

**DEVELOPING GUIDELINES FOR A KNOWLEDGE MANAGEMENT POLICY TO ENHANCE
KNOWLEDGE RETENTION AT THE UNIVERSITY OF ZAMBIA**

BY

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DEDICATION

To my wife

Faith Moono-Wamundila

who made a positive contribution to my dissertation through her understanding,
patience and encouragement.

DECLARATION

STUDENT NUMBER: 3649-715-0

I declare that

Developing guidelines for a knowledge management policy to enhance knowledge retention at the University of Zambia is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

.....
SIGNATURE
(MR S. WAMUNDILA)

.....
DATE

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ABSTRACT

The purpose of this study was to investigate how knowledge retention may be enhanced at the University of Zambia (UNZA). A mixed research methodology was employed in the case study design. Data was collected using interviews and questionnaires. Purposive sampling was used to determine participants for the interviews while stratified random sampling was employed for the questionnaire respondents. Out of a population of 435 a sample of 205 was surveyed. The response rate was 60 %.

Findings indicate that UNZA lacked a number of knowledge retention practices that can enable it to retain operational relevant knowledge. In view of these findings, the study concluded by recommending guidelines for the adoption of various knowledge retention practices that could be embedded into UNZA's knowledge management policy.

KEY TERMS: Knowledge management, knowledge retention, knowledge loss, knowledge assessment, knowledge acquisition, knowledge transfer, Knowledge management policy, attrition challenges, Knowledge documentation.

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LIST OF ACRONYMS

ADB	Asian Development Bank
CUCSA	Council of University of California Staff Assemblies
IFAD	International Fund for Agricultural Development
NeLH	National Electronic Library for Health
TVA	Tennessee Valley Authority
UNESCWA	United Nations Economic and Social Commission for Western Asia
UNISA	University of South Africa
UniSA	University of South Australia
UNZA	University of Zambia

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION AND BACKGROUND

This dissertation reports on an investigation on how knowledge retention may be enhanced at the University of Zambia (UNZA). Based on the study, guidelines for a knowledge management policy that focuses on knowledge retention was proposed.

The recognition of knowledge as a strategic organisational resource cannot be over-emphasised (Civi 2000; Halawi, Aronson and McCarthy 2005; Oltra 2005; Zack 1999). Its value in enhancing operational efficiency and effectiveness in organisations can no longer be denied (Choo 1995; DeLong 2004; DeLong 2005; Edvardsson 2003; Musana 2006; Roos and Roos 1997:413). However, most organisations are faced with the problem of knowledge loss and proactive responses such as knowledge retention (KR) are being implemented to retain both tacit and explicit knowledge (DeLong 2002; DeLong 2004; Performance Agents 2006).

UNZA is no exception to the knowledge loss problem. An assessment of the Council Care Taker Committee Report (UNZA Council 2000) and the IOTA Consulting Services (2001) document reveal the availability of the following operational problems related to knowledge retention:

- High staff turnover;
- Inability to retain experienced and qualified staff;
- Lack of explicit routines and procedure manuals;
- Lack of succession planning;
- Lack of sustained leadership; and
- Ineffective information management.

The consequences of the above and other factors such as low salaries usually result in the University being closed, leading to the stoppage of academic and support operations. The negative effect of closures of the University prompted the government to create the Bobby Bwalya Commission in 1997 to inquire into the operations of the University (Republic of Zambia 1998). The Commission warned that “without significant attention being paid to the retention, motivation and commitment of critical staff in the University, quality in the core functions of the University would be in jeopardy” (UNZA Strategic Plan 2002-2006; Iota Consultancy Services 2001:5). This partly explains why the Caretaker Committee of UNZA recommended in 2000 that the University should rationalise its staff to optimum levels. In 2001, the IOTA Consulting Services was hired to conduct a staff and organisation audit (IOTA Consultancy Services 2001:iv, ix). In order to provide effective and efficient services, UNZA recognises that:

in the era of information society and knowledge based economy ...the world of work is being radically redefined, and the University has an obligation to respond to the challenges that this entails (UNZA Strategic Plan 2002 – 2006: 11).

Though the importance of knowledge retention and management is addressed in the strategic plan of the University, my experience at UNZA clearly shows that very little effort has been made by management to put procedures and processes in place that will ensure knowledge retention for operational benefits (UNZA Strategic Plan 2002 – 2006: 11). For instance, there are no guidelines for knowledge management (KM). This research aimed to assist UNZA management in developing guidelines for a KM policy that may enhance knowledge retention.

1.2 HISTORICAL CONTEXT

We live in an information society where world economies are knowledge-based (Kubler and Deluca 2006; Loh *et al.*, 2003; Maponya 2004; Parirokh, Daneshgar and Fattahi 2006). In a knowledge economy, knowledge is viewed as a strategic resource that offers competitive advantage in organisations (Halawi, Aronson and McCarthy 2005; Whelan 2005; Zack 1999). Thus, the importance of managing

knowledge has influenced organisational management through management practices and theories such as business process re-engineering, the resource-based and the knowledge-based theories of the firm (Bellinger 2004; Fahy and Smithee 1999; Halawi, Aronson and McCarthy 2005; Whelan 2005). Consequently, continued inquiry to enhance efficiency and effectiveness in organisational operations in the last decade, has seen the emergence of another management approach called KM. Kruger and Snyman (2005a) and Davenport and Prusak (1998) pointed out that although organisations have realised the value of knowledge, not many had actually started managing knowledge efficiently and effectively. This view is also held by Ngoc (2006) as the author notes that managing knowledge for value creation in organisations is still a “management concern”. While noting that the value of knowledge in organisations has become obvious, Perez-Soltero *et al.*, (2006) equally echoes similar sentiments for the need to manage knowledge as expressed by Davenport and Prusak (1998), Kruger and Snyman (2005a) and Ngoc (2006). Perez-Soltero *et al.*, (2006) indicate that despite the fact that other organisational operations like “marketing, finance, sales or even supply chain” are well mastered, road maps for effective management of knowledge are still being investigated. Parent and Beliveau (2007) argue that “until now (2007), few ideas have been presented on how to improve learning from experience and how to capture and disseminate knowledge in organisations”.

1.3 STATEMENT OF THE PROBLEM

It is argued that the core business of universities is to create, manage and transfer knowledge (Kubler and Deluca 2006; Oni 2000). However, according to Ratcliffe-Martin, Coakes and Sugden (2000) in Maponya (2004:8), generally universities fail to recognise the importance of knowledge as a strategic resource. Besides this observation, universities are currently operating in the knowledge era and Petrides and Nodine (2003:10) argue that educational organisations are:

adaptive, social systems where people cooperate to achieve common purposes...[they]...grow and revitalise themselves through the knowledge they

create, their procedures for passing that knowledge to others and the exchange and relationships they foster among people.

Thus, universities must focus on retaining their institutional knowledge, that is, both tacit and explicit. According to Kidwell, Vander Linde and Johnson (2000:31) and Al-Hawamdeh (2002) the retention and management of knowledge is of benefit to Universities in the following areas:

- better decision-making capabilities;
- reduced 'product' development cycle time (for example curriculum development and research);
- improved academic and administrative services;
- reduced costs;
- preservation of corporate memory; and
- combating staff turnover by facilitating knowledge capture and transfer.

Notwithstanding the benefits, concern over the retention of knowledge world over has become apparent. Corporate entities including universities are instigating knowledge retention initiatives (Kidwell, Vander Linde and Johnson 2000; Loh *et al.*, 2003; McGregor 2006; Seale 2005; University of California 2006). In the United Kingdom (UK), the University of Edinburgh is an example of an institution that has instigated knowledge retention initiatives (University of Edinburgh 2005). Threats by an aging workforce, shrinking talent pool and demographic changes are cited as drivers for knowledge retention (DeLong 2004; McGregor 2006; University of California 2006).

Similar concerns are evident in Africa where brain drain is common (Cohen 2002; Dovlo 2003; Tapsoba 2000; Wadda 2000). Ayuk and Jones (2005), Kubler and Deluca (2006), Mushonga (2005), Oni 2000, Panapress (2001), Seale (2005) and the World Bank (1995) identify the following knowledge retention related problems that affect performance of African universities:

- Brain drain;
- Low levels of new entrants;

- Inability to attract and retain viable staff;
- Aging workforce;
- Inefficient and ineffective operational approaches;
- Shortage of skilled leadership; and
- Lack of management capacity.

UNZA shares similar concerns with other African universities (IOTA Consultancy Services 2001). However, the institution has a unique situation involving staff being employed on two conditions of service. Permanent and pensionable conditions for employees recruited before 2000 and contract condition for employees recruited after 2000. These conditions have implications on knowledge retention based on the following assertions:

- (a) Permanent and pensionable staffs have operational relevant institutional knowledge.
- (b) Contract staffs are assets for continuity who require integration and nurturing in University operations and after working for some time become fully knowledgeable of University operations.

However, based on the above assertions, and cognisant of current knowledge retention related problems faced by UNZA, there is little doubt that UNZA loses knowledge in the following ways:

- staff resignations;
- staff retirements, 46 % (489 out of 1054 members of staff) would be eligible by 2011;
- undocumented best practices, routines, business processes and procedure/work manuals; and
- untimely death of staff.

1.3.1 Problem Formulation

As can be noted from the preceding section, the problem faced by UNZA is the loss of operational relevant knowledge through attrition, vis-à-vis resignations and

retirements. This problem is further compounded by the lack of documented best practices, routines, business processes and procedure/work manuals.

Knowledge attrition challenges through retirements and resignations are generally accepted to cause loss of tacit knowledge in any organisation with consequences including lost potential for innovation and growth, decrease in operational efficiency and effectiveness, and increased costs which in turn affect organisational performance (DeLong 2002; DeLong 2005; Hahn 2006; Padilla 2006; Purdum 2006; Sutherland and Jordaan 2004). The situation is worsened when combined with contract employees as Stovel and Bontis (2002:315) argue that:

the difficulty with contract/contingent workers is that ... [they] require training in the operations and products of the company. However, when the ...season is over, these employees leave the firm and such knowledge and experience are often not retained and leveraged by the firm.

Thus while long serving members of staff may remain loyal to UNZA (IOTA Consultancy Services 2001: ix), contract based workers whose tenure in the University is dependent on the length of the contract (minimum of two years and maximum of four years) may leave at the end of the contract especially that “the high staff turnover [at UNZA] ... is due to poor conditions of service offered by the University” (IOTA Consultancy Services 2001: ix). Based on this fact, it can be argued that while permanent and pensionable employees are depleting yearly through retirements, the University may not be able to retain contract employees, resulting in relevant operational knowledge being lost.

In addition, the above scenario is situated within an era that regards employee mobility as a characteristic of knowledge workers including University employees in the knowledge economy (Crespi, Geuna and Nesta 2007; Deem 2004:111; Stovel and Bontis 2002:320; Sutherland 2005; Sutherland and Jordaan 2004). With employee mobility comes concerns over knowledge workers vesting their loyalty in their skills, qualifications, exposure, career development and employability (Bhawal 2006; Stovel and Bontis 2002:320; Sutherland 2005). Such a stance by employees renders traditional Human Resources Management practices like employee

retention, that is, retention of the actual headcount, insufficient (Buttler and Reche-Tarry 2002; Oltra 2005; Stovel and Bontis 2002; Sutherland 2005). Based on this understanding, the focus of this dissertation is not on retention of headcount, but rather the management and retention of the tacit knowledge rooted in employees as human capital (Auer 2002; Kelleher 2006; Stovel and Bontis 2002). The aim of effective knowledge management is to ensure that, even if people might leave, UNZA will still retain its relevant operational knowledge (tacit and explicit) to support the achievement of its mission viewed through its motto of “service and excellence”.

Further, the need to retain knowledge at UNZA is also supported by knowledge management initiatives done by both corporate organisations and learning institutions among them including, the Asian Development Bank, Best Buy, Tennessee Valley Authority, University of California and the University of South Australia (UniSA) (Asian Development Bank 2004; Best Buy 2002; Boom 2005; Tennessee Valley Authority 2005; University of California 2006, UniSA 2007). These institutions use knowledge retention and management initiatives to address similar situations, that is, those related to knowledge loss caused by employee attritions and undocumented work processes, a problem that most African universities are facing (Mushonga 2005; Seale 2005).

In order to understand the stated problem, the implications of the above situation at UNZA, that is, permanent and contract staff vis-à-vis resignations and retirements and how they relate to knowledge management in general and knowledge retention in particular, this dissertation treated knowledge management as the effective management of the “organisation’s intellectual capital”, comprised of human capital and structural capital (Auer 2002:1; Bontis 2000:5; Skyrme 2004; Stovel and Bontis 2002:303).

Following Auer (2002:1), Skyrme (2004), Stovel and Bontis (2002) and Wiig (1997:401), the first strand of this research project considered human capital as “the cumulative tacit knowledge of employees within a firm”. This type of

knowledge is also viewed as the procedural knowledge (Nickols 2004:4). Further, tacit knowledge is referred to as the knowledge within an employee's head, the kind of knowledge that ensures an employee's ability to carry out a task effectively (Kidwell, Vander Linde and Johnson 2000:29; Van Den Bosch and Van Wijn 2000:11).

The second strand of this dissertation considered structural capital as explicit knowledge, "that which remains when people go home at night" (Bontis 2000:5; Skyrme 2004, Wiig 1997:401). Thus, notwithstanding the debate that centres on information management and knowledge management with regard to explicit knowledge (Bouthillier and Shearer 2002; Skyrme 2004), it was in the interest of this dissertation that undocumented best practices, routines, policies, business processes and procedure/work manuals were viewed as explicit knowledge in the form of declarative knowledge (Choo 1995; McCall 2006; Nickols 2004:4; Shanks and Tay 2001). This was because while information management focuses on "delivery and accessibility of information" as argued by DeLong, Davenport and Beers (1997) in Al-Hawamdeh (2002), explicit knowledge as structural capital is viewed as "support mechanisms for employees to achieve optimum job performance and overall organisational performance" (Bontis (1998) in Stovel and Bontis 2002; Bontis 2000). Empirical evidence also confirms that overlaps exist between document management, information management and knowledge management (Chen, Snyman and Sewdass 2005). Knowledge portals and knowledge bases have been cited as facilitators for explicit knowledge (Peltier and Meingan 2002). This view is equally supported by Morris, Snell and Wright (2006:10) that:

organisational capital - the institutionalised knowledge and codified experience residing within an organisation ... include an organisation's reliance on manuals and databases to preserve knowledge, along with the establishment of structures, processes and routines that encourage repeated use of this knowledge. As an integrative mechanism ... [it] allows the firm to preserve knowledge as incoming employees replace those leaving.

Based on the above, it was important that this dissertation considered an integrative approach for both tacit and explicit knowledge. These knowledge types are complementary in nature and they co-exist. To achieve either of them, some conversion must take place (Bouthillier and Shearer 2002; Gertler 2001:76, 79; Nonaka and Takeuchi (1995) in Civi (2000); Skyrme 2004; Swart and Pye 2002:3, 5).

The above clarification of the focus of this research project was seen to be in line with current research in information science where both tacit and explicit knowledge are being investigated (Choo 2000; Crowley 2001; Kruger and Synman 2005a; Maponya 2004; Parirokh, Daneshgar and Fattahi 2006; Rui (1999) and Shanhong (2000) in Parirokh, Daneshgar and Fattahi 2006; Squier and Synman 2004; White 2004; Xiaoping (1999).

Like most social sciences, it is argued that knowledge management as a discipline is interdisciplinary and due to its complexity, it is addressed by various scholars (Edvardsson 2003; Swart and Pye 2000). As could be observed from Apistola (2002), Bhojaraju (2005), Bontis (2000), Bouthillier and Shearer (2002), Coffey, Eskridge and Sanchez (2004), Edvardsson (2003), Goh (2004), Koenig (1997) in Bouthillier and Shearer (2002), Liebowitz (2004), Oltra (2005), Prusak (1999), Sage (2002), Shanks and Tay (2001), Skyrme (2004), Swart and Pye (2002) and Zaraga and Garcia-Falcon (2003), knowledge management draws its scope, tools, terminologies and techniques from other disciplines including:

- Librarianship;
- Library and Information Science;
- Information Science/Management;
- Human Resources;
- Strategic Management;
- Management;
- Behavioural Science;
- Economics;

- Psychology;
- Sociology;
- Philosophy;
- Information Technology; and
- Computer Science.

Given the above scenario, it is only natural that certain aspects of managing organisational knowledge (tacit and explicit) can be viewed as related, but not limited to any of the above disciplines.

1.3.2 Significance of the problem

The need to retain organisational knowledge is a well known concern for most organisations including universities (UniSa 2007). It is in fact argued that the ability to retain organisational knowledge is a key characteristic for a successful organisation in the knowledge economy (Sutherland 2005). The magnitude of the problem is apparent considering the volume of research efforts aimed at addressing knowledge retention within organisations (AARP 2006; AARP 2007; Davidson, Lepeak and Newman 2007; Knowledge and Innovation Network 2004; Lahaie 2005; Pitt-Catsoupes *et al.*, 2007; Queensland Government 2005). Thus, this research was an effort to retain knowledge (tacit and explicit) within UNZA in such a manner that it will enhance efficiency and effectiveness in carrying out University operations based on the established guidelines for a knowledge management policy to enhance knowledge retention. As such the recommended guidelines for the policy were seen as a solution that would help mitigate knowledge loss at UNZA through formally well established practices for knowledge assessment, acquisition and transfer. Once established, such practices would help in the preservation of knowledge at UNZA.

The problem was studied in information science basically due to the role of information professionals/librarians in knowledge management which has become a reality (Ajiferuke 2003; Anderson 2002). In fact, Skyrme (2004) challenge that:

Information professionals must consistently connect to corporate “hot buttons” and understand how their output is used to support business objectives and priorities. Simply serving people who make/ request information from you is insufficient. It may even be irrelevant, if there is no clear link to a business outcome. Ignore the strategic thrusts of your organisation and you could find yourself outside it!

Singh (2007) echoes similar sentiments to those expressed by Skyrme (2004) above as she notes the following:

... in the information and knowledge-based society, information professionals are expected to be more dynamic and competent to deal with the influx of information and manage organisational information resources and intellectual assets....For this, information professionals need to develop highly dynamic knowledge management skills and strategies. They should have a clear understanding of various knowledge management processes such as knowledge creation, capture, retention, transfer and sharing, in addition to having the analytical ability to identify and leverage existing knowledge.

1.4 PURPOSE OF THE RESEARCH

The purpose of the research was to design guidelines for a knowledge management policy to enhance knowledge retention at UNZA.

1.4.1 Research Objectives

- i. To determine and assess knowledge management/retention policies by higher learning institutions.
- ii. To determine what is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa.
- iii. To establish tools, methods and techniques for knowledge assessment, acquisition and transfer.
- iv. To identify knowledge assessment practices at UNZA.
- v. To identify knowledge acquisition practices at UNZA.
- vi. To identify knowledge transfer practices at UNZA.
- vii. Based on objectives i to vi, to design guidelines for knowledge retention at UNZA.

