involves guiding and mentoring a trainee's progress on training given in order to consolidate the trainee's operational relevant knowledge which enhances such a trainee's performance (Bentley 1995). From the survey findings, no respondent indicated coaching as one of the tool being used for knowledge transfer and sharing at KeMU. The interview results however, insinuated some form of coaching as some of the interviewees revealed that they ensured their new staffs were guided by more experienced staff, on how to carry out their specific tasks. These interventions were being undertaken in spite of the fact that no policy relating to coaching exists. This finding therefore is in agreement with (Henly 2006, Nitschike 2007) assertion that coaching is an important tool for knowledge transfer in intergenerational workforce.

5.4.5 Knowledge repositories through documentation

Knowledge repositories are technology based platforms in which declarative, procedural and context knowledge are stored (Danish Delegation of the NATO Training Working Group on Individual Training and Education Development 2003; ECWA 2003; Lochhead and Stephens 2004). Documenting relevant operational knowledge has been advocated in order to ease attrition challenges and aid the learning period for new employees (DeLong 2002; DeLong 2004; Hanes, Gross and Ayres 2001; IBM Consulting Services 2003). From the interview with the heads of department, only the librarian mentioned that the library had a knowledge repository where they stored all the publications that were published both by the staff and the students. All the other interviewees said that their schools/departments had no central place where operational policies/procedures/work manuals could be located by each member of staff to ensure easy access. From these findings, it can be argued that KeMU lacks knowledge repositories in which operational documentations are kept. The findings concur with Padilla's (2006) assertion that most organisations do not document their operational relevant knowledge.

5.4.6 Storytelling

Narratives that constitute operational knowledge have been considered as a knowledge transfer tool (Prusak 2001). From the interview findings, there were discussions held during informal sessions like tea breaks to discuss issues concerning various tasks which can translate into knowledge transfer. These findings contend the views held by Leblanc and Hogg (2006) in which story telling is seen as a knowledge transfer technique.

5.4.7 Orientation

Orientation, also viewed as induction, involves initiation of staff to general and specific operational requirements in their roles (University of Reading 2007). With regard to the use of orientation as a knowledge transfer practice at KeMU 18% of the interviewees said that new staff members were inducted to the systems of the university after commencement of their job. However, the majority (82%) of the interviewees, especially those from the academic sector said that there were no formal orientation programmes in relation to specific activities that the employee would be performing. While this was alleged to be so, the interview with HRD indicated the opposite in the sense that staff orientation at KeMU was a formal requirement for all staff.

5.4.8 Job Rotation

Job rotation is an organisational practice that facilitates knowledge transfer (Kastelli 2006). This practice is where an individual is moved through a schedule of assignments designed to acquaint them to the entire organisation. It involves the deliberate movement of employees from one position to the other. Job rotation guarantees employee exposure to other challenges and work activities. Most of the interviewees agreed that job rotation as a knowledge transfer existed at KeMU. Furthermore, the interview results revealed that job rotation was only a practice amongst non-academic staff. Overall, these results imply that job rotation was a knowledge transfer technique at KeMU. These findings therefore, denote that through exposure to different roles, KeMU was able to transfer operational knowledge (UNESCWA 2003).

5.4.9 Phased retirement

Phased retirement is also one of the techniques for knowledge transfer (Lochhead and Stephens 2004). The practice is mainly used in situations where an organisation has experienced, or anticipates the loss of organisational knowledge due to retirement of employees (Howard Community College 2007). According to Gale (2007), long established organisations, like universities, are the first to experience knowledge loss threats that lead to most of them adopting phased retirement practices. From the interview results, the majority of the interviewees, and especially those from the academic units, indicated that retired academics were usually retained as contract workers. However, not all support staff were retained on contract except for those identified to possess unique skills and knowledge. These findings indicate that phased retirement was an existing practice knowledge transfer technique at KeMU. The findings are in line with the reviewed literature of (Gale 2007; Howard Community College 2007; Lochhead and Stephens 2004).

5.5 Knowledge recovery initiatives

Every organisation as discussed in chapter 2 will inevitably lose some critical knowledge (DeLong 2004). DeLong (2004) continues to argue that managers can anticipate and respond to this situation in three ways: programmes for effectively utilising retirees; outsourcing lost capabilities; and regenerating lost knowledge.

5.5.1 Programmes for effectively utilising retirees

As discussed in Chapter 2, the easiest knowledge recovery tactic to employ when expertise walks out the door is hiring retirees back as contractors or consultants (DeLong 2004). Retirees have skills needed and know the culture and organisational history. They also have extensive social networks necessary to get their jobs done, even when they are different from those they left. From the results of the interview, the majority of the interviewees mentioned that retirees were brought back to work on a part time basis, or as consultants. However, the majority of the interviewees revealed that most of the retirees were not willing to come back and work on a part time basis. These scenarios thus create difficult circumstances to capture the knowledge of such expertise once they have left the university. From these findings, it can be argued that although

KeMU has programmes for effectively utilising the retirees, in many cases these individuals were not willing to come back and work. This finding therefore is in line with the assertion by DeLong (2004) that retirees can be utilised for knowledge recovery since they have the skills needed to handle organisational tasks.

5.5.2 Outsourcing lost capabilities

Outsourcing is the act of transferring some of the organisations recurring internal activities and decision rights to outside providers, as set forth in a contract (Sancheti 2007:12). The interview results indicate that there was lack of availability of outsourcing lost capabilities as a knowledge retention practice. However, the librarian mentioned that the library had outsourced the digitisation services but, this was a small percentage of the services that had been outsourced. From these findings, it can be argued that KeMU was not outsourcing lost capabilities, which according to DeLong (2004) can help an institution when the loss of substantial expertise in specialised areas is too difficult and costly to replace or sustain.

5.5.3 Regenerating lost knowledge

In Chapter 2, DeLong (2004) argues that management may not recover lost knowledge rehiring former employees or through outsourcing. He continues to say that sometimes this knowledge loss will occur when top management makes conscious decisions to downsize, or relocate offices. As a result, employees with unique knowledge leave the organisation. More often, knowledge will be irretrievably lost either through poor documentation and storage practices, and/or through the retirement of highly skilled experts who fail to pass on their know-how. Regenerating essential knowledge that organisations can no longer access is a costly and frustrating effort, but in some cases it must be done (DeLong 2004). From the interview results, only the librarian mentioned that the institution was regenerating lost knowledge through documentation of the operations of the library. From these findings therefore, it can be argued that KeMU was not fully regenerating the lost knowledge. Given the importance placed on regenerating lost knowledge (DeLong 2004), the findings at KeMU clearly indicate that regenerating lost knowledge as a knowledge recovery initiative was lacking.

5.6 Human resources processes and practices for knowledge retention

As noted in Chapter 2, the literature so far is thin in addressing HR issues which are particular in knowledge management. Basically, core employees perform the essential tasks within the organisation. The organisational human resource systems are designed to support and manage human capital (Gramn and Schnell 2001). There is growing evidence that human resource management can play an important role in retaining a high-quality workforce (Chew 2004). Studies of progressive HRM practices in training, compensation and reward sharing have revealed that these can lead to reduced turnover and absenteeism, better quality work and better financial performance (Arthur 1994; Delaney and Huselid 1996; Ichniowsk, Shaw and Prennushi 1997).

5.6.1 Career development programmes

From the interview findings, it was clear that the HRD department had a programmeme for career development. The knowledge and competencies gaps were identified so that when the funds were made available, staff members who needed to upgrade their knowledge and competencies would do so.

5.6.1.1 Training and mentoring

According to Soliman and Spooner (2000), as a follow-up of performance appraisal, training can play an important role in bridging the gaps between what an organisation knows and what an organisation must know. On the other hand, mentoring helps transfer tacit dimension of expert's knowledge (Bryant 2005; Swap, Leonard, Shields and Abrams 2001). Mentoring is a process where knowledge is created through transformation of experience and embedded knowledge into perceptions of the person (Lam 1998; Nonaka 1994). According to the interview results, there existed training of the academic and non-academic staff at KeMU. Those serving in the library were being sponsored to undertake some training programmes, either within KeMU or at other local universities. This is in line with Yahya and Goh (2002) that providing the training on the organisation's vision and mission has proved to direct knowledge retention activities to the right destination thus, serving the objectives of an organisation.

5.6.1.2 Succession planning and job rotation

As discussed in the literature reviewed, Skinny Ohio (n.d.) argues that succession planning is more important than ever. With an aging workforce and the approaching mass retirement of the "baby boomers," one part of succession planning includes the need to capture and pass on the expertise, judgment and insight of senior leaders before they retire. The second aspect of succession planning, according to Skinny Ohio (n.d.), relates to the identification of employees within the organisation who have the potential to move into leadership positions. On the other hand, job rotation gives possibilities to employees to become familiar with the specificity of other positions that can improve the understanding of organisational characteristics and objectives (Jinchveladze 2009). From the results of the interview conducted by the researcher, it is clear that the university used this technique as a human resource process and practice in order to retain the organisational knowledge. This concurs with the International Public Management Association for Human Resources (IPMA-HR n.d.) which articulate that "some of the positive results that stem from succession planning include the ability to develop a strong pool of internal candidates, knowledge transfer, higher retention and the ability to fill management positions without a significant gap."

From the interview findings, it is evident that staff at the middle and junior levels who did not own academic positions were being rotated to various sections and departments at the university. These findings clearly indicate that KeMU uses job rotation as a human resource practice to transfer and retain knowledge, even though the staffs were unaware. This is in agreement with Jinchveladze (2009) that while job rotating employees should establish trust and social contacts with other units of the organisation. This will ensure that the transfer of knowledge takes on a broader spectrum.

5.6.2 Performance appraisal (PA)

As mentioned in Chapter 2, performance appraisal is one of the HR practices that can be regarded as a mechanism of linking employee interests, motivations, capacity and expertise with organisation objective (Jinchveladze 2009). PA process can act as an effective information exchange tool, which might later be transformed into knowledge by the employees.

From the interview results, it was established that although PAs were being conducted in the various units, they were basically conducted to determine whether, or not, employees had met set targets and not as a technique for knowledge retention. From this finding, the researcher contends that KeMU was not utilising PAs to retain knowledge. PAs can direct KM activities of employees, such as rewarding creative behaviour, sharing of new ideas. Simultaneously, the PAs can provide circumstance of accepting failures for keeping the motivation mood of employees to learn more (Yahya and Goh 2002). Learning is the part of knowledge transformation and sharing process.

5.6.3 Reward systems

Roberton and Hammersley (2000) argue that a reward system can be important predictors of knowledge sharing. The reward can take on various forms such as recognition, promotion, autonomy, empowerment, letter of appreciation and so forth. Independence is valued in knowledge–intensive organisations (Nurmi 1998). Accordingly, autonomy helps creative employees develop new ideas by taking responsibility and benefiting from free time to develop initiatives (Yahya and Goh 2002). From the interview findings, the kind of rewards that took place at KeMU was recognition, letter of appreciation, promotion and salary increment. This helped in retaining employees especially those deemed to be knowledgeable in certain fields. The findings concur with Kang and Snell (2009) that incentives, like the ones being applied at KeMU, can contribute to generalist knowledge advancement. Meanwhile, incentives attached to good performance and their effort to progress can promote specialist knowledge development.

5.6.4 Building a retention culture

As mentioned in Chapter 2, one of the most central views of the HRM School is that organisational culture is the key to organisational performance (Storey 1992; Deal and Kennedy 1991; Legge 1995). Moreover, the exponents of this approach also can be re-designed so that employees take on new priorities, values and conventions. From the interview findings, it was clearly stated that KeMU called back academic staff to offer consultancy services, or were

employed back on contract basis. However, most of the retirees were not willing to come back and work on these terms.

5.7 Role of ICTs in knowledge retention, transfer and sharing

According to Carisson (2008), ICTs are enablers in knowledge management and they assist in creation, storage, preservation, sharing and transfer of knowledge.

5.7.1 Access to ICTs and the Internet

Knowledge transfer yields retention and is the core of knowledge retention process, Levy in Peterson (2012:254). From the questionnaire findings, (91%) of the respondents indicated that they had unlimited access to the internet. This was further confirmed through the interviews, where majority of the interviewees confirmed that they had access to internet and through this they could access social media like Skype, Facebook and Twitter. They said this was facilitated by the use of smart phones and other gadgets, like Ipads. The interviewees mentioned that the university had Wi-Fi and provided free connection for the smart phones, Ipad and laptops. The use of modern information technologies is intended to help an organisation cope with turnover, downsizing by making the expertise of the organisation's human capital widely accessible, built to maintain a well-informed productive workforce, help large organisations provide a consistent level of customer service and also help organisations retain the knowledge of departing employees (Turban *et al*. 2008).