1.4.2 Research Objectives, Research Questions and Possible Sources of Data

The research objectives, questions and possible sources of data are summarised at Appendix I.

1.4.3 Scope, Limitations and Exclusions

The study covered areas of concern necessary for coming up with a knowledge management policy that focused on knowledge retention. It, therefore, provided an analysis of emergent trends that call for the need to manage university knowledge resources. The investigation also proposed components that should be in a knowledge retention programme. Thus, knowledge retention guidelines and framework were recommended.

However, this research did not provide an implementation plan for a knowledge retention programme within UNZA. This was due to the fact that the implementation of any change management programme like knowledge management requires time and an understanding of the environment within which such a programme must be implemented (Gillingham and Roberts 2006). For Raub and Wittich (2004), implementation of knowledge management “requires aligning the contributions of key organisational actors, promoting the development of knowledge networks and providing support by delivering a purposeful message”. The understanding also required for knowledge management include organisational culture and the need for a well established information communication technology (ICT) infrastructure enablers, that need detailed investigation (Gillingham and Roberts 2006; Suresh and Egbu 2006).

Issues like knowledge sharing border around organisational culture and thus, are not easily tackled without establishing, for instance types of communities that exist within a given institution. Based on a research that investigated key issues for implementing knowledge capture initiatives in the UK Construction Industry, Suresh and Egbu (2006) found that the creation of an appropriate culture for twenty-three of the twenty-six investigated organisations was a challenge. This

challenge was mainly “due to ‘knowledge-power syndrome’, a blame culture, friction between staff, lack of trust and lack of motivation” (Suresh and Egbu 2006).

Similarly, the use of ICTs in universities is wide. As such, when implementing a knowledge management initiative, one needs to establish the various systems available and their use before determining the ones that could be more helpful in knowledge retention programmes. For instance, Gillingham and Roberts (2006) recommended that when implementing a knowledge programme, the information technology aspect must, among other issues ensure the following:

- Standardise information systems;
- Set up knowledge repositories; and
- Implement powerful search engines.

In a nutshell, the implementation of a knowledge management initiative demands the availability of a systematic approach. As proposed by the United Nations Economic and Social Commission for Western Asia (2003), the following aspects should be considered as what should constitute an implementation methodology for knowledge management:

- (i) Knowledge vision and strategy;
- (ii) Knowledge architecture and content;
- (iii) Knowledge infrastructure; and
- (iv) Knowledge culture.

Future research could look at the creation of an implementation framework for knowledge retention within a university.

1.4.4 Significance of the Research

The benefits that were anticipated from the findings of the study were viewed to be twofold:

- the determination of both the actual practices and gaps in the knowledge retention activities performed within UNZA; and

- the recommendation of the core aspects that would be required to be incorporated in the various knowledge retention practices at UNZA in form of guidelines for the knowledge management policy aimed at enhancing knowledge retention.

Further, recognising the fact that UNZA is an African university, other African universities could also benefit if they adapted the recommended knowledge retention guidelines.

1.5 KEY CONCEPTS

The dissertation was supported by various theoretical concepts which are described below.

1.5.1 Information

Several writers have endeavoured to define the term information. According to Lundu (1998:45), information is data, signals, facts, views, opinions, ideas, events, news of significance, able to influence people's actions, behaviour and decisions as they interact with others. The value or relevance of such information is determined by the recipient who is in a position to utilise it either for personal benefits or for the benefit of others. Accordingly, Stone (2002:59) and Turban, Mclean, and Wetherbe (2003:45) indicate that information is data that has been converted into a form that is meaningful for the accomplishment of some objective. For Neuman, Bruinsma and Flor (2003):

information is any tagged data, which is discrete, definite, and complete enough to be treated as an attribute. When you enter a query in your database, the result of that query is information.

Based on the above, within a university perspective, information can be regarded as any record (electronic or hardcopy) or people's expressed ideas of value that can be processed and accessed by others for their benefit and for the benefit of the university as a whole. The purpose of such information is to bring about awareness and facilitate decision-making while conducting university duties.

1.5.2 Information Management

According to Choo (1995), information management is “the capacity to harness the organisation’s information resources and information capabilities to energise organisational growth”. Selva, Wolfson and Handy-Bosma (2005) emphasise that information management encompasses data and content management, which provides a means to access, maintain and manage, analyse and integrate data and content across various information sources.

For purposes of this dissertation, information management is defined as an activity that relates to all processes and activities involved in the administration of information. It refers to how for instance, a university controls, processes, stores and disseminates its internal and external acquired information for the benefit of the university.

1.5.3 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.

According to Civi (2000), knowledge is the “intellectual capital of a firm”. Yet still, Yang (2004) defines knowledge as:

the boundaries encompassing job related entities (such as operational thoughts, behaviours, standard operating procedures, organisational routines, and competitor and customer knowledge) and individuals’ insights and their past working experience which is relevant to their current job.

As demonstrated above and viewed from a university perspective, knowledge is an intellectual asset that involves the state of being informed and the ability to turn what is known into valuable action aimed at achieving a university’s mission. Such knowledge includes employees’ accumulated skills, experience as well as the sum total of the organisational routines, policies, procedures, best practice, processes

and documents within the university which serve as governing rules and point of references for performing duties.

1.5.4 Explicit Knowledge

Most writers on knowledge management are more or less agreeable that one of the two broad dimensions of knowledge is explicit knowledge (Sanchez 2005). Kim (2000) views explicit knowledge as “rule-based knowledge that is used to match actions to situations by invoking appropriate rules”. According to Tagger (2005), explicit knowledge refers to:

knowledge that is learned and is consciously accessible by the holder. It may refer to knowledge that has been learned through explicit instruction or recitation, or to a skill acquired through replication.

As provided above, explicit knowledge refers to that type of knowledge that guides the conduct of duty performance. Within a university perspective, explicit knowledge includes any formal identified routines, processes, work manuals and documents that constitute declarative knowledge. Such knowledge aids the performance of employees in order to achieve efficient and effective operations, (Morris, Snell and Wright 2006:6).

1.5.5 Tacit Knowledge

The other broad dimension of knowledge is tacit (Sanchez 2005). According to Kim (2000), “tacit knowledge consists of the hands-on skills, best practices, special know-how, heuristics, intuitions and so on”. As for Chisholm and Holifield (2003), tacit knowledge is “silent knowledge with implicit learning involving expertise within an organisation which has not been written down or formally expressed but is nevertheless essential to the effective operations of that organisation”. Tagger (2005), views tacit knowledge as “a prime characteristic of an expert who can act, work and make judgments without having to directly reference the declarative knowledge behind the decisions. The expert works without any explicit theory as to why they work in that particular way, they just perform skilfully without any serious deliberation or hesitation”.

It is evident that tacit knowledge refers to the accumulative know-how that employees possess based on their past experience. Such knowledge is internalised within the individual and accounts for the ability to perform a function well without necessarily having to refer to how such a function must be performed. The procedure about how to perform such a task is stuck in the memory of the worker.

1.5.6 Knowledge Assessment

According to Musana (2006), knowledge assessment “involves asking a transparent account of the knowledge resources existing in the organisation”, with a view to enable an organisation “know” the knowledge resources that it possesses and be able to align its “strategic goals with the available knowledge resources”. Dixon (2000) indicates that knowledge assessment is a “careful and systematic examination of an organisation” to identify an organisation’s knowledge resources and determine how they are being “leveraged”. Viewed as an audit, Hylton (2002) defines knowledge assessment as “a systematic and scientific examination and evaluation of the explicit and tacit knowledge resources of a company” with a view to establish threats associated with loss of corporate knowledge or indeed benefits that accrue from the available knowledge resources.

Within the university perspective and based on the above given definitions, it is clear that knowledge assessment is an investigation of corporate knowledge whose aim is to understand and establish an organisation’s capabilities and related competencies. Such capabilities and competencies are for purposes of enhancing and maintaining efficiency and effectiveness within the organisation’s operations. Once the organisation understands its abilities, it can ably identify threats to its core competencies and abilities, and therefore put in place proactive measures to ensure continuity with effective and efficient operations.

1.5.7 Knowledge Acquisition

Pjb (2001) defines knowledge acquisition as a “process whereby enterprises define, acquire the skills, know-how and strategic intelligence necessary to carry out day-to-day activities”. Based on tacit to explicit knowledge acquisition

perspective, Liou (1990) defines knowledge acquisition as the “process of extracting, structuring, and organising knowledge from human experts so that the problem-solving expertise can be captured and transferred into a computer-readable form”. From a classification perspective of tacit and explicit knowledge, Soo, Midgley and Devinney (2002), stress that knowledge acquisition involves an organisation’s external interactions and internal practices “such as employee interactions, databases systems, and training and development”.

Yet still Kidd (1987) in Wagner (1990) and Milton (2003) view knowledge acquisition as a practice that involves knowledge collection, elicitation, modelling, analysing, validation and interpreting the ‘knowledge that a human expert uses when solving problems’ in “knowledge engineering or knowledge management projects”.

As given above, 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.

1.5.8 Knowledge Transfer

According to Newman and Conrad (1999), knowledge transfer “refers to activities associated with the flow of knowledge from one party to the other. This includes communication, translation, conversion, filtering and rendering”. Lochhead and Stephens (2004) stress that Knowledge transfer “refers more specifically to processes that achieve the effective sharing of knowledge among individuals, business units, departments or even different branches”. As presented by Bou-Llusar and Segarra-Cipres (2006:105), “knowledge transfer refers to the exchange of knowledge between units within a firm (internal transfer) or between different firms (external transfer)”.

As provided above knowledge transfer refers to how knowledge flows in organisations, departments or indeed sections and units. Such knowledge flows

may entail interactions of individuals or indeed an individual making reference to codified knowledge.

1.5.9 Knowledge Retention

According to Newman and Conrad (1999), knowledge retention “includes all activities that preserve knowledge and allow it to remain in the system once introduced”. DeLong (2004:23) indicates that knowledge retention “consists of three activities – knowledge acquisition, storage and retrieval”, where:

Knowledge acquisition describes the practices, processes and routines used to move knowledge into a state where it is kept available for future use. Storage represents the processes and facilities used to keep knowledge and information, [and] retrieval includes behaviours, routines, and processes used to access and re-use information and knowledge...

To Kull (2005), knowledge retention is:

a subset of knowledge management and is a process whereby an organisation uses its collective intelligence to accomplish its objectives [by] managing the social, cultural, and technological environment where information, expertise and insight converge [and] learning from others through systematic, enterprise-wide approaches, exploiting ways to share and re-use existing knowledge, exploring ways to recombine knowledge to discover best practices and innovate better practices and transforming knowledge among tacit, implicit, and explicit forms.

Based on the above definitions, knowledge retention can be defined as an activity directed at retaining and making available valuable knowledge necessary for sustaining operations efficiently and effectively. It also serves as a mechanism for reducing errors, inefficiencies, redundancies, re-inventions and minimising costs associated with knowledge loss.

1.5.10 Knowledge Management

Knowledge management is a management approach, interdisciplinary in nature and has various facets as its definition depending on one’s background. There is however, consensus on its purpose as that of effective utilisation of knowledge for improved organisational performance (Hinton 2003).

According to Newman and Conrad (1999), knowledge management “is a discipline that seeks to improve the performance of individuals and organisations by maintaining and leveraging the present and future value of knowledge assets”. Bhojaraju (2005:37) defines KM as the “process of gathering, managing and sharing employee’s knowledge capital throughout the organisation”. Still, Lahaie (2005) views KM as “creating and maintaining the optimum environment to retain corporate knowledge”. Based on its integrative nature, Hinton (2003) defines knowledge management as “a collective term for the facilitation of improvements to an organisation’s capabilities, efficiencies and competitive advantage through the better use of its individual and collective knowledge...resources”.

Knowledge management is an integrated approach to manage both tacit and explicit knowledge for purposes of meeting desired organisational goals. The knowledge is strategically leveraged to enhance performance in organisational operations.

1.6 RESEARCH APPROACH AND DESIGN

This section briefly addresses the research story as employed in this study. Chapter three of this study has been devoted to show a detailed report of the research methodology employed in this study.

1.6.1 Research Approach

Research approaches can be distinguished in many ways and one such feature used to distinguish research is by classifying it as either quantitative or qualitative (Myers 1997). Thus, for the purpose of this study, a mixed research approach (mixing both qualitative and quantitative research approaches) was employed. The rationale behind the use of qualitative research on one hand and as a motivation for this dissertation is best described by Anderson and Arsenault (1998:119,134) as follows:

Qualitative research is a form of inquiry that explores phenomena in their natural settings and uses multiple methods to interpret, understand, explain and bring meaning to them...Qualitative research accepts that people know themselves best

and can describe, interpret and talk about their own environment. It is an inductive form of inquiry that accepts the researcher as the main data collection instrument and acknowledges that he or she is attached to a set of “baggage” that shapes and informs the researcher’s opinions, attitudes and ways of looking at phenomena and interpreting findings. It is also a form of research concerned with the context. Understanding the research environment and all its political, social, psychological, economic and cultural dynamics is vital to producing rich, useful, valid findings.

The use of qualitative research methods are a dominant feature in knowledge management. Citing Peshkin, Leedy and Ormond (2001), Squier and Snyman (2004) indicate that qualitative research methods serve among other purposes the following:

- they can reveal the nature of certain situations, settings, processes, relationships, systems or people;
- they enable the researcher to gain insights about the nature of a particular phenomenon, develop new concepts or theoretical perspectives about the phenomenon and discover the problems that exist within the phenomenon;
- they allow a researcher to test the validity of certain assumptions, theories or generalisations within real-world contexts; and
- they provide a means through which a researcher can judge the effectiveness of particular practices or innovations.

On the other hand, quantitative research was considered for this study based on the understanding that it provides “high level measurement precision and statistical power” (Matveev 2002). For instance, this study used a survey method to solicit information on various knowledge retention challenges and stemming practices which were necessary to verify statistically.

Research that blends both qualitative and quantitative approaches is called mixed research (Johnson and Christensen 2004). In view of the above virtues associated with qualitative and quantitative research approaches, their blending has been seen as an option that seeks to minimise on their individual short-comings and

enhance confidence levels for the research findings (Creswell 2003; Johnson and Christensen 2004; Matveev 2002).

1.6.2 Research Design

There are many qualitative and quantitative research designs including: action research; grounded theory; ethnography; phenomenology and case studies, (Myers 1997; Tellis 1997; Hancock 2002). However, this research employed the case study design and according to Key (1997), case studies are:

detailed investigations of individuals, groups, institutions or other social units...a case study attempts to analyse the variables relevant to the subject matter. The principle difference between case studies and other research studies is that the focus of attention is the individual case and not the whole population cases. ...in a case study the focus may not be on generalisation but on understanding the particulars of that case in its complexity.

Hancock (2002) also supports the views expressed by Key (1997) above and observes that the value of case studies is seen through its ability to facilitate for “in-depth analysis” of the study unit. Further, Hancock (2002) stresses the fact that case studies “offer a richness and depth of information not usually offered by other methods”.

Case studies have been used to study different issues in universities. For instance, Tellis (1997a) informs of a case study conducted at Fairfied University to assess the introduction of information technology in the University. Similarly, knowledge management research also involves case studies as research designs (Basu and Sengupta 2007; Nguyen, Smyth and Gable 2004).

1.6.3 Data Collection Methods

Qualitative case studies make use of different methods for data collection. The data collection methods include among others the reviewing of documents, interviews, as well as direct and participant observation (Britten 1995; Creswell 2003:179; Marshall and Rossman 1995; Tellis 1997). In this dissertation, the mixed method approach was used to enhance the validity of the study. However, the

qualitative paradigm was dominant (Creswell 2003). Thus, the following data collection methods were used:

- i. Review of documents/literature;
- ii. Interviews; and
- iii. Questionnaire.

1.6.3.1 Document/Literature Review

Document review also referred to as, documentation (Tellis 1997b; Hancock 1998) or literature survey (Singh 2007) is the analysis of published and unpublished documents, company reports, articles and memos of relevance to the issue being investigated. The rationale for such an analysis is to establish patterns of interest within the area of study (Tellis 1997a; Myers 1997). Thus, in this study at the University of Zambia, reviewed documents served as sources of information for the following objectives of the study:

- i. Determination and assessment of other knowledge management/retention policies by other institutions;
- ii. Determination of what is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa; and
- iii. Establishment of tools, methods and techniques for knowledge assessment, knowledge acquisition and knowledge transfer.

Given the above objectives, literature analysis provided a reference point for purposes of comparison in available knowledge management and retention practices for UNZA, other learning institutions and other organisations. Similarly, literature analysis also helped compare the following practices:

- (a) Knowledge assessment;
- (b) Knowledge acquisition; and
- (c) Knowledge transfer.

1.6.3.2 Interviews

In order to identify UNZA practices on knowledge assessment (including loss of critical knowledge), knowledge acquisition, and knowledge transfer, face-to-face

structured open-ended interviews were used for data collection. According to GAO (1991), structured interview as a data collection instrument (DCI), involves “evaluators asking the same questions to numerous individuals or individuals representing numerous organisations in a precise manner”. In addition, where structured interviews are open ended, they offer the ability to “gather, spoken ideas, information, and opinions from participants” and is best suited for small samples of respondents (Monroe 2007).

Thus the use of structured open-ended interviews was chosen to ensure consistence in the data collected. An interview guide was created where questions relating to the study objectives were raised. The advantages of using an interview guide as suggested by Nguyen, Smyth and Gable (2004) include “study reliability while the freedom to pursue unexpected themes capitalises on the strengths of the case study”.

In this study, the data for the following objectives were gathered through interviews (see Table 1):

- i. To identify knowledge assessment (including loss of critical knowledge) practices at UNZA;
- ii. To identify knowledge acquisition practices at UNZA; and
- iii. To identify knowledge transfer practices at UNZA.

1.6.3.3 Questionnaire

Questionnaires are another data collection tool in both qualitative and quantitative research (Johnson and Christensen 2004). Thus, for purposes of further determining whether UNZA employees (Lecturers) were involved in one way or another, in knowledge assessment, knowledge acquisition, and knowledge transfer, a questionnaire was administered to Lecturers.

After the literature analysis, conducting of interviews and the administration of the questionnaire, comparisons and analyses of findings based on the objectives of the study were made. It was from the comparisons and findings that similarities

and gaps on what was investigated as in the objectives of the study were identified and consequently used to design guidelines for a knowledge retention policy to enhance knowledge retention at UNZA.

1.6.4 Unit of Analysis

The units of analysis for this study were senior management staff and Lecturers. While senior management staffs were interviewed, data was collected from the Lecturers using questionnaires.

1.6.5 Study Case

The study area was UNZA. Besides the central administration, UNZA has nine Schools and three Directorates. In addition, there are other support units like the Library, the Technology Development and Advisory Unit and the Clinic.