5.7.2 Technologies used to retrieve, share and disseminate knowledge

ICTs are electronic means of capturing, processing, storing, and communicating information and these ICTs include digital information, computer hardware, software and networks and analogue based information such as radio, television and telephone (Kiplang'at and Ocholla 2005). Holbeche (2005) avers that as knowledge is generated, it is captured and made accessible to others through IT systems. In this study, participants were requested to identify technologies used in their institution to capture, retrieve, share, disseminate and retain knowledge. The analysis from table 4.8 indicates that the majority have access to internet, computers,

intranet/email, databases, Skype and discussion forums for knowledge retrieval, capturing, sharing and transfer. This finding is consistent with Albers' (2009) and Dixon's (2000) observations that information technology has made the sharing, capturing and integrating of knowledge more feasible. This finding is also consistent with studies conducted elsewhere by Fombad (2009), and Stafford and Mearns (2009), where it emerged that telephones, computers, personal networked computers, email, internet and face-to-face discussions with peers were the most important for knowledge sharing and dissemination. Carisson (2008:54) observes that, "in acquiring knowledge, a crucial means is the use of information and communication technologies." Holbeche (2005) notes that most organisations now actively encourage employees to use the internet, intranet, bulletin boards, email and shared databases for knowledge sharing. Computers are used to share knowledge through person-to-person contacts and this is called a personalisation strategy (Hansen, Nohria and Tierney 2001). Hansen, Nohria and Tierney (2001) indicate that the chief purpose of computers is to help in communicating knowledge, not to store it.

However, in a study by Mavodza and Ngulube (2011), the majority (64%) of the respondents indicated that the knowledge they needed to perform their job functions was retained in their computers, or workstations. This is a clear indication that in as much as computers are used for knowledge sharing and transfer, they may also be used for knowledge storage. The rise of networked computers has made it possible to codify, store and share certain kinds of knowledge more easily and cheaply than ever before (Hansen, Nohria and Tierney 2001).

KeMU had a website www.KeMU.ac.ke. Posted on the website is information on courses offered, news, timetables, examination results, newsletters, e-journals, library catalogue, past papers and reports. From these findings, it can be stated that KeMU was utilising IT as a tool for knowledge transfer, sharing and storage. Studies conducted by Malhan and Gulati (2003) have indicated that the Intranet and email have such advantages as saving on travelling costs, frequent interaction with experts, better coordination and control of collaborative work.

The study established that intelligent search engines, fax, virtual conference rooms, telephone, groupware and wikis were the least used technologies in retrieving, sharing and disseminating

knowledge. This is in agreement with the findings by Gottschalk (1999) that indicates that the more information technology is used in an organisation, the greater will be the extent of information technology use for knowledge management.

The university has an established ICT department that deals with the functions of the technology of the university including the teaching of ICT. In these days, advances in information technology (IT) have made it easier to acquire, store and disseminate knowledge and many organisations are employing IT to facilitate the sharing and integration of knowledge (Kankanhali *et al*., as cited by Averrweg 2010). Turban *et al.*, as cited by Peterson (2012), suggest that knowledge management infrastructure such as internet, intranets, extranets, data warehouses are built in part from increased pressure to maintain a well-informed, productive workforce. The ICT director confirmed that the IT department in the university was the driving force for all the departments in the university.

5.8 Summary

In this chapter, the discussions of the findings of the study were presented. The findings from the study have shown that KeMU had not fully established a knowledge retention programmeme with a view to retaining the critical knowledge that is acquired in the institution. According to the interpretation, KeMU faces knowledge loss challenges that have implications on operations as there were notable gaps in the few established knowledge retention practices. Notwithstanding, a few positives were noted, although the majority of the considered knowledge retention practices were found to be lacking.

The following Chapter 6 is the final chapter of the study. It provides a summary, conclusion and recommendations based on the findings of this study.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The preceding chapter presented an interpretation and discussion of the findings in relation to the objectives of the study. This chapter presents the summary of major findings, conclusion and recommendations.

This study introduced KR concept focusing on its history and development to the present society globally and in Africa. It was revealed that much of the growth of KR was not in institutions of higher learning which have more complex structures. This study hence set out to contribute towards growth of KR in institutions of higher learning. KeMU was introduced in the contextual setting as the case study for the research.

As a result of knowledge not being well retained, KeMU experiences problems like duplication of work as there is no central repository for knowledge storage; loss of knowledge through expertise leaving the institution and over reliance on a few known subject experts as others have not been identified. With these problems in mind, the research presented in this study shows that a KR model therefore becomes imperative if KeMU has to overcome these challenges of knowledge retention.

The general purpose of this study was to assess knowledge retention practices at KeMU, with a view to entrench the culture of sharing. The ultimate aim was to develop a model for knowledge retention at an institution of higher learning.

The objectives of the study were:

1. To investigate knowledge transfer and sharing practices at KeMU;
2. To investigate whether knowledge retention policies have been developed and implemented at KeMU;
3. To explore knowledge recovery initiatives at KeMU;

4. To investigate human resource processes and practices for knowledge retention at KeMU;

5. To investigate ICT tools adopted as enablers of knowledge retention, creation, transfer and sharing at KeMU;

6.2 Summary of the findings

In Chapter One, the researcher envisaged that most organisations including KeMU were faced with the problem of knowledge loss and that proactive responses such as knowledge retention were required to handle the dilemma Internationally and in Africa, the findings were clear on the fact that universities were engaged in the management of their operational relevant knowledge (Cloete and Galant 2005; Dewe 2005; Kings College London 2005; University of California 2006; UniSA 2007; University of Edinburgh 2007). As for KeMU, this study established knowledge loss emanating from staff attrition challenges such as retirements and resignations and the lack of documentation for operational work processes and tasks. These established knowledge retention challenges are regarded as a threat for operations (DeLong 2002; DeLong 2005; Hahn 2006; Purdum 2006; Sutherland and Jordaan 2004).

With view to combat the established challenges, the literature review established a number of tools and practices that can be used to retain knowledge in organisations. These knowledge retention tools and practices grouped under: knowledge acquisition, transfer and sharing; knowledge retention policies; knowledge recovery initiative; human resource processes and practices for knowledge retention; and ICTs used to retrieve, share and disseminate knowledge were investigated to ascertain KeMU's efforts in retaining operational relevant knowledge. The results of the investigation were presented in Chapter Four and interpreted and discussed in Chapter 5. These results show a number of noticeable gaps in the available knowledge retention practices currently in place at KeMU.

6.3 Conclusion

This section presents the conclusions on various aspects of the research as per the objectives of the study.

6.3.1 Conclusion about knowledge acquisition, knowledge transfer and sharing practices

With regard to knowledge acquisition as an integral part of knowledge retention, the investigated practices (recruitment, training and development, brainstorming, expert systems/knowledge bases, subject matter experts, and after action reviews) had both positive and negative findings. Knowledge acquisition was supported in form of generation of ideas, utilisation of expertise and reviews on operations. An observation made by the researcher was that all these knowledge acquisition practices usually took place in the form of meetings. Meetings are forums in which operational decisions are usually made by experts (Turban 1999). At KeMU, a number of committees that handle operational matters were found to be in existence. This finding, therefore, is supported by authors such as Cheah, Rashid and Abidi (2003); McCall (2006); Poulymenakou, Cornford and Whitley (1990); and Soo, Midgley and Devinney (2002) who view knowledge acquisition as a tool for problem solving and operational management.