1.6.6 Sampling Procedure and Study Sample

According to Marshall and Rossman (1995), “well developed sampling decisions are crucial for any study’s soundness”. Creswell (2003:185) notes that “the idea behind qualitative research is to purposively select participants or sites (or documents or visual materials) that will best help the researcher understand the principles and research questions” Since this study employed mixed methods research, the sampling methods used for this study were purposive sampling and stratified random sampling.

Purposive sampling is a non-parametric sampling technique in which the researcher purposefully identifies respondents as sources of data. The rationale for using purposive sampling is to select key informants deemed to have information on what the study is trying to address. According to TESOL (2007) case study research usually utilises purposive sampling. Interviews were held with senior management staff deemed to be relevant to the study (See Table 3.2).

Stratified random sampling involves the division of a population into mutually exclusive groups (called strata) and then, using either a simple random sample or

a systematic sample, a desired number of participants is selected from each stratum (Johnson and Christensen 2004:207). Thus, for the questionnaire, a list of Lecturers was obtained from the Computer Centre. Based on the list, lecturers were picked from the various schools using stratified random sampling.

1.7 ORGANISATION OF THE DISSERTATION

This dissertation has six chapters. Chapter One which is the introduction presents the background to the study, statement of the problem, the purpose of the research, theoretical concepts used in the study as well as the research approach, design and methodology used in the dissertation.

The second chapter is a detailed presentation of the need for knowledge retention. It sets out by presenting the value of knowledge in organisations, approaches that can be used to manage knowledge and further presents proposed components of a knowledge management policy with focus on knowledge retention. The components include:

- Knowledge assessment;
- Knowledge acquisition; and
- Knowledge transfer.

The chapter further presents an analysis of drivers for knowledge retention and provides examples of university operations in which knowledge management has been utilised. Examples of knowledge management policies and strategies adopted in both the corporate sector organisations and universities are also presented. The third chapter presents a detailed research approach and design.

The fourth chapter presents the actual case study in form of findings of the study at UNZA. The fifth chapter presents an interpretation and discussion of the findings in relation to the aim and objectives of the study. The sixth chapter constitutes the recommendations in form of guidelines and a framework for a knowledge management policy to enhance knowledge retention at UNZA. The chapter also provides the summary of the study and suggestions for future research.

1.8 SUMMARY OF CHAPTER ONE

This chapter provided an overview of the dissertation. It also provided the context within which the study was determined. It also presented 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, Chapter Two, presents justification for retaining organisational knowledge and analyses practices for a knowledge management policy with focus on enhancing knowledge retention. The chapter also presents examples of knowledge management and retention policies and strategies in universities and other institutions.

CHAPTER 2

A SITUATIONAL ANALYSIS OF THE COMPONENTS, DRIVERS, POLICIES AND STRATEGIES FOR KNOWLEDGE RETENTION IN SELECTED UNIVERSITIES AND OTHER INSTITUTIONS

2.1 INTRODUCTION

This chapter has three sections. The first section endeavours to show the strategic importance of managing knowledge in organisations. It tries to show that knowledge is not only managed for its sake but to foster operational benefits. The section sets out by stressing the value of knowledge within an organisation and the different approaches used in its management. It then provides a review of proposed components of knowledge retention.

The second section presents the rationale behind the retention and management of knowledge in organisations in general and universities in particular. It first endeavours to show the drivers of knowledge retention and cites institutions that have knowledge retention and management programmes.

The third section presents the rationale for creating policy as a way of effecting control and providing direction on efforts to manage knowledge. A review of knowledge retention for various institutions is also provided.

2.2 THE VALUE OF KNOWLEDGE

In the beginning there was land, labour and capital for business sustenance (Hans-Dieter 2002; Hoffman 2005). Then the importance of information came along, (Symons 2004). Now it is knowledge! (Mohrman and Finegold 2000). From time immemorial, knowledge has been an input in every organisational process. However, what has been lacking was a formal recognition of ways to explicitly

manage knowledge as a resource (United Nations Economic and Social Commission for Western Asia (UNESCWA) 2003). Through man's quest for advancement came the knowledge economy. In the knowledge economy, organisations are faced with many challenges as noted by DeNisi, Hitt and Jackson (2003):

In the twenty-first-century landscape, firms must compete in a complex and challenging context that is being transformed by many factors, from globalisation, technological development, and increasing rapid diffusion of new technology, to the development and use of knowledge... This new landscape requires firms to do things differently in order to survive and prosper.

As a solution to the above challenges, DeNise, Hitt and Jackson (2003) stresses the indispensability of managing knowledge-based resources as a source of competitive advantage, as observed below:

...many jobs require people to think, plan, or make decisions, rather than to lift, assemble, or build. This kind of work requires both tacit and explicit knowledge... and the ability to apply that knowledge to work.

Knowledge based resources include all the intellectual abilities and knowledge possessed by employees, as well as their capacity to learn and acquire more knowledge. Thus knowledge-based resources include what employees have mastered as well as their potential for adapting and acquiring new information. For several reasons, these resources are seen as being extremely important for sustaining competitive advantage in today's environment.

Still re-emphasising the value of knowledge, Mohrman and Finegold (2000) cite BP Amoco, the U.S Army's Centre for Army Lessons Learned and Hewlett-Packard as organisations that have utilised and appreciated the value of knowledge as a competitive resource. Based on these examples, Mohrman and Finegold (2000) contend that:

In today's highly charged competitive environment, companies have to make their knowledge count. They can't afford to recreate the same knowledge over and over again in different parts of the organisation. They have to link their employees to the best knowledge available - and then apply their talents to generate and use knowledge in ways that keep the company out in front.

The above value placed on knowledge is also echoed by Morley (2007). Following the above argument, the value of knowledge in organisations is therefore, a matter of concern for most institutions. This is very true for learning institutions where most of the functions performed are knowledge-intensive as opposed to physical strength (Dewe and Wright 2007; Tippins 2003:339). There is a definite benefit for having a focused attention to managing organisational knowledge. For instance, Mohrman and Finegold (2000) argue that:

Managing knowledge effectively has a clear pay-off in the form of increased organisational effectiveness. ...investment in knowledge management activities results in greater effectiveness in generating and incorporating knowledge and in making improvements to the way the company functions. Knowledge management activities enhance the ability of the company to embed knowledge in its products and processes and continually increase the overall company capability. Units that better incorporate and generate new knowledge and apply and incorporate knowledge in improved processes have higher levels of overall business effectiveness (including financial and competitive performance, customer satisfaction, speed and quality).

As determined by North and Hornung (2003), managing knowledge in an organisation has obvious, possible benefits in form of improvements to business processes, employee and customer satisfaction. They also indicate that, to some extent, financial benefits are also possible in terms of “higher market shares, increased sales, a better analysis of risks and a reduction of administration costs”. However, at the time of their study in 2002, it was difficult to determine the financial benefits as the studied organisations were not yet familiar with “valuation of Knowledge management activities” (North and Hornung 2003). In the domain of business processes (North and Hornung 2003), the benefits for managing knowledge are visible in form of:

- Acceleration of processes and better transparency of knowledge;
- The reduction of errors;
- Avoidance of redundancies;
- Time saving in doing routine work; and
- A better re-use of internal knowledge.

On benefits relating to employee satisfaction, North and Hornung (2003) point out the following:

- Improved team work;
- Increased motivation;
- Shorter training periods;
- Development of competence;
- Increase of personal market value; and
- Enhancement of personal knowledge.

In summation, Dewe and Wright (2007) suggest that managing knowledge in a university has the following benefits:

- More informed decision-making;
- Avoiding wasteful duplication of resources;
- Avoiding loss of commercial opportunity, and loss of knowledge when staff exit;
- Increasing accessibility to the organisation's recorded internal knowledge;
- Improving information literacy of researchers, learners and administrators;
- Increasing the discovery, transmission and use of recorded knowledge (learning); and
- Increasing the dissemination of new knowledge (research).

2.3 APPROACHES TO KNOWLEDGE MANAGEMENT

Having presented the value of managing knowledge, it is also befitting to discuss how knowledge can be managed. There are two broad categories of knowledge, namely tacit and explicit (Tagger 2005). This broad categorisation of knowledge also forms the basis upon which most organisations introduce knowledge management programmes (UNESCWA 2003; Gordon *et al.*, 2000).

Organisations that approach knowledge management with a view to manage explicit knowledge in most cases adopt information technology (IT) to drive the programme. On the other hand, those that focus on managing tacit knowledge, use social interaction mechanisms to ensure the transfer of knowledge among employees. Where the knowledge management programme is integrated, both IT and human interactive techniques for encouraging knowledge sharing are implemented (North and Hornung 2003). This form of categorising approaches to knowledge management is sometimes referred to as codification and personalisation approach (Ancori, Bureth and Cohendet 2000; Sanchez 2005; Sorensen and Snis 2001; Ubon and Kimble 2002).

Depending on the needs to be addressed, an organisation may choose to introduce a knowledge management programme to manage either explicit or tacit knowledge respectively. However, other organisations possess integrated approaches where both tacit and explicit knowledge are managed (North and Hornung 2003). This assertion is also supported by a study on knowledge management methodology conducted by UNESCWA (2003). According to the UNESCWA study, most knowledge management initiatives fall in the following categories:

- *Best Practices*: aimed at obviating “the need to re-invent the wheel” when effective solutions to problems or how to perform certain function already exists;
- *Virtual communities of Practice*: aimed at establishing “groups of people who share problems and have common interest”;
- *Portals*: act as “point of access” for retrieving organised knowledge.
- *Human resources management support*: concerned with the management of tacit knowledge; and
- *ICT based tools*: aimed at speeding presentation of accurate knowledge for knowledge sharing.

The above initiatives as determined by UNESCWA (2003) in its study are in line with the approaches that can be used to initiate a knowledge management programme in an organisation.

2.4 THE COMPONENTS OF KNOWLEDGE RETENTION

There are many scenarios that have been cited as the rationale for the retention of organisational knowledge. Among such scenarios as viewed by Brewster, Chiravegna and Wilkis (2001); Corredoira and Rosenkopf (2006); Morgan, Doyle and Albers (2005) and Sowunmi *et al.*, (1996) include:

- Organisations lacking formal programmes meant to create a reservoir for explicit knowledge also referred to as 'organisational memory' that support work performance and decision making;
- Mobility of generation X and Y workforce causing increased turnover which has been associated with operational relevant knowledge loss; and
- The ageing workforce, a cadre of knowledgeable workers whose departure from a given workforce has been recognised as a threat to operational efficiency and effectiveness.

Although the need to manage organisational knowledge has emerged, many knowledge retention methodologies have been proposed and implemented (Knowledge & Innovation Network 2004; OhioEPA 2006; TVA 2005; Wright 2006). For purposes of this research and as a way of retaining university knowledge, knowledge assessment, knowledge acquisition and knowledge transfer are considered vital components that need integration for a successful organisational knowledge retention programme. This is also consistent with DeLong's (2004) knowledge retention strategy and Jarrar's (2002) findings while looking at best practice in knowledge management.

2.5 KNOWLEDGE ASSESSMENT

All organisations possess knowledge bases in form of tacit and explicit knowledge (DeLong 2004). However, mere possession and accumulation of knowledge does not guarantee organisational performance (Soo, Midgley and Devinney 2002:4). Thus it is vital that in order to manage knowledge, organisations must seek to assess and identify what they know and ascertain such capabilities as they foster their ultimate organisational performance (Henczel 2000:4). Such an assessment is viewed as the first step in knowledge management (Henczel 2000; Liebowitz *et al.*, 2000). This view is equally supported by Jarrar (2002:324) who undertook a best practices survey in knowledge management by systematically analysing literature and forty case studies of organisations that claimed to have successful knowledge management initiatives. Based on the analysis, it was apparent that as an initial stage, “an organisation must identify its knowledge assets as a first step to develop plans for acquiring, retaining, building and leveraging those assets on a continuous basis” (Jarrar 2002: 324). In practice, organisational knowledge assessment reveals itself in many forms including an assessment of organisational capabilities based on work processes, performing workforce planning and conducting an audit of organisational knowledge.

While knowledge assessment can facilitate effective management of organisational knowledge, not all knowledge is worth managing and therefore, the need to assess for critical knowledge in a firm arises (Ermine, Boughzala and Tounkara 2006:129). In fact, with focus on knowledge retention, Kelleher (2006) points out that the assessment of “key knowledge areas” could either be domain specific, procedural, or indeed, social. This argument is practically supported by the Tennessee Valley Authority’s (TVA) knowledge assessment methodology. The methodology includes a knowledge loss risk assessment based on the faced challenges including among others, “impending loss of critical specialised knowledge” (TVA 2005). Focused on tacit and explicit knowledge loss, the knowledge loss risk assessment at TVA is based on position risk assessment where retirement and position risk factors are assessed. The retirement risk factor considers projected retirement age while the

position risk factor knowledge loss assessment is based on the value placed on the identified knowledge to the organisation. Combining the retirement risk factor and the position risk factor, the criticality of knowledge loss that will demand attention to manage attrition is calculated. The resulting total attrition factor will determine the effort to manage attrition. TVA's approach helps in identifying at risk knowledge and assesses such a risk "by employing various aids and tools which answer three fundamental questions":

1. Specifically what knowledge is being lost? ("What").
2. What are the business consequences of losing each item of knowledge? ("So what").
3. What can we do about each item? ("Now what").

Additionally, the above fundamentals are complemented by an annual survey that determines staff attrition.

2.5.1 Organisational Capabilities Assessment

Meeting organisational objectives efficiently and effectively through enhanced operational/work processes has dominated most business related research especially that concerned with improving organisational performance through improved operational processes (Consultas 2007; Rushcliffe Borough Council 2005).

Operational processes are considered as one of the repositories of explicit organisational knowledge, representing it as a building block for organisational capability (Dosi, Faillo and Marengo 2003). Thus one way of assessing organisational knowledge is carrying out a work process evaluation whose end product includes a knowledge mapping (Perez-Soltero *et al* 2006). Dosi, Faillo and Marengo (2003) argue that within an organisation, individual employee knowledge builds into organisational routines which in turn form organisational capability. Organisational capability refers to how work gets done in an organisation. It entails ensuring that work processes that form a functional organisation, that is, an

organisation viewed through its core functions, in which knowledge is generated and applied are documented.

Romhardt (1997) stresses the need to make explicit an organisation's core operational processes rather than depending on individuals' mastery capacity for operational procedures. Such an approach to knowledge assessment represents a best practice for knowledge retention given the established high mobility of knowledge workers. Documented or mapped operational procedures can reduce the learning period and thus enable new staff to become efficient and effective in carrying out their tasks.

According to Rothwell (2004), process documentation in form of flowcharts or procedure manuals as knowledge reservoirs are helpful in "transferring knowledge from a more experienced to a less experienced person".

2.5.2 Workforce Planning

In order to mitigate the challenges brought about by changing workforce demographics, most organisations have employed workforce planning activities (American Public Power Association 2005). The Australian National Audit Office (2005) defines workforce planning as "a continuous process of shaping the workforce to ensure it is capable of delivering organisational objectives now and in the future". The use of workforce planning in organisations is also as a result of the recognition that organisational performance can only be achieved when the "right people with the right knowledge, skills and behaviours are deployed appropriately throughout the organisation" (Braintree District Council 2006). Thus the Sandwell Metropolitan Borough Council (2006) notes that workforce planning facilitates the assessment of "the present workforce qualifications, skills and knowledge and plan for future workforce demands in delivering better services".

According to the University of New England (2002) and The Australian National Audit Office (2005), the purpose of workforce planning includes the following:

- identifying future workforce needs and capabilities (including skills, knowledge and expertise) as derived from the Strategic Plans;
- developing priorities and cross-linkages between the Strategic Plans and the Operational Plans;
- an analysis of current staff numbers and capabilities;
- an analysis of available and projected funding levels;
- identifying the gap between current and future workforce needs;
- developing workforce plans, outlining the strategies that will be implemented in order to progress from the current situation to the future forecasted situation;
- monitoring and updating workforce plans on a yearly basis as part of the area's operational planning;
- identification of strategic direction and organisational capabilities needed to deliver (for example needed workforce and dimensions of the workforce to support the achievement of the organisation's desired capability); and
- workforce characteristics and competencies for purposes of identifying workforce planning issues.

In other words, workforce planning aims to “accomplish the mission” of an organisation such as a university (University of Albert 2007):

- How many and what types of jobs are needed in order to meet the performance objectives of the university?
- How will the university develop worker skills?
- What strategies should the university use to retain these skills?
- How have retirements, reductions in workforce, and/or hiring freezes affected your faculties ability to get the work done?

Notable among the universities that use workforce profiles and undertake workforce planning include the University of California (2000), the University of

New England (2002), Charles Darwin University (2006), the University of Tasmania (2007), the UniSA (2007) and the University of Alberta (2007).

The University of New England in its Workforce Planning Policy (2002) shows that for workforce planning activities, Faculties/Schools and Divisions/Groups need to consider the existing staff profile in terms of the following:

- skills, knowledge and expertise of existing staff (for example functional/operational skills, scholarships and professional practice, leadership and management, generic workplace skills);
- current workload allocation and job design;
- critical positions/functions/skills/knowledge/expertise;
- possible staff movements (including retirement and pre-retirement, secondment, transfers); and
- staff numbers, classification mix, age, gender, diversity, permanent/fixed term/casual staff ratios.

In order to arrive at a desired workforce profile, workforce planning must be a systematic approach, viewed as a “natural follow-up to the organisation’s strategic planning process” (American Public Power Association 2005).

There are many benefits associated with workforce planning as a knowledge assessment tool. For instance, one of the outcomes of a workforce planning process as stressed by Employers Organisation (2004) is the provision of a base upon which workforce development plans can be developed. Such plans may provide direction on how an organisation could, for instance, as argued by Employers Organisation (2004):

recruit, support, develop and retain the employees it needs for the future. The Plan should also set out where employees will need to move to new jobs to meet changing needs and priorities.

The New South Wales Premier’s Department Public Employment Office (2003) indicates that workforce planning has become critical as a mechanism for

managing “the generational change taking place in the workforce”. For Crawford (2001), workforce planning as a knowledge assessment tool benefits organisations by providing managers with “a strategic basis for making human resource decisions and allows them to predict and prepare for change, while providing strategies addressing current and future workforce issues”.

On the other hand, workforce planning may help to achieve high performance as a result of the interaction of people, process and technology, which are perceived as enablers to high performance and accountability.

Given the above benefits, and based on Idaho Division of Human Resources (2004), one may conclude that workforce planning is a response to “higher retirement turnover, coupled with natural attrition, which causes significant loss in workforce skill and knowledge”.

2.5.3 Knowledge Auditing

One way an organisation can assess and identify its knowledge as a recommended best practice for knowledge management initiatives is by conducting a knowledge audit (Choy, Lee and Cheung 2004). Accordingly, Hylton (2002:1) defines a knowledge audit as “a systematic and scientific examination and evaluation of the explicit and tacit knowledge resources of a company”. The author contends that such an assessment reveals the “risks and opportunities faced by the organisation with respect to corporate knowledge” Hylton (2002:1).

The National Electronic Library for Health (NeLH) (2005) indicates that there are several approaches for conducting a knowledge audit including:

- Identifying knowledge needs;
- Drawing up a knowledge inventory;
- Analysing knowledge flows;
- Creating a knowledge map;

The four approaches as argued by NeLH (2005), involve the following:

- (a) The identification of knowledge needs is concerned with vividly creating an understanding of the knowledge requirements for achievement of organisational goals and objectives. Techniques used to arrive at this understanding include one or a combination of group discussions, questionnaire - based surveys and interviews.
- (b) The knowledge inventory on the other hand seeks to “identify and locate knowledge assets or resources throughout the organisation. It involves counting and categorising the organisation’s explicit and tacit knowledge” (NeLH 2005). Considering explicit knowledge, the inventory will look at:
- Available knowledge in terms of numbers, types and categories of documents, databases, libraries, intranet websites, links and subscription to external resources;
 - The location of the knowledge within the organisation;
 - The organisation and accessibility of knowledge resources;
 - The relevance, appropriateness, quality and reliability of the knowledge resources; and
 - The actual usage of such knowledge resources.

With an understanding that 80% to 90% of corporate knowledge is tacit based, Hylton (2002:7) indicates that an inventory based on tacit knowledge should focus on the following indicators:

- Number and categories of workers;
 - The location of organisational workers in terms of departments and teams;
 - Job types and levels;
 - Formal academic and professional qualifications;
 - Core knowledge skills and experience; and
 - Future potential, for example, job training, learning and development.
- (c) The analysis of the knowledge flow seeks to provide a guide on how the available organisational knowledge moves from one place to the other. Such an analysis as argued by the NeLH (2005), will enable the

identification of knowledge gaps, knowledge duplication, highlighting good practice, blockages and barriers to knowledge flow and usage, and ultimately indicate the need areas where knowledge management efforts should be focussed. Thus, the knowledge flow analysis looks at both tacit and explicit knowledge by examining people, processes and systems.

- (d) The last aspect as proposed by the NeLH (2005) is the “creation of a visual representation of an organisation’s knowledge”, indicating the available knowledge in the organisation and how it moves from one point to the other. This technique is called knowledge mapping. According to Speel et al., (1999) in Ermine, Boughzala and Tounkara (2006:129):

Knowledge mapping is defined as the process, methods and tools for analysing knowledge areas in order to discover features or meaning and to visualise them in a comprehensive, transparent form such that the business relevant features are clearly highlighted.

Ermine, Boughzala and Tounkara (2006:130) indicate that there are several methods that can be used for knowledge mapping, among others include Global Analysis METHodology (GAMETH), and M3C Methodology which they (Ermine, Boughzala and Tounkara 2006) used in Hydro Quebec Company.

Practically validated, Choy, Lee and Cheung (2004) informs of their knowledge audit methodology employed at Hong Kong Dragon Airlines Limited. The methodology consists of three steps. Firstly, it looks at knowledge management culture assessment, whose objective is to “review the culture readiness of launching KM initiatives” (Choy, Lee and Cheung 2004:70). Secondly, an in-depth interview is carried out where interviewees are requested to pronounce their knowledge, expertise and skills relevant for their duties performed and as well as identifying knowledge sources. This step culminates into a knowledge inventory. The final step is a knowledge flow analysis using knowledge mapping and social network analysis.

In conclusion, Hylton (2002:9) insists that knowledge audit (assessment) is not an option when deciding to manage knowledge but it is an essential component which accounts for the success of any knowledge management initiative.

2.6 KNOWLEDGE ACQUISITION

Learning or knowledge acquisition in organisations falls within two broad streams. These are the explicit to tacit on one hand, and the tacit to explicit mode on the other. 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).

The study of knowledge acquisition in organisations has in most cases been associated with organisational problem solving and work performance or indeed operational/process enhancements (Cheah, Rashid and Abidi 2003; McCall 2006; Poulymenakou, Cornford and Whitley 1990; Soo, Midgley and Devinney 2002).

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 a support mechanism for the individuals handling a given scenario. Poulymenakou, Cornford and Whitley (1990) argue that the above 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 the issues they are considering in every occasion”.

Based on the above consideration, it is safe to argue that not only is knowledge acquisition a vital requisite in organisational problem solving, but it is equally important for sustaining organisational operations. In fact, 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 knowledge 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) model of knowledge acquisition, the interaction between explicit and tacit knowledge becomes clear. Such interactions can be related to Nonaka's (1994) theory of organisational knowledge creation. The author contends that the concept of organisation knowledge creation is much more encompassing than that of organisation learning. The author further argues that the concept of learning, that is, knowledge acquisition can only be likened to one of the four (4) 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 two (2) 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) stress 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). To this end, 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 capability, new knowledge creation and firm performance, and deduced that a positive relationship between knowledge acquisition and firm performance exists.

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 the tacit to explicit knowledge acquisition perspective (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.

2.6.1 Knowledge Acquisition Techniques

As envisaged by 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. Wagner and Zubey (2005) indicate that among the common used techniques for knowledge acquisition include interviews, protocol analysis and card sorting. As provided by Milton (2003), other knowledge elicitation (acquisition) techniques include hierarchy-generation, matrix-based, limited-information and constrained-processing tasks and diagram-based techniques. 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.

Lastly, other authors such as Townsend and Gebhardt (2001) cite “After Action Reviews” as a practice that facilitates knowledge acquisition.

Indeed, knowledge acquisition includes a range of varied techniques and accordingly, Milton (2003:2) argues that many knowledge acquisition techniques exist because of many different types of knowledge in organisations which require different techniques to access.

2.6.1.1 Recruitment

The activity used to ensure the availability of tacit knowledge within an organisation is recruitment of staff (Corredoira and Rosenkopf 2006:20; Harman and Brelade 2000). Edwards and Rees (2006:197) define recruitment as “the practice of deciding what the company needs in the candidate and instigating procedures to attract the most appropriate candidate for the job”.

Recruitment should be driven by an organisation’s knowledge requirement (DeLong 2004:166). DeLong (2004) argues that the shortage of skilled personnel as well as the shrinking talent pool of would be recruitees pose serious challenges for knowledge retention. He cites BP and Trinidad and Tobago 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.

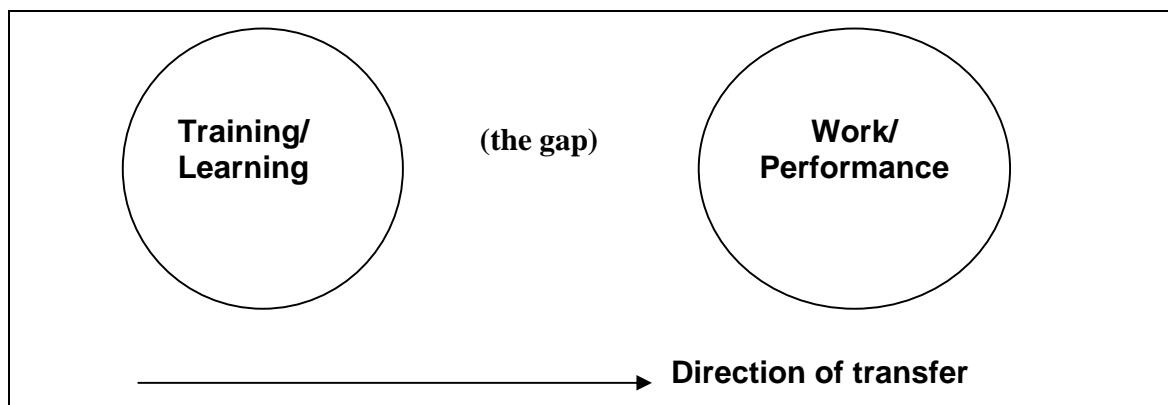
Considering the views expressed by DeLong (2004) and Harman and Brelade (2000), it is obvious that there has been a revolution in the way organisations acquire knowledge through recruitment. Such a revolution not only reaffirms the supremacy of knowledge as an organisational resource that offers competitive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

2.6.1.2 Training and Development

Once an organisation has mapped its functional operations and recruited candidates to serve in its various operations, 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 are also times when operations remain unchanged, but the organisation loses its staff with relevant operational knowledge and thus

undertakes recruitment of new staff. These scenarios create a knowledge gap between employee capacity and the required employee performance (Figure 2.1 below). Therefore, the situation necessitates the need for existing staff to acquire new operational relevant knowledge (Rowold 2007).

Figure 2.1: The Knowledge Gap: The Training and Work Performance Relationship



Adapted from Vermeulen (2002)

Most often, such a gap is only closed through a knowledge acquisition technique called training and development (Corredoira and Rosenkopf 2006; Okiy 2004; Rowold 2007). Training and development usually referred to as staff development, is also 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). Organisations that support employee learning have been referred to as “Learning Organisations” (Browell 2000; Pjp 2001). Regardless of the terminology used, the objective of training is to achieve “better performance in the work place” (Vermeulen 2002:368).

There are many training approaches used for work-based knowledge acquisition in organisations. Dekker *et al.*, (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.

2.6.1.3 Intuitive, Incidental, Retrospective and Prospective

Mumford (1995) in Adams (2001:236) stresses that four ways that facilitate work based knowledge acquisition exists. These are intuitive, incidental, retrospective and prospective. These are presented 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 articulate what is learned but, however, recognises that they have learned something. The fact that the 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 any work

2.6.1.4 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, semi-structured and structured interviews. The use of interviews as a way of acquiring knowledge is a common technique in human resources. 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).

However, interviews that are conducted when an employee is exiting an organisation have been criticised on the basis that they 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 their 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.

2.6.1.5 Card Sorting

The card sorting knowledge acquisition technique 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 fore 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.

2.6.1.6 Protocol Analysis

Protocol analysis as a knowledge acquisition 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, it 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).

2.6.1.7 Observation

Observation is another knowledge acquisition technique cited above. Certain job tasks require that an expert in such a task must teach 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).

2.6.1.8 Brainstorming

Brainstorming as a knowledge acquisition technique is “a group method for developing ideas and exploring their meaning” (Liou 1990:225). However, its 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). In real

life, brainstorming sessions take place in board rooms and the product of such sessions is, among others, the production of minutes.

2.6.1.9 Expert Systems, Subject Matter Experts and After Action Reviews

With focus on knowledge retention, the IMB Business Consulting Services (2003:6) informs of the available knowledge elicitation techniques for preservation of organisational memory with focus on “working with individuals to take their tacit knowledge ... and transform it into a more explicit and tangible format”. These knowledge acquisition techniques whose objective is to make “an individual’s knowledge by preserving it in some form of repository” include: expert systems; subject matter experts; and after action reviews.

Subjecting the IMB Business Consulting Services (2003:6) techniques to a detailed analysis, one notes their similarities to the other techniques discussed earlier. Thus, there are some relationships between interviews and expert systems while subject matter expert relates to protocol analysis. After-action reviews are more or less the same with Mumford’s (1995) retrospective knowledge acquisition approach.

2.7 KNOWLEDGE TRANSFER

Besides knowledge assessemnet and knowledge acquisition, another interrelated dimension of knowledge retention is knowledge transfer. According to Bou-Llusar and Segarra-Cipres (2006:105), “knowledge transfer refers to the exchange of knowledge between units within a firm (internal transfer) or between different firms (external transfer)”.

Knowledge transfer is about providing and obtaining knowledge (Wilkesmann 2007). Such an understanding of knowledge transfer presupposes 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 the

knowledge remains with the unit or 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, Pedersen, Petersen and Sharma (2006) differentiates between experiential and object knowledge transfer, with the former relating to tacit knowledge transfers and the latter implying explicit knowledge transfer. Thus, just like knowledge acquisition, knowledge transfer is also believed to be a feature of organisational learning (Janz and Prasarnphanic 2005:2). 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. Similar views are also held by Chisholm and Holifield (2003) after they examined tacit knowledge transfer within the context of Work-Based Learning as a mechanism for Continuous Professional Development (CPD).

With intention to retain university knowledge (University of California 2006), the Council of University of California Staff Assemblies (CUCSA) Workforce Evolution Work Group stated that a successful knowledge transfer programme must include:

- (a) Identification of critical knowledge to retain key personnel to engage;
- (b) Selection of knowledge transfer methods with attention to diverse needs;
- (c) Application of a knowledge transfer method and support for successes;
- (d) Recognition of contributions and accomplishments; and
- (e) Assessment and refinement of methods based upon defined measures.

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.

2.7.1 Succession Planning

One of the most common known knowledge transfer approach 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), 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 programme. As reported by the Treasury Board of Canada

Secretariat (2002), succession planning as a knowledge transfer technique is widely practiced in Canada.

2.7.2 Community of Practice (CoP)

Communities of practice (CoP) as an approach for knowledge transfer involves the transfer of knowledge within formal or non-formal segments of employees in the organisation (Nickols 2003). It is applied where there is loss of expertise whether through retirement or employee mobility involving the exodus of young employees with operational relevant knowledge (DeLong 2004:115). According to Cadiz, Griffith and Sawyer (2006) CoPs can either evolve spontaneously or can be formally established. In either case, the authors empirically verified that shared vocabulary, learning from each other, open communication and remembering previous lessons are the four subcomponents of experienced CoPs.

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).

2.7.3 Knowledge Repositories through Documentation

The issue of 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), 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 Ayres 2001:1). Thus, as provided by DeLong (2004:8), documentation serves as a mechanism for transfer of explicit knowledge, where vital work practices for “local knowledge

needed to perform a task” are captured. It is most suitable when an important employee is about to leave, although DeLong (2004:89) stresses that it must 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, Lochhead and Stephens (2004) inform that the role of technology in knowledge transfer activities can be viewed to be twofold: the documentation, archiving and thus providing explicit knowledge on one hand and the facilitation of a platform for written or graphic content especially where employees share knowledge on a face-to-face basis. In these situations, it may be possible to permanently capture discussions, debates or indeed visual explanations that can facilitate knowledge transfer.

The authors further indicate that databases, the intranet and groupware are some of the knowledge-based technologies commonly in use. According to the Danish Delegation of the NATO Training Working Group on Individual Training and Education Development (2003), technology based knowledge bases usually contain declarative, procedural and contextual knowledge.

2.7.4 Mentoring

Mentoring is one of the cited techniques for knowledge transfer (DeLong 2002). According to OhioEPA (2006), mentoring takes place when “an experienced, skilled person (mentor) is paired with a lesser skilled or inexperienced person (protégé) with the goal of developing or strengthening competencies of the protégé”. The aim of mentoring according to Bentley (1995) is to encourage “the individual to reflect on the job as a whole, so that current and new skills may be most appropriately applied”.

The importance of mentoring in the knowledge economy where workforces are inter-generational cannot be over-emphasised. For instance, it has been established through research that most employees are likely to succeed in their

work through mentorship (Werner 2004). Mentoring is also regarded as a vital tool for ensuring knowledge transfer from experienced employees to new employees (Lindenberger and Stoltz-Loike 2007; Young 2007).

There are a number of universities involved in mentoring programmes including the 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).

The University of Salford in its Code of Practice and guidelines for mentoring new staff to the University states that mentoring has benefits for the new staff, the mentor and the School/Unit/University. The benefits are indicated in Table 2.2.

Table 2.2: Benefits of a University Mentorship Programme

New Staff	Mentor	School/Unit/University
<ul style="list-style-type: none"> • Improves self confidence • Offers professional development • Provides advice and information • Encourages reflection on practice • Provides personal support • Improves effectiveness • Develops awareness of culture, politics and philosophy of the organisation • Gives access to 'sounding board' for concerns, issues and ideas 	<ul style="list-style-type: none"> • Refreshes own view of work • Enhances job satisfaction • Encourages self reflection • Develops professional relationships • Enhances peer recognition • Encourages a proactive role in learning and development 	<ul style="list-style-type: none"> • Enables faster induction of new staff • Enhances individual performance • Enhances team performance • Improves communication • Encourages reflective practice • Promotes a climate of professional development • Builds mentoring capacity • Encourages commitment to the organisation

2.7.5 Coaching

A related though different knowledge transfer technique to mentoring is coaching. According to Bentley (1995), coaching “is the process of giving the individual trainee specific (task related) guidance and using feedback to develop and consolidate a new skill”. Just as mentoring is an important tool for knowledge transfer in inter-generational workforces, the same is also true for coaching as generation X and Y who are reported to crave for coaching (Henry 2006). The author emphasises the importance of coaching by noting that:

It is ironical that we accept that the best sports people in the world need coaches for continuous improvement, yet in business today we still think business coaching is a fad. Fortunately, Gen X recognises the need for coaching, especially in relation to people management skills, and are often willing to fund a coach out of their own pocket to improve their management and leadership skills.

The importance of coaching to the employee and the organisation include the improvement of employee performance that lead to consequent organisational performance (Nitschke 2007).

2.7.6 Phased Retirement

Phased retirement has been cited as a technique 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, the author further notes 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.

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; and
- Respond to ageing clients and their needs; and
- Encourage self-funded retirees.

2.7.7 Job Rotation

Job rotation is an organisational practice that facilitates knowledge transfer (UNESCWA 2003; Kastelli 2006). It involves deliberate movement of employees from one position to the other within an organisation. Such movements according to Levine and Gilbert (1999) could involve movements “across units, cross-functional meetings, cross-unit or cross-group meetings”. Job rotation guarantees employee exposure to other challenges and work activities.

2.7.8 Story telling

Another knowledge transfer technique used by organisations is story telling. According to Prusak (2001), story telling 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) stress that story telling as a knowledge management technique enables organisations uncover tacit knowledge as it is a natural learning process.

2.7.9 Orientation

Lastly, although not the least, orientation also considered as induction is another tool used by organisations to transfer operational relevant knowledge (University of Reading 2007). It aims at transferring both explicit and tacit knowledge at two levels identified as general and job specific orientation (Carr 2008; CIPD 2008; University of Melbourne 2002; University of Queensland 2006). General orientation is usually conducted to ensure that the new employee becomes knowledgeable enough in “corporate goals, policies, procedures and standards” (University of Melbourne 2002). On the other hand, job specific orientation seeks to equip the new employee with the actual operational knowledge and skills required to carry out tasks effectively and efficiently (University of New South Wales 2007).

2.7.10 Summary of Tools, Methods and Techniques for Knowledge Assessment, Acquisition and Transfer

Table 2.3 below provides a summary of such tools, techniques and methods.