In contrast, there was no support established for the existence of recruitment, training and development and expert systems/knowledge bases as knowledge acquisition practices. According to the reviewed literature, knowledge acquisition cannot take place in a situation where recruitments of staff are not undertaken, staff are not trained in operational tasks and repositories for operational knowledge are lacking (DeLong 2004; IBM Business Consulting Services 2003; Rowold 2007; Tsai and Lee 2006; Vermeulen 2003).

Considering the findings on knowledge transfer and sharing, the practices that were investigated (succession planning, communities of practice, mentoring and apprenticeship, coaching, knowledge repositories through documentation, storytelling, orientation, job rotation, and phased retirement) also had both optimistic and undesirable findings. The participation of staff in various meetings, the exposure of staff to various units and the retention of employees beyond

their retirement age were found to be strengths in the transfer and sharing of knowledge at KeMU. These positive attributes refer to communities of practice, job rotation and phased retirements as knowledge transfer practices. The ability to enable operational knowledge survive through professional connections, exposing staff to challenging and multi-operations as well as the ability to nurture tacit knowledge within experienced long serving staff is considered vital for knowledge retention (DeLong 2004; Levine and Gilbert 1999; LochHead and Stephens 2004).

In contrast, succession planning, coaching, knowledge repositories through documentation, storytelling, orientation, general and job specific, mentorship, formal and informal were all found to be lacking at KeMU. Referring to succession planning, Butler and Rock-Tarry (2002) argue that the failure to identify talent, skills and competencies undermine the very efforts of knowledge management in an organisation. Similarly, the inability to document operational knowledge has been noted as unfortunate in view of operational threats caused by attrition challenges and difficulty observed in finding potential replacements (Hanes, Gross and Ayres 2002; DeLong 2002; Padila 2006).

6.3.2 Conclusion about development of knowledge retention policy

Concerning knowledge retention policies, the findings established that there existed some policies on recalling retirees, extracting from the university archives and data mining. From these findings, it is clear that even if some policies existed regarding knowledge retention, the employees were not aware of such policies.

6.3.3 Conclusion about knowledge recovery initiatives

On knowledge recovery initiatives the following initiatives were investigated: programmes for effectively utilising retirees; outsourcing lost capabilities; and regenerating lost knowledge. The findings established that KeMU had programmes put in place to effectively utilise retirees although majority of them were not willing to come back and work for KeMU. From the interview results, only the librarian mentioned that the institution was regenerating the lost knowledge through documentation of the operations of the library. From these findings, it can be

argued that KeMU was not fully regenerating the lost knowledge. Given the importance placed on regenerating lost knowledge (DeLong 2004), the findings at KeMU clearly indicate that regenerating lost knowledge as a knowledge recovery initiative was lacking.

6.3.4 Conclusion about human resource processes and practices for knowledge retention

Human resource processes and practices include; career development programmes; performance appraisal; and reward systems. From the research findings, it was established that there existed training of the academic and non-academic staff at KeMU. The staffs in the library were being sponsored to undertake some training programmes, either within KeMU or at other local universities. This is in line with Yahya and Goh (2002) that providing the training on the organisation's vision and mission has proved to direct knowledge retention activities to the right destination thus, serving the objectives of an organisation.

From the results of the interview, it is clear that the university utilised succession planning and job rotation as a human resource process and practice in order to retain the organisational knowledge. This concurs with the International Public Management Association for Human Resources (IPMA-HR n.d.) which articulate that "some of the positive results that stem from succession planning include the ability to develop a strong pool of internal candidates, knowledge transfer, higher retention and the ability to fill management positions without a significant gap."

From the interview results, it was established that although PAs were being conducted in the various units, they were basically conducted to determine whether, or not, employees had met set targets and not as a technique for knowledge retention. From this finding, the researcher contends that KeMU was not utilising PAs to retain knowledge.

From the interview findings, the kind of rewards that took place at KeMU was recognition, letter of appreciation, promotion and salary increment. This helped in retaining employees especially those deemed to be knowledgeable in certain fields. The findings concur with Kang and Snell (2009) that incentives, like the ones being applied at KeMU, can contribute to generalist

knowledge advancement. Meanwhile, incentives attached to good performance and their effort to progress can promote specialist knowledge development.

6.3.5 Conclusion about ICT tools for knowledge transfer

Concerning how ICTs are utilised to retrieve, share and disseminate knowledge, it emerged that majority of the respondents (94%) were computer literate and therefore were capable of using the computer for knowledge retrieval, transfer, sharing and retention of explicit knowledge. The study also established that the respondents had frequent access to fax, internet, intranet/email, databases, Skype and discussion forums. In contrast, there was little support established for the existence of intelligent search engines, fax, virtual conference rooms, telephone, groupware and wikis being used technologies in retrieving, sharing and disseminating knowledge.

6.3.6 Overall conclusion about the research problem

The challenges that were established are in line with the research problem stated in Chapter One that KeMU had knowledge loss challenges that posed threats on its capacity to perform efficiently. Thus, the research results have established that the following knowledge retention practices were lacking at KeMU:

- Documented work processes;
- Training and development for specific job tasks;
- Orientation for general and job specific;
- Knowledge repositories;
- Communities of practice;
- Knowledge retention policies;
- Knowledge recovery initiatives; and
- Human resources processes and practices.

Considering the value placed on the above list of lacking essential practices for knowledge retention, KeMU is indeed in dire need for a solution to help retain operational relevant

knowledge. This need was well established in the findings. However, KeMU's knowledge retention efforts could be aided by some positive aspects that were determined as follows:

- Availability of general policies on knowledge retention;
- Availability of a number of courses relevant for some specific job functions in the university; and
- Operations based on committees in which expertise emanating from experienced members of staff are utilised.

The strengths KeMU has should be nurtured by ensuring that they are formally recognised and taken along with other missing knowledge retention practices.

6.4 Recommendations

Based on the findings, the researcher makes the following recommendations:

- The study recommends that KeMU should work out a knowledge retention policy on how to implement mentoring programmes, coaching, succession planning, apprenticeship, encouraging communities of practice, utilising retirees and subject matter experts, recording experts knowledge and keeping the lessons-learned archives as strategies for capturing and retaining critical personalised/tacit institutional knowledge. The experienced and subject matter experts (SMEs) should be identified so as to assist junior employees in knowledge acquisition and skills equipping that should be retained in institutions of higher learning.