Table 2.3: Tools, Methods and Techniques for Knowledge Assessment, Acquisition and Transfer

Knowledge retention Component	Tools, methods and techniques used	Purpose of tool, method or technique
KNOWLEDGE ASSESSMENT	Organisational capabilities assessment	Documentation of organisational functions/operations/processes as well as actual tasks performed (how work gets done). The rationale being to make explicit an organisation's operational processes and actual work activities rather than depending on an employee's mastery capacity for work performed and related operational policies, regulations or procedures. (Consultas 2007; Dosi, Faillo and Marengo 2003)
	Workforce planning	A continuous process of ensuring that an organisation's workforce is able to perform its functions not only at that particular time but also for the future. This entails determination of available and required skills and knowledge to effectively carry out an organisation's functions. The rationale for utilising workforce planning among others, is to mitigate workforce demographic challenges such as attrition. (American Public power Association 2005; Charles Darwin University 2006)
	Knowledge auditing	A combination of organisational capabilities assessment and workforce planning that culminates into the creation of a knowledge repository/base as well as a knowledge map. The importance of knowledge auditing is that it enables employees to access operational relevant knowledge easily and the identification of possible communities of practice. It also enhances preservation of organisational memory (Hylton 2002)
	Recruitment	Acquisition of tacit knowledge by employing people deemed to have relevant operational knowledge for the role determined in an organisation. (Edwards and Rees 2006)

KNOWLEDGE ACQUISITION	Training and development	The acquisition of general and specific knowledge through training of staff. The rationale is to close the gap between employee capacity and expected performance in a given organisational role. (Rowold 2007; Vermeulen 2002)
	Brainstorming	The generation of ideas relevant for operations by way of facilitated discussions. The rationale is to enhance and stimulate innovation and arriving at desired decisions. (Liou 1990)
	Expert systems; subject matter experts; and after action reviews	Knowledge acquisition through consulting relevant knowledge documents in form of a base/repository; making consultations with colleagues viewed knowledgeable in the matter being handled; or facilitation of platform for reviewing operations/work activities with a view to improve performance. (IBM Business Consulting Services 2003)
KNOWLEDGE TRANSFER.	Succession planning	Proactive facilitation of knowledge gain by individuals earmarked to handle roles of a higher position. The rationale is to avoid loss of knowledge in case of an attrition challenge in such a role. (Butler and Roch-Tarry 2002)
	Community of Practice	Formal or informal groupings of employees aimed at facilitated acquirement of operational knowledge. Enables less experienced staff to gain from the more experienced within a group. (Nickols 2003)
	Knowledge repositories through documentation	Documenting organisational work tasks so as to enable access relevant operational Knowledge. (DeLong 2004)
	Mentoring	Pairing of knowledgeable colleagues with less experienced staff. The objective is to enhance the performance of the less experienced staff. (Bentley 1995; OhioEPA 2006)
	Coaching	Proactive identification of a trainee and trainer in order to improve the trainee's performance. The practice has been highly recommended for intergenerational workforce. (Bentley 1995)
	Phased retirement	An activity aimed at retaining institutional knowledge by re-employing retired members of staff. The practice is highly prevalent in universities especially for retaining staff such as Professors. Phased retirement has been also viewed as an activity that can enhance succession management. (Lochhead and Stephens 2004)
	Job rotation	An activity aimed at familiarizing staff to various job roles for purposes of acquiring different skills and operational knowledge for

		various tasks carried out in an organisation. The purpose is to allow the flow of knowledge and keeping vital operational knowledge among staff. (Levine and Gilbert 1999)
	Story telling	An activity that aims at uncovering relevant knowledge on operational knowledge through the sharing of narratives on an organisation's operations. (Prusak 2001)
	Orientation	An activity that aims to familiarise an employee to general job requirements such as corporate goals, policies, procedures and standards as well as familiarisation to actual knowledge and skills required for the job. The purpose is to ensure that the new employee settles quickly in the new role (University of Melbourne 2002; University of New South Wales 2007)

The above established tools, methods and techniques for knowledge assessment, acquisition and transfer are not exhaustive of what can be used for the retention of knowledge. However, they represent the broader perspective of knowledge retention practices that are already in use in various organisations.

2.8 DRIVERS FOR THE RETENTION AND MANAGEMENT OF KNOWLEDGE

There is no doubt that knowledge retention is one of the facets of knowledge management taking centre stage in the knowledge economy brought about by the problem of knowledge loss that cuts across all industries (DeLong 2004; IBM Consulting Services 2003). Thus, organisations and universities alike have realised that in the absence of knowledge retention and management practices, they stand to lose their organisational memory, that is, the operational knowledge within employees as well as the organisational operating procedures and related documents (Kruse 2003). It is argued that the loss of organisational knowledge is a menace for operational efficiency and effectiveness (Kruse 2003; Scalzo 2006). Such a menace emanates from the understanding that from inception, an organisation acquires its operational knowledge "relevant for its existence" (Scalzo 2006). However, if such knowledge is not managed and retained, such an organisation stands to lose the knowledge acquired along the way, a threat that

has been viewed to have detrimental effects on organisational operations (Lahaie 2006).

The main notable knowledge loss drivers that have been identified and thus necessitate the need to retain organisational knowledge as argued by DeLong (2004) and Padilla (2006) and Stovel and Bontis (2002), include among others the following:

- Changing workforce demographics and profiles;
- Employee turnover and mobility; and
- Lack of knowledge documentation.

It is argued by Stovel and Bontis (2002) and Sutherland (2005) that the ability to identify the above challenges and consequently, developing solutions to mitigate them is a core competence that organisations must seek to possess for them to remain viable in the knowledge economy. In order to appreciate and understand the drivers for knowledge retention, the following presentation on workforce demographics and profiles, employee turnover and mobility, and the cost implications for lost knowledge is provided.

2.8.1 The Significance of Changing Workforce Demographics and Profiles

In the knowledge economy, understanding an organisation's workforce profile has become an obvious practice in both corporate organisations and universities (Anderson, Johnson and Saha 2002; The Australian National Audit Office 2005; State of Wisconsin 2005; Charles Darwin University 2006). With studies revealing that most organisations are faced with massive knowledge attritions through retirements, reduced labour base, the shrinking talent pool and increased mobility of younger workforce (IBM Global Business Services 2006), the understanding of workforce profiles and demographics has become a management tool for considering the healthy status of an organisation's knowledge base (The Australian National Audit Office 2005). Most organisations are aware of the threats caused by the changing workforce demographics, and efforts to tackle the challenge are

being instigated (AARP 2006, AARP 2007). While it has been determined that changing workforce demographics (the majority workers nearing retirement age and few entrants into employment) lead to loss of institutional knowledge (Plexus Scientific Corporation and HandySoft Global Corporation 2007), very few organisations have formal strategies that ensure retention of institutional knowledge (AARP 2007; Davidson, Lepeak and Newman 2007).

Central to the understanding of changing workforce demographics and the significance of understanding workforce profiles has been the established inter-generational workforce in organisations comprising of mainly three generations namely: the baby boomer generation; generation X and generation Y (The Australian National Audit Office 2005; Gainsford 2005). As presented in Table 2.4 below, other authors include a fourth generation – that of people born between 1922 and 1945 (Lamb-Hale and Mennell 2007). It is argued that each of these generations has its own characteristics and thus there is need to integrate them if organisations are to ensure knowledge continuity and therefore, sustain efficiency and effectiveness in their operations (Chapman 2003; IBM Global Business Services 2006).

2.8.1.1 Builders/Traditionalists

This is an old generation born between 1922 and 1945. It is viewed as the pioneer of industrial revolution. This generation is well respected as founding pioneers for most organisational processes. Thus, it is argued that their departure from the workforce will have similar consequences for knowledge loss like the baby boomer, a generation right after them (Perkins and Hutchins 2006).

2.8.1.2 The Baby Boomer Generation

According to Schoonover (2006), the baby boomer generation comprises of a workforce that was born “two decades immediately following World War II”, specifically, a generation of people born “between 1946 and 1964” (AARP 2006).

Accordingly Bogdanowicz and Bailey (2002) and Schoonover (2006), characterises the baby boomer generation as one that:

- drove change and technological growth than any other generation.
- has large numbers comprising a given workforce.
- posses unique and critical operational knowledge acquired through career employment up to forty years.
- due to some reason (poor financial planning, personal satisfaction derived from work) do not willingly make room for Xers on the corporate hierarchical ladder.

Given the above characteristics of the baby boomer generation, imagining the impact that emanates from their departure from a given workforce is an avoidable thought for any strategic organisational leadership. The relationship between the ageing workforce and the need for knowledge retention lies in the fact that baby boomers posses relevant operational knowledge that, if left with, could impede organisational operations (AARP 2007; Davidson, Lepeak and Newman 2007; Schoonover 2006).

According to the Segal Company report (2001), the effect of retirements is already felt within organisations and its intensity is expected to spread over a period of twenty (20) years. Hu, Kostek and Perkins (2007) suggest that the implications of the baby boomer generation in academia will include lack of faculty as academic staffs are retiring.

However, not only are learning institutions going to lose academic staff but will also lose other support staff holding various university knowledge on operational procedures and processes that support academic activities (Charles Darwin University 2006; UniSa 2007; University of Tasmania 2006). Thus, the departing baby boomer generation is a critical threat. If left unattended to, organisations stand to lose organisational knowledge created over long periods of time. In view of this recognition, organisations including universities must seek ways to make

available such operational knowledge to other generations that are taking over from them.

2.8.1.3 The Generation X

Following the baby boomer generation is a workforce namely the generation X, (The Segal Company Report 2001). Bogdanowicz and Bailey (2002) pointed out that the characteristics of the generation X workforce include among others the following:

- they do not seek life-long employment;
- they crave life-long learning;
- they seek employability over employment;
- they value career self reliance;
- they are educated, smart, creative, computer literate and equipped with portable skills; and
- they change jobs on average every eighteen months.

Given the above characteristics of the generation X workforce, organisations are faced with a challenge of losing knowledge from mid career employees, who according to DeLong (2004) and Sutherland (2005) do not seek career bound employment as was the case with their predecessors, the baby boomer generation. Just like their predecessors, generation X workforce possess relevant operational knowledge, which if lost could also result in reduced operational efficiency and effectiveness (DeLong 2004).

With the environmental turbulence within organisations of the knowledge economy, another threat associated with the loss of generation X workforce is the potential loss of innovative ideas necessary for organisational growth (Karkera 2006). The departure of a generation X worker is also viewed as a possible source of competition that leads to loss of market if such a mid career knowledge worker joined a competitor organisation (DeLong 2004). Finally, organisations like Plexus Scientific Corporation and HandySoft Global Corporation (2007) stress that

generation X workforce is no greater in numbers than the baby boomer generation. As a result, the number of potential replacements for the baby boomers is low.

2.8.1.4 The Generation Y

The last category that is part of the inter-generational organisational workforce is the generation Y. As viewed by NAS (2006) and Lamb-Hale and Mennell (2007), the generation Y workforce comprise of the following characteristics:

- coddled most of their lives and look for personal fulfillment in the workplace;
- born with technology, so they are cyber communicators and very tech savvy;
- place a high value on work/life balance;
- want to make a difference;
- require mentoring and desire immediate supervision;
- enjoy working on teams/very group-oriented;
- multi-taskers;
- “speak their mind” mentality;
- want to be at the top of the chain right away; and
- want to do the work better and faster than their co-workers.

Understanding the implications of the generation Y in a workplace is an issue that each employer must seek to adopt. Accordingly NAS (2006) observes that:

Generation Y will not only help fill in for the number of missing workers the baby boomer generation is leaving behind; they will also bring along with them fresh ideas and an enthusiastic and motivated workforce.

However, the generation Y workforce is mobile in nature and requires orientation in most organisational operations (DeLong 2004; Ohio Environmental Protection Agency 2006).

Table 2.4 The Four Generations

GENERATION	BIRTH YEARS
Builders/Traditionalists	1922-1945 Age: 60+
Baby Boomers	1946-1964 Age: 42-60
Generation X	1965-1980 Age: 27-41
Generation Y/Nexters	1980-2000 Age: Under 27

(Adapted from: Lamb-Hale and Mennell (2007))

The challenges of the changing workforce demographics presented above are consistent with DeLong's (2002) research that was conducted through interviews with seventy-five chemical company executives, managers and industry experts in twenty-six companies in the US, Europe and Japan. The results of the research indicated that changing workforce demographics had three implications on organisations:

1. Lost knowledge from increased retirements hurts organisational performance.
2. The shifting talent pool exacerbates recruiting and assimilation problems.
3. Generation gaps increase focus on employee retention and strategic workforce planning.

The implications of the above presented generations to universities not only hinders the performance of universities but also calls for the need to introduce effective initiatives targeted at mitigating the costs of not having enough employees who are knowledgeable in their duties.

The study by Berberet *et al.*, (2005) indicates that in the coming decades, demand for university staff is likely to be high and “higher education seeks to plan for and manage well a generation turnover ... there are many uncertainties regarding the adequacy of the pool of faculty replacement candidates”. Given this scenario, university managements must be able to plan and facilitate initiatives that would ensure sustenance of operations. Tettey (2006) emphasises the need to introduce mentorship programmes for academic staff. Efforts to mentor staff are directed at ensuring availability of professional performance for the remaining staff in a university in case of turnover. Thus, such an approach would ensure knowledge continuity of operations.

2.8.2 The Implications of Employee Mobility and Turnover

Most organisations are faced with attrition challenges comprising of retirements, resignations, deaths and general movement of young workforce, generally referred to as employee mobility and turnover (Stovel and Bontis 2002). These challenges (retirements, resignations, deaths) have been identified as agents for knowledge loss, which cause inability to perform organisational operations efficiently and effectively (Latimer 2002). When people resign from their job in one organisation to another, the consequence of that “mobility” is “turnover”. Equally, when an employee leaves an organisation either through death or retirement, the outcome of that attrition is turnover. Thus, turnover is a term that refers to a situation where an organisation’s employees leave either due to:

- retirement;
- mobility in preference for another organisation; or indeed
- death.

Turnover on its own is not a problem, especially when a leaving employee’s performance does not meet organisational expectations, a situation referred to as functional turnover (Stovel and Bontis 2002). However, turnover becomes an issue when the leaving employee is a higher performer whose replacement would be a

challenge, a situation called dysfunctional turnover (Sutherland, 2005). CIPD (2005) in Loquercio (2006) stress that:

Where it is relatively easy to find and train new employees quickly and at relatively little cost, it is possible to sustain high quality levels of service provision despite having a high turnover rate. By contrast, where skills are relatively scarce, knowledge important, relations with customers/stakeholders are close and important, where recruitment is costly or where it takes several weeks to fill a vacancy, turnover is likely to be problematic from a management point of view.

According to Lochhead and Stephens (2004), it is not possible to avoid turnover even in situations where it is monitored and the organisation understands the reasons why the employees are leaving, for instance mandatory retirements. As can be observed recently, calls for awareness of the looming baby boomer retirements are everywhere (AARP 2007; DeLong 2004). The greatest fear associated with the retirement of baby boomers is the loss of knowledge and expertise (Cross 2005). Coupled with the unavoidable turnover through retirements is the need to change jobs frequently, a workforce characteristic that has been associated with the knowledge economy (Suthreland 2005). In the recent past, employment within an organisation was viewed as a means for developing one's career. However, this notion has been reversed by generation X and Y, who according to Arthur (2001) in Loquercio (2006), witnessed their parents fall victims to corporate "downsizing", and therefore have developed the following characteristics:

- active management of their careers;
- they are more interested in continuing learning and education;
- they expect to go through numerous jobs and career changes throughout their lifetime;
- they respect expertise and knowledge, rather than titles;
- they are reluctant to work for an employer who does not allow them to challenge the status quo; and
- they balance careers and familial responsibilities.

Arthur's (2001) assertions as stated above are supported by the study conducted by Sutherland (2005) that focused on labour turnover and employee mobility and involved more than 300 knowledge workers across a wide range of demographic groups and industries in South Africa. The findings revealed that, "despite more than 80% of the sample seeing themselves as being very committed to the organisation, these knowledge workers don't anticipate staying in the organisation for much longer". The findings present a counter reactive thought to traditional literature on labour turnover where turnover was viewed as an indicator of organisational commitment. According to the study, knowledge workers are mobile in nature and do not necessarily believe in job security and loyalty, but rather place their belief in "employability and loyalty to one's own career and skills set... and that... the notion of a permanent job has become an oxymoron".

Sutherland's (2005) findings are consistent with Lochhead and Stephens (2004) who carried a study on Canadian plastics sector with a view to assess attrition levels and finding knowledge transfer measures. Lochhead and Stephens (2004) found that although most of the companies had low turnover, it was not as a result of "formalised retention strategies but the companies had mechanisms in place for dealing with threats caused by loss of knowledge". For instance, practices like such as workforce planning were identified.

Related to the challenges caused by employee mobility is the need to manage employee tenure within the organisation. According to Auer, Berg and Coulibaly (2004), there is a positive relationship between employee tenure (the length of time an employee remains in an organisation) and the employee's productivity. Thus, while understanding that generation Xers and Yers are mobile in nature, their mobility should be regulated to obtain maximum benefit for the organisation (Ohio Environmental Protection Agency 2006).

Inter-generational workforce composition as well as employee mobility and turnover are not only experienced in the corporate world but also in academic

institutions (Anderson, Johnson and Saha 2002; Charles Darwin University 2006; Kubler and Deluca 2006). According to the study by Nunn (2005), academic mobility includes those moving from one continent to the other or from academic institutions to other sectors. The study found that Africa had a significant number of academics leaving the academic sector to other sectors as well as those leaving African academic institutions to other academic institutions abroad. This finding is also in line with the situation prevalent at the University of Zambia where staff attrition as an agent of knowledge loss that hinders efficient and effective academic operations was detected (IOTA Consulting Services 2001).

2.8.3 The Lack of Knowledge Documentation

The other aspect that has been cited as a driver for knowledge retention is the need to document organisational knowledge (Padilla 2006). Accordingly, Padilla (2006) argues that besides the concern being raised over threats of lost knowledge, most organisations are loose documenters. In this context, Padilla (2006) is referring to a situation where organisations fail to recognise the need to have their operational relevant knowledge recorded so that it serves as declarative knowledge. The rationale for having knowledge recorded is best described by the UNESCWA (2003) which notes that “initiatives have proved that when explicit knowledge is managed well, whether deliberately or not, the time needed in order to complete tasks is reduced and duplication is avoided”. Besides this observation however, Schoonover (2006) emphasises the need to document knowledge by stressing that:

If the loss of key industry skills through retirement induced attrition is not alarming enough, the location of the operating knowledge is extremely sobering... In a survey by the Dephi Group, it was discovered that roughly 42% of the knowledge of an organisation exists solely in the brains of their employees. This 42% not only represents unique undocumented, explicit organisational knowledge, but also unique tacit knowledge that employees, from the custodian to the CEO use in their daily execution of their duties.

In fact, while writing for the need to document organisational knowledge in higher learning institutions, Bailey and Cameron (2004) argue that:

It is no longer sufficient to rely on the “personal memory” of individual members of staff about past initiatives, procedures and the history of the institution...particularly where there is high staff turnover and organisational change.

Consequently, the implications of the above need for knowledge documentation and considering employee turnover and mobility consequences as argued by authors such as Stovel and Bontis (2002), DeLong (2004) Sutherland (2005) and Loquercio (2006), presupposes that when employees knock off after a day’s work, there is a 50-50 chance of no return. Therefore, in the event that the employee does not come back the following morning, the organisation would lose vast amounts of knowledge that could have greater consequences for operations. This line of thought is also consistent with Karkera’s (2006) observations that not only does lost knowledge affect productivity, innovation and efficiency but that it also leads to loss of knowledge.

Thus, given the above scenario, knowledge documentation, also referred to as codification, is a vital component of knowledge retention programmes (Cowan and Foray 1997; Rodriguez-Ruiz 2006). The purpose of documentation is to document operational work processes, procedures, policies practices as well as the knowledge of experts within a firm (Rodriguez-Ruiz 2006). Thus, according to Johnson *et al.*, (2002) “documentation of practices raises awareness of alternative ways of doing things and thereby contributes to organisational change”. As can be deduced from authors like Cowan and Foray (1997) virtues associated with documented knowledge include:

- reduction in costs related to knowledge acquisition;
- increments in knowledge accessibility; and
- it is complementary to tacit knowledge when performing actions.

Practices that serve the purpose of documenting (explicit) knowledge include records/document management systems (Ohio Environmental Protection Agency

2006). Most organisations including universities have had such systems in place (University of Missouri 2007; University of Sydney 2007).

Thus, with threats of the inter-generational workforce as well as those brought about by employee mobility and turnover, organisations require incorporation of knowledge documentation as part of their knowledge retention practices. This is also in line with current advocated methodologies for knowledge retention as well as what is obtainable in practice by organisations that run knowledge retention projects (Ohio Environmental Protection Agency 2006; TVA 2005).

2.9 KNOWLEDGE RETENTION IN UNIVERSITIES

This section presents university operations associated with knowledge management.

2.9.1 Managing the University and the Role of Knowledge Management in University Operations

The rationale for the existence of universities can hardly be questioned in any given society, owing to the many benefits associated with university outputs (Materu 2007; Oosterlinck 2001). Unlike corporate and government institutions, universities have a unique mandate in society. They are regarded as the reservoirs of knowledge, be it explicit (research) or tacit (staff and graduates) (Tippins 2003). Tasked with this huge responsibility to society, it is therefore, expected that the management of universities is a challenging task. Initially, one of the early challenges of managing a university was 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). It is almost obvious for most universities to have their mission as teaching, research and service (University of Zambia Strategic Plan 2001). In order to achieve these mission goals, universities have within themselves operational functions including:

- general management and administration, (Strategic Planning, Finance, Purchasing, Human Resources Management);
- management of research (Undergraduate & Postgraduate, Consultancy);
- Academic functions, (Senate, Admissions, Examinations, Curriculum development); and
- other support functions, (Library and information services, Health services; Student welfare).

In addition to the above operational functions, other universities have expanded their teaching activities to include distance education and running pure business units.

Considering the above spectrum of activities found in universities, one identifies what is generally found in corporate institutions as well as unique functions that are university specific. These broad range of activities pose challenges in terms of achieving efficiency and effectiveness for operational benefit (Seal 2005; Sawyer 2005).

While some of the challenges are externally influenced (for example, availability of staff and management of explicit work processes), others require internal adjustments by departing from the norms and embracing new management approaches (Deem 2004; Seal 2005; Staffle 1996). This emergence of the need to embrace change management programmes to accord universities a chance to revitalise their operations has seen the call for the introduction of yet another management approach called knowledge management (Staffle 1996).

Although universities have been in the fore advocating for the adoption of knowledge management as a discipline, Tippins (2003) argues that the same zeal has not been seen when it comes to applying knowledge management in their operations, despite the potential it holds for operational benefit (Kidwell, Vander Linde and Johnson 2000). However, there seems to be a compromise in this regard as some universities have actually introduced knowledge management to

support operations (King's College London 2005; University of Edinburgh 2005UniSA 2007).

In order to justify the need for knowledge management in universities, several university functions have been cited as possible areas that can reap the associated benefits. The following section tries to assess the role of knowledge management in such functions.

2.9.1.1 The Role of Knowledge Management in University Management and Administration

University management involves a range of functions in which procedures for carrying out those functions are developed. Some of these functions are found in corporate organisations while others are found in higher learning institutions only. Knowledge management has been linked to all these functions (Kidwell, Vander Linde and Johnson 2000). Knowledge management initiatives like those focused on, for instance communities of practice and knowledge management - information technology based systems have been cited for their role in ensuring effective and efficient ways of facilitating knowledge sharing among university staff (Calhoun 2005; Witt *et al.*, 2007). For instance, at the University of Denver, knowledge management has been applied in the human resources functions (Calhoun 2005).

2.9.1.2 Knowledge Management in Teaching and Learning

Teaching and learning are two sides of the same coin, where knowledge management has been cited as a critical tool. University staff in general and Lecturers in particular impart knowledge in their students through teaching. This function, according to Oosterlinck (2002) represents knowledge dissemination. Not only have universities introduced academic programmes for knowledge management but have also disseminated knowledge through the use of knowledge management tools in teaching and learning (Witt *et al.*, 2007). Knowledge management technologies used for such purposes include among others, chat technologies, e-mail and wiki technology (Murali 2005).

Within teaching and learning perspectives, e-learning has been another dimension in which knowledge management tools have been utilised (Cross and Adam 2007). The use of knowledge management tools in teaching and learning has also been extended to the Lecturers who offer lectures to dispersed students, (Witt *et al.*, 2007).

2.9.1.3 Knowledge Management and Research

One of the major activities found in universities is the production of knowledge through research. Oosterlinck (2002) argues that in knowledge management terms, research is knowledge creation. Thus knowledge creation or research is done at various levels including undergraduate students, postgraduate students and consultancy by university staff. The value of this research cannot be over-emphasised, as at a higher level represents the “service” mission of universities through knowledge transfer to society (Oosterlinck 2002; University of Glasgow 2006). However managing the research process and outputs has become a challenge (Chachage 2006:57; Oosterlinck 2001; Saossois 2001). Accordingly, Schuetze (2001) asserts that this challenge has emanated from the availability of many players within the knowledge production sector, that is, both academic and non-academic institutions, as well as the value that society has placed on knowledge. Given this pressure, Oosterlinck (2001) suggests that the management of academic research requires management processes like knowledge management to ensure “an appropriate context, structure and processes”, where:

context is related to the culture of and history that has unfolded within the academic institution... structure for appropriate organisational and incentive mechanisms, while process for day-to-day operations of knowledge creation and innovation management within the academic environment.

Oosterlinck (2001) further gives an overview of the University of Leuven, where the above approach for management of university research has, for a 29-year period, “done a remarkable job to manage the academic knowledge portfolio”.

2.9.1.4 Knowledge Management and Distance Education

Distance education, as opposed to face-to-face classroom interaction, is another way that has been adopted by universities for imparting knowledge. In this mode of education, knowledge management has also been identified to play a crucial role. Accordingly, Ubon and Kimble (2002) suggest that knowledge management facilitates access to knowledge resources like computer files, CD-ROM, videotapes, books, and necessary infrastructure like intranets. The potentials of knowledge management are also well addressed by Butcher (2007). In South Africa, ICTS at the universities of Pretoria, Stellenbosch and the Western Cape have been used to support Distance Education (Cross and Adam 2007).

2.9.1.5 Knowledge Management in University Libraries

One of the units within universities that has identified the benefits of applying knowledge management in university operations are university libraries (Williams *et al.*, 2004). There appears to be a lot of areas in which knowledge management is, and can be applied in university libraries (Shanhong 2000; Williams *et al.* 2004). One argument being advanced for the embracement of knowledge management in university activities in general and libraries in particular, is the fact that Librarians have, for a long time, been pursuing knowledge management (Broadbent 1998). However, an opportunity has emerged to extend their expertise not only limited to library functions but to all university functions (Morris 2001).

2.10 THE NEED TO RETAIN UNIVERSITY KNOWLEDGE

According to Oosterlinck (2002), universities from time immemorial have been practicing knowledge management based on the three mission statements of Teaching, Research and Service. Butcher (2007) agrees that “KM should be a fundamental objective of any educational institution, as learning is its core function and should be reflected in how the organisation operates”.

Having endeavoured to show the multi-tasks that are involved in running a university, indeed, while carrying out their duties, university staff (both academic and non-academic) create knowledge that is beneficial to society in general and the university in particular. Thus, with the understanding that knowledge retention is the preservation of relevant operational institutional 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).

There are many corporate institutions that have implemented knowledge management and retention programmes including Tennessee Valley Authority (TVA), Asian Development Bank (ADB), and Best Buy (Best Buy 2005). The concern here is to show evidence of knowledge retention and management initiatives by higher learning institutions.

2.10.1 Knowledge Retention and Management in Institutions of Higher Learning: International Overview

The advocacy on knowledge management in other parts of the world (North America, Asia and Europe) has been outstanding. The call started with corporate institutions and governments (Suurla Markkula and Mustajarvi 2002). In fact, the earlier cautions about knowledge management being a fad have been eroded by the response of so many institutions seizing the opportunity in knowledge management. Thus, higher learning institutions have also responded in a like manner. There are a number of higher learning institutions that have in one way or another engaged in the knowledge business.

With reference to universities, the management and retention of knowledge has become a reality. Several initiatives have been launched with several virtues associated with the application of knowledge management being advocated for

(Kidwell, Vander Linde and Johnson 2003). Knowledge management initiatives in universities have been launched addressing different aspects ranging from management of university knowledge emanating from research activities to knowledge retention for operational enhancements (Loh *et al.*, 2003; Oosterlink 2002; UniSA 2007; University of California 2006).

Taking the knowledge retention strand of knowledge management at the University of California, the Council of University of California Staff Assemblies (CUCSA) Workforce Evolution Work Group was formed in 2004 to study employee needs, interests and programmes (University of California 2006). While carrying out its mandate, CUCSA Workforce Evolution Work Group detected that over one-third of the university staff were due to retire and had posed a “risk of losing administrative and institutional knowledge”, an issue that could have led to inefficiencies, errors and costs to the University. As a solution, key knowledge transfer issues were reviewed and knowledge management strategies were proposed.

Another university that has identified knowledge management for purposes of retaining its knowledge capabilities is UniSA (UniSA 2007). Faced with knowledge loss mainly through an ageing workforce, UniSA has devised strategies for retaining vital knowledge by capturing and transferring “functional and technical expertise” (UniSA 2007).

Other Universities have even gone further by putting in place knowledge management strategies to guide and ensure achievement of their management initiatives. Among such universities are: King’s College, University of London; University of Edinburgh and Auckland University of Technology (King’s College, University of London 2005; University of Edinburgh 2005; Dewe 2007).

2.10.2 Knowledge Retention and Management in African Institutions of Higher Learning

In Africa however, not so much is explicit with regard to the adoption of knowledge management. Scholars have written on the subject and a few corporate institutions have also responded to the call (Kruger and Synman 2005a; Tobin and Franze 2005). However, very little can be accessed on governments and higher learning institution's efforts towards knowledge management. What is clearly observed however, is the call for the need to address various challenges that have confronted African universities (Sawyer 2004). Some of the challenges are recipes for knowledge management programmes (Seal 2005; Sawyer 2004).

For instance, within the African universities, the loss of knowledge is evident in brain drain (Mushonga 2005; Oni 2006). The University of Zimbabwe is no exception as Mushonga (2005) indicates that vacancy rates in Zimbabwe's state universities range between 50% and 70%, with those leaving the universities citing among other reasons low remuneration packages. He argues that the situation in Zimbabwe's universities applies to most African universities. He further argues that if no measures to curb the scourge of brain drain are put in place, the result will be continued declines in academic standards, dwindling research output and perpetuated staff attritions (Mushonga 2005). While writing on brain drain in Nigerian universities, Oni (2000) contends that African universities are losing their capacity to build African economies and institutions due to brain drain – the loss of tacit knowledge.

Similar sentiments to those expressed by Mushonga (2005) and Oni (2000) are echoed by Seale (2005). While writing on management capacity by executive leaders of South African higher learning institutions, he noted that most universities have been disparaged over inefficient and ineffective organisational operations and that universities are now operating in the knowledge society which demands university leadership to establish suitable "effective institutional responses". Though it is evident that African universities have felt the threats of knowledge

loss, very few initiatives have been launched (Sawyer 2004). Sawyer (2004) notes and provides that the challenges facing the African universities emanate from the revolution in the global economy which has highlighted the importance of “information and knowledge to production, management and the services”. Sawyer (2004) also points out that this revolution has been facilitated by:

- increasing pace of globalisation;
- the “commodification” of knowledge and the centrality of its generation and application to social and economic development;
- the increased openness of nations borders to flows not only of goods and services but of knowledge and information;
- the enhanced mobility and expanded market for high skill labour; and
- the new organisational forms and delivery modes resulting from ICT revolution.

To the above challenges, Sawyer (2004) justifies the need for adopting change management programmes based on managing knowledge in universities.

Tettey (2006) in his study about the retention of university academic staff in Africa echoed similar concerns as above. In fact, Tettey (2006) in his solution to these problems recommended the need for mentorship programmes, an aspect recommended for knowledge retention.

In view of the above advocacy for the need to retain and manage university knowledge, it should be noted, however that knowledge management before it was what we know it today, manifested itself in many ways (Broadbent 1998). This assertion is also supported by the UNESCWA (2003).

Thus, based on the above assertion, some African universities have tried to do a lot in terms of knowledge management. For instance, there has been some efforts by the South African Universities Vice-Chancellors Association to “address the lack of management capacity and absence of “managerial culture” by implementing

higher education leadership and management programmes (Seal 2005). However, authors such as Jackson *et al.*, (2003), argue that “whatever approach has been adopted there still remains the problem of knowledge transfer into the work place and measurement of individual and organisational impact”.

Notwithstanding, South African universities through the Carnegie Project have “training and mentorship programmes targeted at the development of new generation of faculty members”, Cloete and Galant (2005). The authors in their report, *Capacity Building for the Next Generation of Academics*, reviewed five universities with programmes aimed at retaining knowledge through mentorship programmes. 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.

There has also been some utilisation of knowledge management – IT based solutions in distance education for the University of Pretoria and others as noted by Cross and Adam (2007).

From the above, there could have been efforts to address knowledge retention and management in African universities. However, concerted, integrated and cohesive approaches have not been adopted. Thus there is need to explicitly introduce knowledge management to address these raised knowledge retention and management concerns.

2.11 THE KNOWLEDGE MANAGEMENT POLICY

Regardless of the approach adopted when establishing a knowledge management program, it is highly recommended that it must be done in a well coordinated and systematic manner (UNESCWA 2003; University of Edinburgh 2003). 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 policy in organisational management has for a long time remained vital and is viewed as a mechanism for instituting organisational control over resources (Buchanan and Huczynski 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 programs 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 that:

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. 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 well being. It is based on the organisation mission, primary goals, and strategy”. Mohrman and Finegold (2000) also inform 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”. Moreover, Mohrman and Finegold (2000) note that:

becoming a knowledge company demands much more than programs and technologies. The focus on knowledge must be built into the fabric of the organisation. For most companies, successful competing on knowledge demands fundamental shifts in norms, values and behavior.

The above argument is further strengthened 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.

Having established the rationale for creating a knowledge management policy or strategy, the following section reviews various knowledge management policies and strategies adopted by various institutions.

2.12 EXAMPLES OF KNOWLEDGE MANAGEMENT POLICIES AND STRATEGIES ADOPTED BY SELECTED ORGANISATIONS

There are many institutions both in the corporate world and higher learning institutions that have implemented knowledge management initiatives (Gordon *et al.*, 2000; Jones 2002; Palmer 2007). The following section provides the policies and strategies that some of these institutions have put in place.

2.12.1 Examples of Corporate Knowledge Management Policies and Strategies

This section presents examples of knowledge management policies adopted by corporate institutions.

2.12.1.1 The Asian Development Bank

Among organisations that have implemented knowledge management policies include the Asian Development Bank (ADB) (Asian Development Bank 2004). The ADB's (2004) framework on knowledge management recognises the vital role of knowledge transfer for achieving its objectives. Through its long term strategic framework (2001-2015), ADB committed itself to being a learning institution and a primary source of development knowledge in Asia.

The framework was prepared as a guide to transform ADB into a knowledge-based organisation. It "lays down the goals, purposes, actions, outputs and outcomes

necessary for the transformation, starting with improving the cultural and procedural aspects of knowledge management within ADB”. The guidelines for the framework are based on:

- a) Fostering a knowledge-supportive environment – an aspect dealing with corporate culture.
- b) Ensuring results orientation and continued improvements - an aspect dealing with monitoring and evaluation.
- c) Enhancing operational relevance – an aspect dealing with operational effectiveness.

With a monitoring and reporting mechanism to review progress quarterly, the components of the knowledge management framework include:

- Improved organisational culture for knowledge sharing;
- Improved management system;
- Improved business processes and information technology solutions for knowledge capture, enrichment, storage, and retrieval;
- Well-functioning “communities of practice”; and
- Expanded knowledge sharing, learning and dissemination through external relations and networking.

This framework is an example of a knowledge management policy. Its scope includes corporate culture considerations for policy compliance and acceptance. It also brings out issues of monitoring and evaluation for assessing and ensuring policy effectiveness for operational relevance. Though it has knowledge transfer and capturing components of knowledge retention, it does not possess critical knowledge loss assessment mechanism, an indication that the policy was not designed to enhance knowledge retention per se but to enhance explicit knowledge management for operational benefit.

2.12.1.2 The United States Department of the Interior, Bureau of Land Management

Another policy document that is of importance to the study is that by the United States Department of the Interior, Bureau of Land Management (2005). This document is a knowledge management and retention policy whose objectives are:

- (a) To encourage knowledge sharing across the organisation; and
- (b) To preserve mission-critical knowledge at risk of being lost, mostly through attrition of Subject-Matter Experts (SME's).

The document begins by defining knowledge and knowledge management. It then presents the policy drivers and a background to the policy through identification of knowledge management initiatives dating back to 1997. In 2003, a memorandum of understanding for knowledge sharing was signed. The document further informs of the BLM workforce plan which has the knowledge retention and transfer strategies. The policy implementation framework has the following components:

- (a) Knowledge sharing / transfer – dealing with both tacit and explicit knowledge.
- (b) Knowledge mapping / inventory – dealing with access to information (explicit) and expertise (tacit).
- (c) Communities of practice (knowledge stewardship) – addressing the interdisciplinary networks focused on common issues.
- (d) Document management (records and directives) – dealing with sharing of policies and operational know-how (and know-why).
- (e) Technology enablers – dealing with knowledge management technologies.

This policy document can be viewed as one designed to foster knowledge retention. Not only does it indicate components of a knowledge retention programme, but it also indicates the retention of another component of knowledge - explicit knowledge through its component of document management. This policy has an integrated approach to knowledge management as it considers both tacit

and explicit knowledge. The policy, however, falls short of, among other issues, corporate culture consideration and critical knowledge loss assessment plan.

2.12.1.3 International Fund for Agricultural Development (IFAD)

Representing Non-Governmental Organisations (NGOs), IFAD is an international development organisation that has made use of knowledge management as a business tool. In developing the knowledge management strategy, IFAD (2007) noted that:

In fulfilling its mandate to enable poor rural people to overcome poverty, IFAD deals with many types of knowledge. The most critical knowledge for IFAD is related to “developmental practice”. It is embedded in IFAD-sponsored programmes and projects, its staff and partners and, more broadly, in the development community working on issues of rural poverty and rural development, including poor rural people and their own organisations...