- Top leadership need to realise the importance of managing knowledge and hence be in a position to offer support through provision of sufficient resources, structures, offering incentives to employees to encourage knowledge sharing, offer training to employees on KM and its benefits and identifying of intellectual capacity of all cadres of employees.

- With regard to ICT, KeMU should invest in a comprehensive infrastructure that supports KM (improve bandwidth, accessibility, provide KM tools), create awareness of the institutional repository and develop policies on ICT usage to manage knowledge rapidly and more efficiently so as to reap benefits. Staff training is also needed to maximize the use and enable the depositing of items in the repository.

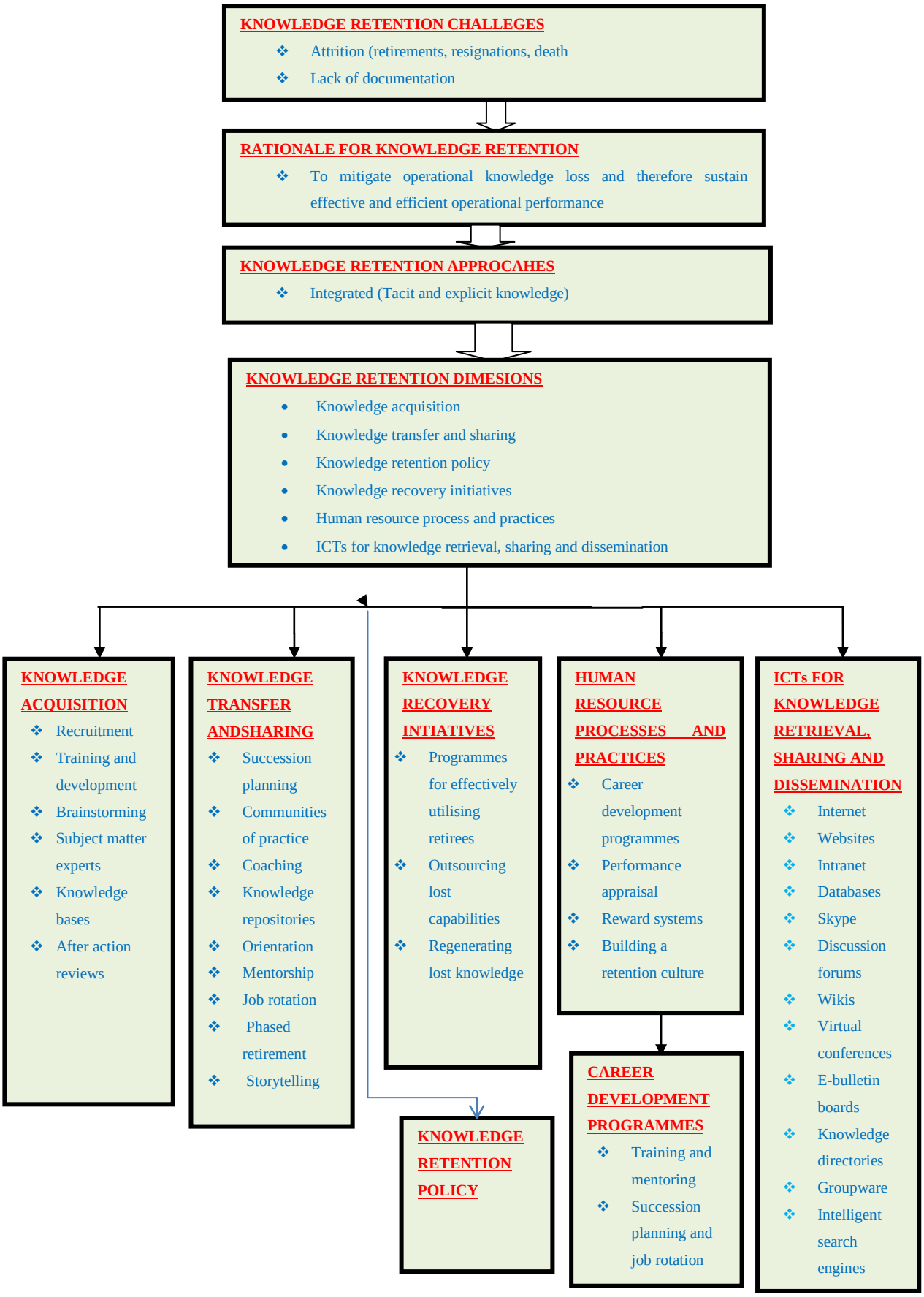
6.5 KeMU Knowledge retention model

One of the objectives of the study was to develop a model for knowledge retention at an institution of higher learning. Arising from the findings highlighted in Chapter 4, the researcher proposes a model that could be used by academics and other KM practitioners to understand and improve KR in higher learning institutions. The parameters of the model are established through empirical cases of mature knowledge-based entities as reflected in Chapter 2. This stems from the fact that none of the research entities was found to have mature KR systems. The model suggested in this study is rooted in the impacts that: knowledge acquisition; knowledge transfer

and sharing; knowledge policy; knowledge recovery initiatives; human resource processes for knowledge retention; and ICTs for knowledge retrieval, sharing and dissemination have on the degree of achievement of knowledge retention. Considering the findings and the recommendations made for KeMU, the suggested Knowledge Retention Model (KRM) can be presented as shown in Figure 6.1. Having looked at the KR in literature review and identified various strategies for KR, the model is based on these strategies. The strategies are categorised as:

- Knowledge acquisition;
- Knowledge transfer and sharing;
- Knowledge retention policy;
- Knowledge recovery initiatives;
- Human resources processes and practices for knowledge retention; and
- ICTs for knowledge retrieval, sharing and dissemination.

Figure 6.1Knowledge Retention Model



6.6 Recommendations for future research

This study achieved its mandate of developing a model for knowledge retention for KeMU. The established gaps in the actual knowledge retention practices at KeMU formed the basis upon which the various reviewed knowledge retention practices have been recommended. The recommended model has set a platform that clearly provides a road map on how to tackle knowledge retention challenges. The recommended knowledge retention model could be further adapted by other African universities that may be facing the problem of knowledge loss.

Further studies can be conducted on measuring KM in an academic institution. This would be more pertinent if done in an academic institution that already has a formalized KM initiative in place.

The study focused on academic staff and heads of departments and the human resource management. Future research can sample non-teaching staff and their roles in KM in an academic institution.

6.7 Implication for theory and practice

The findings from this study may help in the implementation of a knowledge retention model. If the recommendations of this study are taken into consideration they can help institutions of higher learning in knowledge retention. The study adds to the existing theoretical and conceptual matters in knowledge retention in institutions of higher learning. The study has proposed a model that may present a basis for knowledge retention. It is hoped that such a model will guide institutions of higher learning in retaining their knowledge.

6.8 Summary

This chapter has provided a summary of the findings, conclusions based on the conclusions and recommendations for KeMU. Having recognised the findings of the study, this chapter presented the gaps in knowledge retention at KeMU and developed a model for its knowledge retention. This study is a contribution in the promotion of KR in the African institutions of higher learning, and particularly the East African region.

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APPENDICES

Appendix 1: COVER LETTER

UNIVERSITY OF SOUTH AFRICA
DEPARTMENT OF INFORMATION SCIENCE

Dear participant,

My name is Evangeline Kagwiria Stephen a Masters student in the Department of Information Science, University of South Africa (UNISA). I am conducting a study in partial fulfillment of the requirements of a Masters degree in Information Science. My study is titled "**A Knowledge Retention Model for Institutions of Higher Learning: A Case of Kenya Methodist University (KeMU).** Knowledge is a strategic resource that makes a difference between success and failure for organisations and countries. I consider universities to be knowledge organisations whose knowledge must be retained in order for them to achieve competitive advantage in the academic institutions. To this end I kindly request that you complete the questionnaire attached herewith regarding the production and retention of knowledge in you university.

Please do not write your name or contact details on the questionnaire. It remains anonymous and confidential. The main objective of the study is to find out how knowledge is managed at universities, establish how ICTs are utilised as enablers in knowledge retention and identify some of the setbacks associated with loss of knowledge at the Kenya Methodist University (KEMU) as a result of poor knowledge retention strategies. Ways will be suggested on how to improve knowledge retention at the university. This study will be confined to KEMU and hopefully, the findings will be applicable to other universities and especially the universities across sub-Saharan Africa.

Your contribution to understanding how knowledge is retained at KEMU will be very important. Participation is voluntary and you are assured that the information you give will be treated confidentially and will be used solely for the purpose of the study. There is no right or wrong response to any question, but please give honest answers. Thank you for your time and

participation in the survey. Please answer all the questions to enable the researcher find answers to the research questions of the research.

Very Sincerely,

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Appendix 11: Questionnaire

SECTION A

INTRODUCTION

Background Information

Please write your answers in the space provided.

1. Your job designation at KEMU----------
2. Department----------
3. For how many years have you worked for the university?

0-5	
6-10	
11-20	
21-30	
31-40	
Other (Please specify)	

SECTION B

Organisational Knowledge

Organisational knowledge is knowledge that is found in documents, papers and in the heads of individual workers.

4. In as far as you are concerned, is acquisition of knowledge and information a priority in your organisation?

Yes	

No	

5. a) What is the ease with which you find and utilise information in the university?

Easy	
Very easy	
Difficult	
Very difficult	
Don't know	

b) If difficult, please explain briefly in the space provided hereunder

……

……..……

……..…….

6. What kind of knowledge acquisition activities are there in your organisation?

Education	
Training	
Workshops	
Mentoring	
Projects	
Social media	
Any other (please Specify)	

SECTION C

Knowledge Acquisition

Knowledge acquisition refers to mechanisms that enable an institution/individual to possess knowledge relevant for carrying out their operations/tasks.

7. Academic work involves a number of activities. Which of the following have you ever been involved in?

Teaching	
Research	
Curriculum development	
Academic life	
Consultancy	
Other (Please specify	

8. At the time you joined KEMU university did you already have experience in any of the following functions?

Activity	**Yes**	**No**
Teaching		
Research		
Curriculum development		
Academic public life		
Consultancy		

9. Did you have training in any of the following listed functions at the time you became an academic at KeMU? (Please note that the training referred to does not include your bachelors, masters and PHD degree. It refers to specialised professional training for purposes of carrying out those tasks efficiently and effectively).

Activity	**Yes**	**No**
Teaching		
Research		
Curriculum development		
Academic public life		
Consultancy		

10. If at the time you joined the university you had not participated in the above mentioned functions in question 11, which of them do you think you required specialised training before commencement of your duties as a Lecturer?

Teaching	
Research	
Curriculum development	
Academic public life	
Consultancy	
Others (Please specify)	

11. Regardless of your views on specialised training for academic staff, which of the following training and development activities do you think would be necessary to enhance a lecturer's performance in his/her duties? (You may choose more than one option).

Proposed training	**Necessary**	**Unnecessary**
Induction/orientation to functions, policies and procedures of the university in general and the school/department in particular		
Introduction to short courses on teaching methodology (covering: teaching methods;		

course design; teaching materials; assessment, student support and compiling of teaching portfolio)		
Introduction to short courses on research methodology		
Introduction to short courses on curriculum development		
Introduction to short courses on school/departmental administration and management		
Introduction to short courses on general and specialised computer programmes necessary for carrying out academic work		

12. Besides the above mentioned specialised training in question 13, is there any short training courses that you feel the university should either recommend or introduce to develop professional competencies of academic staff?

    Yes ☐ No ☐

13. If the answer to question 14 above is "yes", list the short courses that you would recommend.

    1……
    ……
    2……
    ……
    3……
    ……..

14. It is common to face challenges in any work environment. Which of the following techniques does your school/department use to handle challenges?

Brain storming	
Consultations with staff considered knowledgeable in the challenge being addressed	
Referring to an expert system/knowledge base	
Other (Please specify)	

15. Considering the period that you have served in your school/department, how often do you think the school holds sessions to reflect on how effective efforts made to handle challenges have been?

Very often	
Sometimes	
No opinion	
Rare	
Never	

SECTION D

<u>Knowledge Transfer and Sharing</u>

Knowledge transfer refers to the flow of knowledge among individuals in organisations, departments or sections and unit. Knowledge sharing is the exchange of knowledge between the knowledgeable and the receiver.