The above recognition of the need to manage its knowledge not only necessitated the need for a knowledge management strategy but the strategy has been viewed as a solution to mitigating challenges faced by IFAD in achieving effective operations. Thus, the strategy addresses four components presented as follows:

- Strengthening knowledge-sharing and learning processes.
- Equipping IFAD with a more supportive knowledge-sharing and learning infrastructure.
- Fostering partnerships for broader knowledge-sharing and learning.
- Promoting a supportive knowledge-sharing and learning culture.

As presented in its knowledge management strategy document, IFDA (2007) as an institution has noted the changing global economy which requires new management approaches by taking advantage of the value that emanates from managing institutional knowledge.

2.12.2 Examples of Knowledge Management Policies and Strategies Adopted in Higher Learning Institutions

This section presents examples of knowledge management policies and strategies adopted by higher learning institutions.

2.12.2.1 The University of Edinburgh

One of the universities that has explicitly recognised and introduced knowledge management in its management framework for operational benefit is the University of Edinburgh. In the year 2003, the University appointed a Vice Principal for Knowledge Management and Librarian to the University (University of Edinburgh 2007).

From the appointment of the Vice Principal for Knowledge Management, there has been a strategic plan developed for the knowledge management activities in the University. The strategic plan views knowledge management as “critical to the fulfillment of the University’s mission” (University of Edinburgh 2003). Based on this recognition, The University of Edinburgh’s knowledge management strategy has been described as “a holistic approach to the management of information created in and used by the institution to create better leverage of the total knowledge assets of the University to generate innovation in research, learning and teaching, and efficiency and effectiveness in administration” (University of Edinburgh 2003).

Regarded as “a coherent framework [that] presents agreed directions for knowledge and information functions that align to the mission and objectives of the university”, the scope of the Knowledge Management Strategy for the University of Edinburgh includes the following:

- The management of scholarly resources;
- Information support services;
- Educational technologies and infrastructure to enhance teaching and learning;

- Transferable skills;
- Core infrastructure, information and communication technology services, and networking;
- New and emerging technologies; and
- Administrative systems and processes.

The knowledge management strategy for Edinburgh University is a comprehensive document that deals with matters affecting operations of the University. It deals with both the management of tacit and explicit knowledge based on identified priorities.

2.12.2.2 Kings College London, University of London

In 2005 Kings College London, a University College, developed a five year information and knowledge strategy dubbed “Living Knowledge 2010” to support its Strategic Plan (Kings College London 2005). In introducing this strategy, the College longed to:

- Meet increased user expectations for information access and support;
- Take advantage of new and emerging technologies;
- Stay competitive within the research and teaching sectors;
- Be more effective as a learning organisation;
- Work in partnership with the local communities; and
- Recognise its responsibilities in a global society.

The institution decided to develop the strategy in order to “support the creation, use, sharing and preservation of information and knowledge in support of research, teaching and administration” (Kings College London, 2005:2). In order to support the above identified functions at the College “The Living Knowledge 2010” has the following goals:

- Robust research and learning environments which are accessible twenty-four hours a day and provide access to a comprehensive range of resources;

- Ongoing commitment to knowledge transfer to the wider community with specialist support in the management of intellectual assets;
- Systematic delivery of world class information services which are designed around King's diverse need and include the local community;
- Investment in workforce development so that all staff and students are equipped to work and learn in a knowledge-based society;
- Explicit recognition of the value of sharing knowledge and information;
- Holistic management of business processes to ensure efficiency, business continuity and access to authoritative, consistent and up to date corporate information;
- The availability of a resilient and secure network and communications infrastructure; and
- The cost effective and legally compliant management of corporate and research information.

It was envisaged that once commitments to the strategy are put in place, Kings College would reap the following benefits:

- To achieve effective knowledge and information leadership;
- To have support for world class research;
- To have a flexible and innovative learning support;;
- To have a simple and accessible working environment; and
- To have comprehensive information and knowledge resources.

The Kings College strategy on information and knowledge management is a comprehensive approach to addressing the diverse functions in a university. It recognises the functions of research, teaching and administration and management.

2.12.2.3 Auckland University of Technology

Like the University of Edinburgh and Kings College, Auckland University of Technology (AUT) has also jumped on the wagon in recognising the need to

manage knowledge in the University. According to Dewe (2005), once the recognition for introducing knowledge management in the University was established, a working group was put in place whose purpose was to:

Create and maintain a framework in which all members of the university are encouraged to share and use knowledge for the benefit of teaching, learning, research and business goals and which allows them to seamlessly and easily connect to the information they need, whenever they need it and wherever it is located.

For purposes of strengthening the university's "position as a university with a distinctive approach to knowledge management" Dewe and Wright (2007) pointed out that the developed knowledge management framework at Auckland University of Technology has been recognised by placing the following priority in the University's Strategic Plan:

Creating a framework for sharing and using knowledge, acquired through the University's operations, to enhance learning, teaching, research and other activities.

Knowledge management at AUT has been adopted to enhance the management, teaching and research operations at the university. With this focus, the Knowledge Management Working Group, as indicated by Dewe (2005:5) developed knowledge management goals that aimed to address the following challenges identified at the university:

- Avoid wasteful duplication of resources;
- Eliminate silos of information, where possible;
- Avoid staff working with incomplete or out-dated information;
- Avoid loss of opportunity;
- Informed decision-making;
- Improve information literacy skills of the researcher, learner, administrator;
- Increase accessibility of recorded internal knowledge;
- Discover, use and share recorded worldwide (external) knowledge; and
- Assess when integration of knowledge sources is appropriate.

2.12.3 Synopsis of Examples of Knowledge Management Policies and Strategies

The highlighted knowledge management strategies and policies indicate the diversity of institutions that have underscored the need for managing knowledge. The policies and strategies have also outlined the need for an integrated approach to the management of knowledge by recognising an approach that considers both tacit and explicit knowledge in addressing various challenges. In a nutshell, the highlighted policies and strategies, viewed collectively, provide enough ground to develop a knowledge management policy to enhance knowledge retention at an institution.

2.14 SUMMARY OF CHAPTER TWO

This chapter has shown the strategic importance of managing knowledge in organisations. It has established a case for retaining university knowledge. A systematic presentation of drivers for knowledge retention, and citation of what other universities are doing about knowledge retention has been provided. As such, the chapter has created enough ground and a building block for coming up with guidelines for a knowledge management policy to enhance knowledge retention.

The next chapter, Chapter Three is a detailed presentation of the research story as used in this dissertation.

CHAPTER THREE

RESEARCH APPROACH, DESIGN AND METHODOLOGY

3.0 INTRODUCTION

Research is a complex undertaking that, without a systematic approach, could be difficult to achieve. This chapter therefore, discusses in detail the research approach and design employed in this study.

3.1 RESEARCH APPROACH

As already observed in Chapter One, research approaches can be distinguished in many ways. One such feature used to distinguish research is by classifying it as either quantitative or qualitative (Myers 2007). This study employed both quantitative and qualitative research approaches, an approach known as mixed research (Creswell 2003; Johnson and Christensen 2004). 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 (Creswell, Fetters and Ivankova 2004; Johnson and Christensen 2004). The combination of quantitative and qualitative research approaches was best for this study in order to make use of multiple methods for data collection, interpretation and understanding of research findings within a natural setting (Anderson and Arsenault 1998:119,134; Creswell 2003). This research approach is also common in knowledge management research due to the fact that it enables the researcher to identify processes, systems as well as facilitating the determination of effective practices (Squier and Snyman 2004).

3.2 RESEARCH DESIGN

According to Johnson and Christensen (2004) “the outline, plan, or strategy” used to arrive at findings for a research question is called the research design. Several such designs exist for various research purposes and one such design is the case study (Hancock 2002; Myers 2007; Tellis 1997).

3.2.1 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; Tellis 1997). There has been a notable increase in the usage of the case study research approach (Bachor 2000; Myers 2007; Rowley 2002). The increase in the usage of the case study approach has been attributed to the fact that it allows for in-depth investigation of a problem (Flyvbjerg 2003; Hancock 2002). Bachor (2000) contends that the rationale for undertaking 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”. In support of Bachor’s (2000) view, Zucker (2001) stresses that “the key features of a case study are its scientific credentials and its evidence base for professional applications”. As for Rowley (2002), the wide usage of case study research is mainly due to its capacity to “offer in-sights that might not be achieved with other approaches”. To sum-up the fundamental nature of case study as a research approach, Zucker (2001) stresses that “the goal of the case study method is to describe as accurately as possible the fullest, most complete description of the case”.

Given the above importance, advocacy has been made for the usage of the case study approach. For instance, Rowley (2002) notes that case study research usually “emerges as an obvious option for students and other new researchers who are seeking to undertake ...research ...based on their workplace or the comparison of a limited number of organisations”. 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 a highly versatile research method and employs any and 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
- Puts emphasis on 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 case study research has been commended for its virtues, it has its shortcomings. For instance, Becker (2005), Hancock (2002) and Soy (2006) indicate that some of the short-comings of case study research include biases of research findings mainly due to over exposure of studied cases and that the small number of studied cases are difficult to generalise.

Besides the weaknesses associated with case study research identified above, Soy (2006) 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, the 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 UNZA.

3.3 SAMPLING PROCEDURE AND STUDY SAMPLE

According to Johnson and Christensen (2004:197) “Sampling is the process of drawing a sample from a population”. Drawing from the “principle fundamental of

mixed research” (Johnson and Christensen 2004:193) as a mechanism for addressing the validity of a research undertaking, this study had two sample frames. The first sample frame comprised participants in the survey while the second sample frame constituted participants who were interviewed. The researcher drew two distinct samples from the two sample frames indicated above in order to comply with the need for a well executed study (Marshall and Rossman 1995).

3.3.1 Stratified Random Sampling

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 sample frame comprised the academic members of staff in all the nine faculties and one directorate totalling four hundred and thirty-four (434). UNZA has three directorates and among them the Institute for Economic and Social Research (INESOR) is the only one that undertakes academic tasks such as teaching and research and thus it was picked for this study. The list for all the academic members of staff was obtained from the Computer Centre at UNZA.

Once the population was identified, the actual sample of participants in the survey totalling two hundred and five (205) was scientifically determined using a table to determine samples of known populations by Payne and Payne (2004). Actual percentages of participants in each of the ten stratum were calculated as indicated in Table 3.1.

Table 3.1: Population and Sample Frame for the Survey Data Collection

No	Stratum	Population of each stratum	% of each stratum from the Total Target population	Actual no. of respondents from each stratum
1	Agriculture	38	9	19
2	Education	56	13	27
3	Engineering	34	8	16
4	Humanities	101	23	47
5	Law	13	3	6
6	Medicine	55	13	27
7	Mines	19	4	8
8	Natural Sciences	74	17	35
9	Veterinary Medicine	29	7	14
10	Institute for Economic and Social Research	14	3	6
	Total	434	100	205

After the number of the actual participants was determined from each stratum, Microsoft Excel was used to randomly select the individuals who participated in the research. The names of the respondents were entered into an Excel spreadsheet where a random selection was performed using the RANDBETWEEN () function. The random numbers that were generated corresponded to the name of the selected academic member of staff.

3.3.2 Purposive Sampling

Apart from the stratified random sampling used to identify participants in the survey, sampling for the participants in the interviews was achieved through a non-probability sampling technique called purposive sampling. Purposive sampling 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 deemed suitable for the ability to provide

required information (Johnson and Christensen 2004:215). Table 3.2 below indicates the respondents who participated in the interviews:

Table 3.2: Interview Participants

No.	Title of Interviewee and Unit
1	Dean, School of Education
2	Dean, School of Law
3	Dean, School of Medicine
4	Dean, School of Natural Sciences
5	Dean, School of Veterinary Medicine
6	Director, Directorate of Distances Education (DDE)
7	Director, Computer Centre
8	Director, Directorate of Research and Graduate Studies (DRGS)
9	Librarian, University Library
10	Deputy Registrar, Academic
11	Deputy Registrar, Administration
12	Deputy Registrar, Council
13	Staff Development Officer

The above list comprised of individuals with diverse roles that were deemed adequate and representative of most university operations. Interviewing the above participants was crucial for this study 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 and as such, it was necessary to purposively select these individuals.

3.4 DATA COLLECTION METHODS

While acknowledging the fact that qualitative case studies research makes use of different methods for data collection, this research study employed the mixed method approach in order to strengthen the evidence and validity of the study (Johnson and Christensen 2004:46,193). The sources of data for the research were both primary and secondary. Depending on the sources of data, different data collection methods were used.

3.4.1 Secondary Sources of Data

Secondary sources of data include reports, books and articles that contain information generated for other purposes other than the original one (Johnson and Christensen 2004:192). Thus a review of both published and unpublished literature was conducted to address the following research objectives:

- i. Determination and assessment of other knowledge management/retention policies by other institutions;
- ii. Determination of what is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa; and
- iii. Establishment of tools, methods and techniques for knowledge assessment, acquisition and transfer.

The other study objectives (See section 3.4.2 below and Appendix I) were addressed using primary sources of data.

3.4.2 Primary Sources of Data

Primary data was data collected for the first time by the researcher for purposes of finding answers to the research objectives (Anderson and Arsenault 1998). As such, this dissertation collected primary data through questionnaires and interviews. The following were the objectives that were addressed through primary sources of data:

- i. To identify knowledge assessment practices at UNZA;

- ii. To identify knowledge acquisition practices at UNZA; and
- iii. To identify knowledge transfer practices at UNZA.

As already stated, this study employed mixed research to collect data. As such, the survey data was collected using a questionnaire while the interview data was collected using an interview guide.

3.4.2.1 The Questionnaire

There is no doubt that one of the most famous tools for data collection is the questionnaire (Anderson and Arsenault 1998:170). A questionnaire was designed for academic members of staff whose general aim was to gather information on known practices for knowledge retention, assessment, acquisition and transfer within UNZA.

The questionnaire was designed in such a way that it was mainly based on the objectives of the study. In order to avoid ambiguity and enhance clarity of what was required from the respondents, the questionnaire had two broad parts. The first part was an introduction in which the researcher introduced himself, the research topic and objectives, how the respondent was chosen as well as instruction for answering the questions in the questionnaire (see Appendix II). The second part contained the research questions and had five sections: personal details; knowledge retention; knowledge assessment; knowledge acquisition; and knowledge transfer. A definition for knowledge retention, knowledge assessment, knowledge acquisition and knowledge transfer was provided at the beginning of each section in order to guide respondents and make them understand what was required of them. Related concepts were addressed in the relevant section of the questionnaire. The adherence to such a design enhanced the chances of completion by respondents (Anderson and Arsenault 1998:170).

The content of the questionnaire was mostly determined from the literature review. Both closed and open ended questions were provided. With reference to closed

questions, multiple choice and Likert scale questions were provided in which respondents ticked the appropriate choice. On the other hand, spaces for open ended questions were provided for questions where explanations and details were required. The questionnaire had a total of thirty-four (34) items on fifteen (15) pages and thus was relatively longer. Burchell and Marsh (1992) and the Forest Products Society (2003) verified that high non-response rates are usually experienced when using lengthy questionnaires. The length of the questionnaire was to some extent as a result of the researcher having acknowledged the fact that his audience was of different professional and academic backgrounds and as such the researcher needed to include some cross checking questions. However, the researcher held the view that all the questions were necessary if the research objectives were to be adequately answered.

3.4.2.2 Pre-testing of Data Collection Tools

Pre-testing of data collection tools has been described as one of the major tasks that should be employed before the actual data collection takes place (Anderson and Arsenault 1998:178). The researcher recognised the fact that the respondents were from different academic orientation such as the arts and sciences. As such, pre-test questionnaires were distributed to three respondents: one in each of the following schools: Education, Humanities and Social Sciences; and Engineering. The three schools were chosen as they presented different backgrounds. Literature informs that the number of individuals that can be used for pre-testing can range from two to ten, and that the pre-tested individuals should reflect the actual population of respondents that would be involved in the actual study (Bell 1993:84; Borg and Gall 1989; Cohen, Manion and Morrison 2000; Johnson and Christensen 2004:177). After the pre-test, some questions were modified to include aspects such as more answer preferences and cross-check questions. The interview guide was pre-tested by interviewing the head of the sections for the Purchasing unit and the Bursar's department.

Two hundred and five (205) questionnaires were administered to respondents with a deadline for receiving them back as 9 May 2008. The questionnaires were hand delivered. However, data collection continued until the month-end of June 2008 when the researcher collected a total of one hundred and twenty-four (124) questionnaires.

3.4.1.2 The Interviews

Researchers also use interviews as another tool for data collection (Anderson and Arsenault 1998:190). Interviews were conducted in the months of June and July 2008. For purposes of consistency on data collected, 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 four sections addressing knowledge retention, assessment, acquisition and transfer (See Appendix III). The interview guide had pre-determined questions to which follow-up questions were made by way of probing and prompting. The researcher ensured that the discussion bordered within the purpose of the interview as recommended by Anderson and Arsenault (1998:170).

Most of the interviewees were interviewed in their offices at UNZA except for the Librarian and the Dean of the School of Law who were interviewed in the Senate Committee Room II and School of Law Board Room respectively. For the reason that there was an impasse at UNZA, appointments were secured by the researcher before the interviews to enable the interviewees to prepare adequately for the interviews. The prior-preparation by interviewees was deemed necessary by the researcher as a way to obtain well thought responses. The minimum duration of the interview sessions was about thirty minutes. The deliberations of the interview sessions were recorded by way of taking notes and using a tape recorder.

3.5 DATA ANALYSIS

The collection of data usually is followed by its analysis. Data analysis refers to the process of generating value from the raw data (Johnson and Christensen 2004:500). Since this research employed a mixed approach to data collections both the survey and the interviews data were analysed using appropriate data analysis techniques. There are a number of data analysis techniques that can be employed to analyse qualitative and quantitative data.

According to Lewins and Gibbs (2005) Qualitative Data Analysis (QDA) “is the range of processes and procedures whereby we move from the qualitative data that have been collected into some form of explanation, understanding or interpretation of the people and situations we are investigating”. Bryne (2001) informs that qualitative studies are unique and often employ unique data analysis strategies. Taylor-Powell and Renner (2003) also echo similar sentiments as they indicate that “there is no single or best way” for achieving order and understating when analysing and interpreting qualitative data but certainly it “requires creativity, discipline and a systematic approach”. Thus Bryne (2001) informs that “qualitative data analysis consists of identifying, coding, and categorising patterns found in the data”. For Taylor-Powell and Renner (2003), the analysis process involves the following steps:

- Get to know your data;
- Focus the analysis;
- Categorise information;
- Identify patterns and connections within and between categories; and
- Interpretation – bring it all together.