16. What role do managers in your institution play in promoting knowledge transfer and sharing?

Establishing communities of practice	
Promoting professional networks	
Encouraging staff to share knowledge with co-workers	
Attending informal gatherings where knowledge is shared	
Appointing mentors	
Regular meetings with other staff	
Encouraging communicating through intranet	
Inviting experts to give lectures	
Establishing work teams/project teams	
Use of information repositories	
Use of databases	
Any other (Please specify)	

17. In as far as you know does your university work with other universities in any of the following knowledge retention practices? (Please select one or more of the ways)

Joint research projects	
Joint training programmes	
Joint seminars/workshops	
Exchange of staff	
Exchange of information	

Any other (please specify)	

18. What rewards/incentives if any are there to encourage knowledge sharing in your institution? (please tick as many as may apply)

Promotion at work	
Pay rise	
Monetary rewards	
Any other (Specify)	

19. Which of the following motivations do you consider as reasons for sharing knowledge in your institution?

To get recognition	
To be rewarded	
To satisfy self-fulfillment needs	
To support management strategic objectives	
To enhance my career	
To mentor junior colleagues	
To enhance productivity	
To enhance quality service	
To impact education	
To impact training	

Any other (Specify)	

20. In your institution which of the following or any other is commonly used as a tool for sharing knowledge?

Staff meetings	
News letters	
Circulars/memoranda	
Informal interaction	
Briefing sessions	
Use of the notice board	
Email	
Websites/online resources	
Mobile cell phones	
Intranets	
Web portals	
Blogs	
Mail groups	
Workshops	
Seminars	
Conferences	

Teambuilding exercises	
Face-to-face interactions	
Social events	
Training	
Performance appraisal	
Mentoring programmes	

21. Which of the following do you think is effective in sharing knowledge in you institution? (Please tick as many responses as you can)

Staff meetings	
News letters	
Circulars/memoranda	
Informal interaction	
Briefing sessions	
Use of the notice board	
Email	
Websites/online resources	
Mobile cell phones	
Intranets	
Web portals	

Blogs	
Mail groups	
Communities of practice	
Mobile phones	
Workshops	
Seminars	
Conferences	
Teambuilding exercises	
Written reports	
Face-to-face interactions	
Social events	
Training	
Performance appraisal	
Mentoring programmes	

SECTION E

<u>Knowledge Retention</u>

Knowledge retention is the capture of critical knowledge and expertise that is at risk of loss when employees leave an organisation.

22. Which of the following or any other is utilised for knowledge storage in your institution?

Databases	

Lessons-learned archives	
Case records	
Paper records	
Audio tapes	
Video tapes	
Any other (Please specify)	

23. Which of the following is used as a methodology of retaining institutional knowledge? (Please tick as many as can apply)

Documentation processes	
Use of software to capture work processes	
Interviewing retirees and recording their experiences	
Mentoring new/younger talent	
Work processes knowledge capture through advanced software	
Any other (Please specify)	

24. Which of the following experts have left your institution within the last five years? (Please tick as many as you can)

Lecturers	
Documentalists	
Librarians	

IT specialists	
Archivists	
Public relations manager	
Technician	
Researchers	
Marketing specialists	
Communication manager	
Any other (Please specify)	

25. Of those who left the institution is there anyone who was interviewed by the institution in order to capture their knowledge? (Please tick as many as it applies)

Lecturers	
Documentalists	
Librarians	
IT specialists	
Archivists	
Public relations manager	
Technician	
Researchers	
Marketing specialists	

Communication manager	
Any other (Please specify)	

26. How is the Human Recourse Department (HRD) in your institution tapping into retaining and capturing retiree's know-how and experts' best practices so that the information can be passed on to current and future workers?

Interview employees and keep written records	
Experts mentor other staffers	
Experts remain on call after their departure dates	
Retirees are invited as consultants' e.g. to conduct trainings	
Conducting exit interviews	
Archive the knowledge	
Any other (Please specify)	

27. Who is responsible for the retention of knowledge in your institution?

Human Resource Department	
Heads of departments	
Knowledge officers	
Librarian	

Archivist	
Any other	

28. Which of the following is your institutional policy on reusing knowledge?

Recalling retirees	
Extracting from the university archives	
Data mining	
Any other (please specify)	

29. How is knowledge retained/preserved in your institution? (Please tick those that apply)

Retirees teaching new employees	
Recording retirees on video/audio tapes	
Conducting interviews	
In institutional archives	
Any other (Please specify)	

30. Which are the major sources of knowledge that have to be retained in your institution?

Those approaching retiring age	

All experts in various sections	
All the experienced workers	
Managers	
Any other (Please specify)	

SECTION F

<u>Role of Information and Communication Technologies in Knowledge Retention, Transfer and Sharing</u>

Information technology makes it possible for the connections that enable knowledge transfer, sharing and retention in organisations.

31. Do you consider yourself computer literate?

Yes	
No	

32. Which of the following or any other Information and Communication Technologies (ICTs) do you have access to in your institution? (Please tick as may apply)

Intranet? electronic mail	
Virtual conference rooms	
Fax	

Internet	
Computers	
Telephone	
Cellphone	
Electronic bulletin boards	
Discussion forums	
Knowledge directories	
Groupware	
Databases	
Intelligent search engines	
Libraries	
Wikis	
Skype	
Websites	

33. If your institution has internet connectivity is the internet freely accessible to every employee?

Yes	
No	

34. If yes how often do you access the internet?

Once in a day	
Twice a day	
2 to 5 times a day	
I have unlimited access	
Infrequent access	

35. What kind of technologies do you use in your institution to retrieve, share and disseminate knowledge? (Please tick those that apply)

Intranet/electronic mail	
Virtual conference rooms	
Fax	
Internet	
Computers	
Telephone	
Cellphone	
Electronic bulletin boards	
Discussion forums	
Groupware	
Databases	
Intelligent search engines	
Libraries	
Wikis	
Skype	

Recommendations

36. What do you propose should be done to improve any of the following in your institution

a) Knowledge sharing

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b) Institutional knowledge retention

Appendix 111: Interview guide with Heads of Department

INTERVIEW GUIDE

Introduction

Good morning/afternoon/evening dear Professor/ Dr. / Mr. /Mrs /
Respondent/Interviewee……

My name is Evangeline Kagwiria Stephen. I am carrying out a research for my Masters dissertation at the University of South Africa. My topic is **A Knowledge Retention Model for Institutions of Higher Learning: A Case of Kenya Methodist University (KeMU).** You have been selected to take part in this research through purposive sampling. I therefore look forward to your support and cooperation in this noble cause.

Please, note that your views in this interview session shall not, in any way be used for any other purpose rather than what has been stated above. You are therefore assured that your views on the content of this interview shall not be used in a way that might cause damage to your reputation as an individual or otherwise. Integrity, emotions, or indeed professional conduct as the information provided will be treated with high level of confidentiality. Your participation is voluntary and you are free to withdraw from the process at any point during the interview process. Please feel free to ask questions where you may need further clarification.

Thank you.

Ms Evangeline Kagwiria

TOPIC:

A KNOWLEDGE RETENTION MODEL FOR INSTITUTIONS OF HIGHER LEARNING: A CASE OF KENYA METHODIST UNIVERSITY (KeMU).

Date of interview…….

Place of interview…….

Rank of interviewee…….

AIM OF THE RESEARCH

To develop a model for knowledge retention at an institution of higher learning

Research objectives

I. To investigate knowledge acquisition, transfer and sharing practices at KeMU

II. To investigate whether knowledge retention policies have been developed and implemented at KeMU

III. To explore knowledge recovery initiatives at KeMU

IV. To investigate human resource processes and practices for knowledge retention at KeMU

V. To investigate ICT tools adopted as enablers of knowledge retention, creation, transfer and sharing at KeMU

<u>SECTION A</u>

Knowledge retention

Knowledge retention is capturing and preserving knowledge in the institution for reuse in the future.

1. What are your workforce demographics and how have they affected your operations?

2. Have you ever faced staff attrition challenges? If so, what are the main staff attrition challenges faced and how do they affect your operations?
3. How do you preserve your operational knowledge?

SECTION B

Knowledge acquisition

An organisation acquires knowledge in many ways including recruitment of staff and training and development, after action reviews, interviews and observations.

4. In your Unit/ Department/Library/School, how do you ensure that your employees have the relevant knowledge to carry out their tasks? Are there specific ways used for employee knowledge acquisition?
5. For each of the identified ways used as a knowledge acquisition tool, probe on how such a tool is used and its effectiveness. For the tools that are not mentioned by the interviewee ask questions for willingness to have them introduced. An explanation on each tool can be given.

   Follow-up questions for specific mentioned knowledge acquisition techniques can be asked as follows:

   Recruitment

   Is recruitment determined based on the need to fill a vacant position or based on the knowledge requirements for a given position that is, position review before recruiting?

   Training and Development

   Ask questions of what type of training or staff development programmeme is in place. Ii it general or specific to tasks performed?

   Expert systems, subject matter experts and the use of after action reviews

   Once faced with a task that requires a solution and in the event that a solution is found, how do you capture the process leading to the solution? Who do you consult for solutions? Do you review the whole process that lead to a solution? If so what is the objective of this review?

SECTION C

Knowledge transfer and sharing

6. Most work performed at KeMU is interdependent. Even in a situation where interdependence does not exist there comes a time when old employees will need to share what they know with new employees. Given this scenario, how do you ensure the flow of knowledge within staff in your unit takes place?
7. Another challenge that commonly confronts organisation today is the loss of knowledge due to mobility and staff attrition related issues. Prior to or in the event that you lose an employee in your Unit/Department/ School, how do you determine and ensure the retention of knowledge for purposes of continuity in that given position? Are there any staff attrition surveys conducted?
    a) Probe for the availability of any of the following programmes that might not be mentioned: succession planning; communities of practice; coaching; mentoring; orientation (general and specific), job rotation and phased retirement and stories.
    b) For all the mentioned knowledge transfer mechanism in place, ask questions on how effective they are, and if not how best they need to be practiced.
    c) For the probed not available knowledge transfer programmes, ask on willingness to have them in place. An explanation of knowledge transfers tools could be offered.

Follow-up questions for specific mentioned knowledge transfer could be asked as follows:

<u>Succession planning</u>

a) How do you address the replacement of staff for position that fall vacant? How do you ensure that right replacements are placed in positions especially where recruitment from outside KeMU has not been used?

Communities of practice

a) Professional development and competencies rely much on what one is able to gather from colleagues. Considering this view, do you think members of staff in your Unit/School/Department interact for purposes of learning from one another? If this is the case are there formalised interaction groupings in place in your Unit/School/Department?

Coaching and mentoring

a) The value that experienced employees bring to an organisation can hardly be denied. How do you utilise long serving members of staff to enhance performance of new entrants in your Unit/School/Department?

Phased retirement

a) In view of the fact that not only employees retire because they are no longer able to perform their duties, how does your unit treat such cases?

Job rotation

Complacency on duty is a disease diagnosed by many management theorist. Do you practice job rotation in your Unit/School/Department?

Orientation(general and specific)

a) How are employees in your unit oriented?

Knowledge repositories

a) Due to natural human nature, not all employees may be willing to interact for purposes of gaining knowledge. Do you have knowledge repositories in your Unit/School/Department?

SECTION D

Knowledge retention policy

One way of ensuring a successful introduction of knowledge-based initiatives in an organisation is through the formulation of a knowledge policy. What policies does your institution have in place concerning knowledge retention?

SECTION E

Knowledge recovery initiatives

Every organisation will inevitably lose some critical knowledge. Therefore every institution need to initiate programmes for knowledge recovery which include they: use of retirees effectively; outsourcing; and regenerating knowledge.

a) In your Unit/School/Department are retirees hired back as contractors or consultants?
b) Do you outsource lost capabilities or any other services in your institution?

SECTION F

Human resource processes and practices

Career development programmes

To complement the skills inventory system, extensive career development and succession planning processes are needed to retain employees – or at least slow turnover and build long term workforce capabilities. The career development programmes includes training/mentoring, succession planning and job rotation.

Training/mentoring

a) Do you conduct any training or mentoring in your Unit/School/Department

Succession planning

a) In your Unit/School/Department do your identify individuals who have certain potentials and capture their knowledge or recommend them for promotion?

Job rotation

a) Are employees rotated to work in various units/Schools/Department

Performance Appraisal (PA)

a) How is performance appraisal conducted in you Unit/School/Department and what benefits does it have both the employee and the institution?

Reward systems

a) Are the employees in your Unit/School/Department rewarded for sharing knowledge? If yes what reward systems are in place?

Role of Information and Communication Technologies in Knowledge Retention, Transfer and Sharing

Information technology makes it possible for the connections that enable knowledge transfer, sharing and retention in organisations.

1. How do you use ICTs to retain the institutional knowledge?
2. If your institution has branches separated by geographical dimensions which ICTs are used by employees to share knowledge with workmates in other branches?
3. Does your institution have a website? If so, what type of knowledge is posted on your website?

Appendix 1V: Debriefing form

Title of Project: A Knowledge Retention Model for Institutions of Higher Learning: a case of Kenya Methodist University (KEMU).

Researcher: Evangeline Kagwiria Stephen

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Supervisors: Mrs. Isabel Schellinack-Kelly and Mr. Ngoepe Mpho

Department: Information Science

Contact Information: Email (schelis@unisa.ac.za and ngoepms@unisa.ac.za

Thank you statement: The researcher thanks you for volunteering to participate in the study.

Recap Statement: The purpose of this study is to assess knowledge retention practices at KEMU. The ultimate aim is to develop a model for knowledge retention. Know that the information given here by the participant will remain anonymous and confidential.

Questions/concerns:

In case of any confirmation of any information that is provided by the researcher or there are any questions one can contact the above supervisors for more detailed information.