Although it is agreeable that a systematic approach as outlined above is necessary for data analysis, Taylor-Powell and Renner (2003) further indicate the choice for either analysing qualitative data manually or using a computer program such as a word processing program, relational database management program (for example

Access) or a special qualitative data analysis program depends on the “size of your data set, resources available, preferences and level of analysis needed or warranted”. There are a number of specialised qualitative data analysis software that researchers can be able to use. Among them are Atlas/ti, Nudist and NVivo (Barry 1998; Jones 2007).

On the other hand, quantitative data analysis involves analysing quantifiable data. Because quantitative data is usually voluminous, application of computer software that aids the analysis process has been in use for a long time. Common software used includes SPSS® (Jones 2007).

While it has been agreed that specialised qualitative data analysis software enhance the analysis of large volumes of data (Bryne 2001; Pope, Ziebland and Mays 2000), researchers have been urged to be mindful of the fact that qualitative studies are not undertaken with a view to generalise findings and that responsibility of interpreting the process of analysis is entirely their jurisdiction (Bryne 2001; Pope, Ziebland and Mays 2000). The researcher took note of this guidance in the data analysis process in this study and thus limited the use of software to a word processing program (Microsoft Word®).

3.5.1 Survey Data Analysis

Pre-coding of the questionnaire was done while data was being collected. After the collection of data was complete, emerging responses that were not catered for in the initial coding were added to the code. 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 entering into the SPSS® software. Within the survey, 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 represented 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.

3.5.2 Interview Data Analysis

In collecting the interviews data, the researcher took notes and used a recorder to record the interview sessions. The recording of the interview sessions in note form and on a recorder was undertaken to ensure complete capture of discussions. Transcription of recorded interview sessions in a recorder was done but only for sections which were identified to be crucial for the study. This part transcription complemented the hand written notes during the interview sessions.

This study used Microsoft Word® computer package in the transcription of the interview sessions. Content analysis was then applied where the researcher read all the thirteen transcripts in order to identify themes (Hancock 2002). 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.

After content analysis was complete, the use of Microsoft Word® made it easier to group similar themes together by simply copying and pasting related themes after which the researcher analysed the data. The level of computer data analysis applied was only limited to Microsoft word. Specialised qualitative data analysis software such as NVivo was not used in the data analysis process mainly because the researcher did not come across any such software.

3.6 VALIDITY AND RELIABILITY OF THE RESEARCH FINDINGS

Issues of validity in research are the basis upon which the worthiness of research findings can be determined (Creswell 2003:195). The case study research approach does not dictate the kind of data (qualitative or quantitative) that a particular case may collect (Meier and Pugh 1986). Both quantitative and qualitative data were collected and analysed. The rationale for the collection of both quantitative and qualitative data in case study research is based on the understanding that when integrated, quantitative and qualitative data become sufficient enough “to capture the trends and details of that situation” and therefore, “yield a more complete analysis, and they complement each other” (Creswell, Fetters and Ivankova 2004).

Based on the above understanding, there are established criteria that are used to assess validity and reliability in both quantitative and qualitative studies. However, noting that mixed data collection methods can be used in case studies, Johnson and Christensen (2004:249) indicate that two schools of thought exist on the need to apply the issue of validity in qualitative research. Where as the other group, for instance, Smith (1984) argue that validity could be only applied to quantitative research, others contend that just as validity is useful in quantitative research, so is the case with qualitative research (Brock-Utne 1996). Thus this debate has led to the identification of equivalent aspects for the assessment of validity and reliability in quantitative and qualitative research (Johnson and Waterfield 2004). Table 3.3 indicates the equated criteria for determining validity and reliability in both quantitative and qualitative research.

Table 3.3: Equivalent Assessment Criteria for Quantitative and Qualitative Research

Quantitative research criteria	Qualitative research equivalents	Definitions
Internal validity	Credibility	When multiple realities revealed by study participants are represented as adequately as possible, so that those who live the experience instantly recognize its description and interpretation (Sandelowaki 1986)
	Truth value	Has the researcher established confidence in the truth of the findings for the subject ... and the context in which the study was undertaken? (Krefting 19991, p. 215)
External validity	Transferability	The ability to transfer working hypotheses between different settings (Murphy et al. 1998)
	Applicability	The degree to which findings can be applied to other settings or groups; the ability to generalize to larger populations (Krefting 1991)
	Fittingness	When findings from the study fit contexts outside it (Mulhall 2000)
Reliability	Dependability	Accounting for variability in the phenomena studied or changes in research design employed because the iterative process of inquiry (Marshall and Rossman 1999)
	Auditability	The ease with which the reader can check the pathway of decisions, or 'audit trail', taken by the researcher (Cutliffe and McKenna 1999)
Neutrality	Confirmability	Neutrality of the data, not the researcher, so that others reach the same interpretations of meaning and significance as the original researcher (Chard and Gaberson 2001)

Adapted from Johnson and Waterfield (2004)

Johnson and Christensen (2004:249) also echo the above assessment criteria as they stress that validity in qualitative research refers to research with the following attributes:

- Plausible;
- Credible;

- Trustworthy; and
- Defensible.

According to Johnson and Christensen (2004:249) and Johnson and Waterfield (2004), a number of strategies can be used to achieve the above presented validity and reliability assessment attributes in qualitative research. These include sampling, respondent validation, triangulation, audit trail and reflexivity (Johnson and Christensen 2004:249; Johnson and Waterfield 2004). The strategy used for this study was triangulation (Creswell, Fetters and Ivankova 2004). According to Johnson and Waterfield (2004) “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 and interviews, and different techniques were used to analyse the quantitative and qualitative data collected. 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).

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 in as far as reliability of data collected was concerned, there was consistence. Further, every step that was taken during the data collection process was recorded. 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. Thus, it is possible to replicate the data collection methodology.

3.7 RESEARCH ETHICAL CONSIDERATIONS

One of the major cautions that each researcher must observe before undertaking any research involves consideration of ethics within which to carry out the research (Creswell 2003). Knowing too well that the researcher was an employee at UNZA and that any sources of data used for the study could have consequences, permission was requested and granted to conduct interviews and use documentation relevant for this study. (See Appendices IV and V)

3.8 EVALUATION OF THE RESEARCH METHODOLOGY

It is understood that any research methodology has its own challenges and this research study is no exception. A number of challenges were faced. Among those faced was the response rate for the survey. Ngulube (2005) notes that response rate is a concern for most surveys, however ability to report on it reflects the quality of the survey. Thus, taking this stance, 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 on questions such as question twenty-four (See Appendix II) in the questionnaire where respondents were required to indicate whether a knowledge transfer activity “existed” and was “used” the researcher normalised situations where the respondent answered ‘No’ on “exist” but did not give an answer on “used” by ticking “No” on “used”. For item non-response for questions that were not attempted at all, the researcher considered such questions as unanswered and labelled them “non-response”. On the other hand, unit response was more observed than item non- response. Out of the two hundred and five (205) questionnaires distributed, the researcher was only able to collect one hundred and twenty-four (124) questionnaires. Thus, only sixty per cent (60%) of the total distributed questionnaires were collected.

A number of reasons could be attributed to the high non-response rate incurred in this study. Firstly, the questionnaires were distributed at the time the University had opened for the first semester of the 2008 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. Thus, although the earliest date the researcher had requested respondents to return the questionnaire was 9 May 2008, this target was not achieved. As a result, extensions were made. Numerous visits were made to respondents as reminders. Depending on personal preference, phone calls and SMS were used as reminders to those respondents who wished to be reminded in such a manner. Despite the efforts made, some respondents were reported to have gone on leave without returning the questionnaires while others kept on promising to return the questionnaires but to no avail.

Secondly, just after the University opened in April 2008, there was a go-slow as Trade Unions in the University urged their members to work slowly while they were negotiating for better conditions of service. Thus, it was difficult to find respondents in their offices. This problem was equally faced with certain heads of units that the researcher needed to interview. The go-slow continued until the end of July 2008 when the University officially went on recess for three weeks. The recess was further extended to 21 September 2008.

Despite the above challenges, the combination of the data collection methods was a good approach in view of the research problem investigated and the combination of different types of employees in the University. For instance, the researcher was able to note that tasks for academic staff and those for support staff (as provided by the interviewees) were more less a situation of guns and roses, except in few situations. While the survey was conducted on the academic members of staff, the number of tasks performed by this group of staffs are different from those performed by, for instance, support staff in the Computer Centre or the Library, let alone those in the Bursar's department, Human Resources units and the University

Clinic. However, this was well complemented by the interviews, where both heads of academic units and non academic units were interviewed.

It may be useful for anyone wishing to undertake a similar research under similar environments to be mindful of peak periods in terms of work load. It may be necessary to probably have focus group discussions with support staff or better still to have two questionnaires designed for the academics and supports staff to enhance their response rate. Notwithstanding, and considering that the survey and interview inquired on the same issues, the researcher was able to form a pattern of consistence on the results obtained.

3.9 SUMMARY OF CHAPTER THREE

This chapter presented the methodology used in this study. The approach used for selection of respondents and interviewees has been explained, methods used for data collection have been discussed and an evaluation of the methodology has been provided. The next chapter, Chapter Four, presents findings of the study based on data collected through document review, interviews and questionnaire.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.0 INTRODUCTION

The previous chapter addressed the methodology used in data collection for the study. The case study approach employed both qualitative and quantitative methods for data collection. The qualitative methods included document review and interviews while the quantitative method involved the administration of a questionnaire to academic members of staff.

This chapter presents findings of the data collected for the study. Data was collected based on the objectives of the study as they appear in Appendix I. The first section presents findings from the document review. This is followed by findings of the survey on academic members of staff. The last findings presented are those for the interviews carried out with various heads of units at UNZA.

4.1 FINDINGS FROM REVIEWED DOCUMENTS

Various documents were reviewed including books, articles and reports. The researcher made use of the UNISA and the UNZA libraries to access various documents that were deemed relevant to the study. A number of electronic resources were accessed through the mentioned libraries. The documents reviewed helped the researcher to deepen the scope of his understanding of the problem under investigation and also provided answers to the following objectives of the study:

- Determine and assess knowledge management/retention policies by higher learning institutions;
- Determine what is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa; and

- Establish tools, methods and techniques for knowledge assessment, knowledge acquisition and knowledge transfer.

The following section presents summary findings on the above objectives as reviewed in Chapter Two of this study.

4.1.1 Knowledge Management/Retention Policies in Higher Learning Institutions.

The documents reviewed as presented in Chapter Two covered various university functions in which knowledge management activities have been recommended and, in some cases, already adopted. Table 4.1 below provides a summary of findings on knowledge management/retention policies available in various universities:

Table 4.1: Higher Learning Institutions with KM Policies/Strategies

Institution	Purpose of KM policy/strategy
The University of Edinburgh	Knowledge Management strategy for managing information resources and leveraging knowledge assets to generate innovation in research, learning and teaching and effectiveness in administration. (University of Edinburgh 2005)
Kings College London, University of London	“Living knowledge 2010” strategy that support the creation, use, sharing and preservation of information and knowledge in support of research, teaching and administration. (King’s College London, University of London 2005)
Auckland University of Technology	Knowledge Management framework for sharing and using knowledge acquired through the university’s operations to enhance learning, teaching, research and other activities.(Dewe and Wright 2007)

4.1.2 Knowledge Retention at other Institutions of Higher Education: Internationally and in Africa

The study also wished to know what exactly has been done regarding knowledge retention at higher learning institutions internationally and in Africa. As can be observed from Table 4.1 above, formal efforts to manage knowledge in universities exist. In addition to the above universities with formalised knowledge management policies and strategies, other institutions of higher learning are also making strides to retain their operational relevant knowledge. Table 4.2 below presents a summary of such institutions as has been deduced from Chapter Two.

Table 4.2: Higher Learning Institutions Addressing Knowledge Retention Challenges

Institution	Knowledge retention driver	Knowledge retention efforts being made
University of California	Attrition challenges	Key knowledge transfer issues reviewed and knowledge management strategies proposed (University of California 2006)
University of South Australia	Attrition challenges	Devised strategies for retaining vital knowledge by capturing and transferring functional and technical expertise (University of South Australia 2007)
Universities of Kwa-Zulu Natal, Pretoria, Cape Town, Witwatersrand, Western Cape	Attrition and capacity building challenges	Formal mentorship programmes (Cloete and Galant 2005)

4.2 FINDINGS FROM THE QUESTIONNAIRE

The section presents findings from the survey conducted among academic members of staff. The questionnaire addressed all the objectives of the study and had five sections namely, personal details, knowledge retention, knowledge assessment, knowledge acquisition and knowledge transfer.

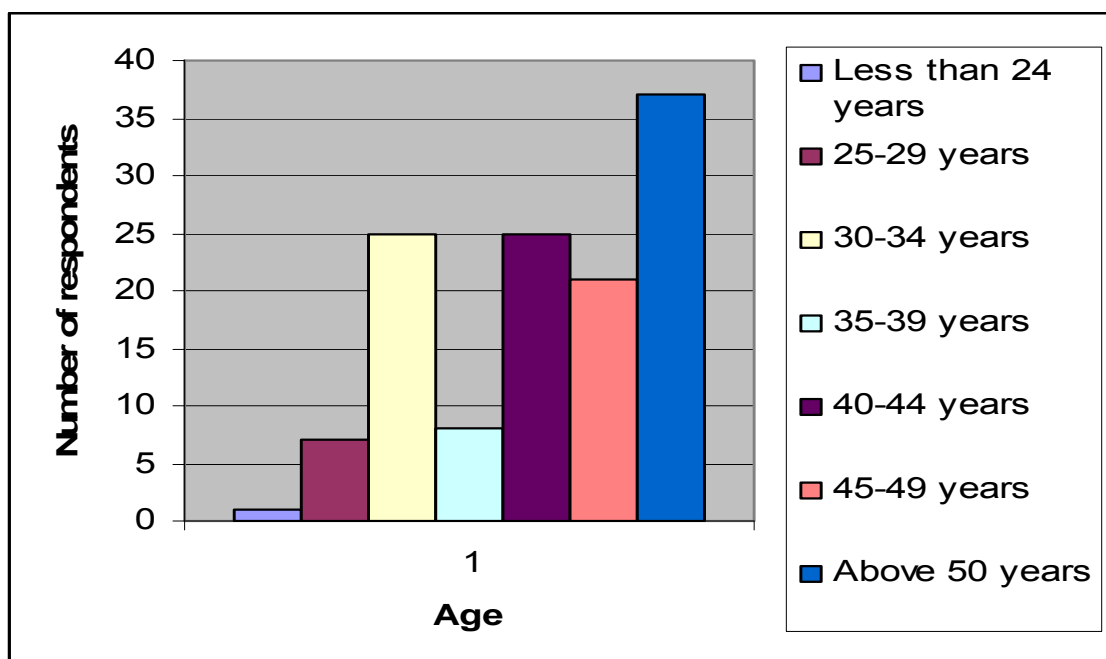
4.2.1 Characteristics of the Respondents

The researcher was interested to know the respondents' age group, gender and duration in academic ranks.

4.2.1.1 Age Groups for the Respondents

With regard to the age composition of the respondents, one (0.8%) was less than twenty-four years, seven (5.6%) were between 25-29 years, twenty-five (20.2%) were between 30-34 years, eight (6.5%) were between 35-39 years, twenty-five (20.2%) were between 40-44 years, twenty-one (16.9%) were between 45-49 years, while thirty-seven (29.8%) were above fifty years. Figure 4.1 below presents a summary of age groups of respondents.

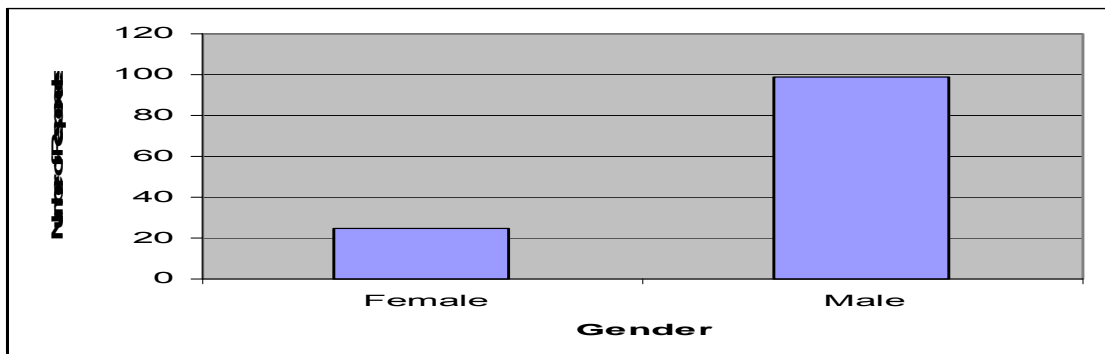
Figure 4.1: Age of Respondents



4.2.1.2 Gender of Respondents

In terms of gender, Figure 4.2 below indicates that twenty-five (20.2%) were female and ninety-nine (79.8%) were male.

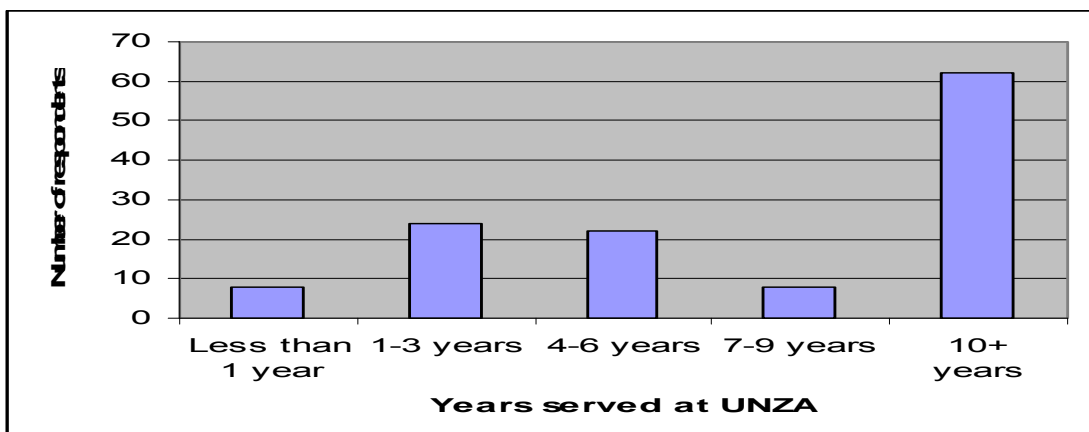
Figure 4.2: Gender



4.2.1.3 Number of Years in Academic Rank

With regard to the number of years served at UNZA, eight (6.5%) had served for less than one year, twenty-four (19.4%) had served between one to three years, twenty-two (17.7%) had served between four to six years, eight (6.5%) had served between seven and nine years while sixty-two (50.0%) had served for more than ten years. The summary number of years served at UNZA is presented in Figure 4.3 below:

Figure 4.3: Number of Years In Academic Rank



4.2.2 Knowledge Retention

This section aimed at establishing UNZA practices for knowledge retention. Questions on availability of knowledge retention policies, knowledge loss through attrition, faced attrition challenges, control measures for faced attrition challenges

as well as available systems/mechanisms/tools for sustaining operations were asked.

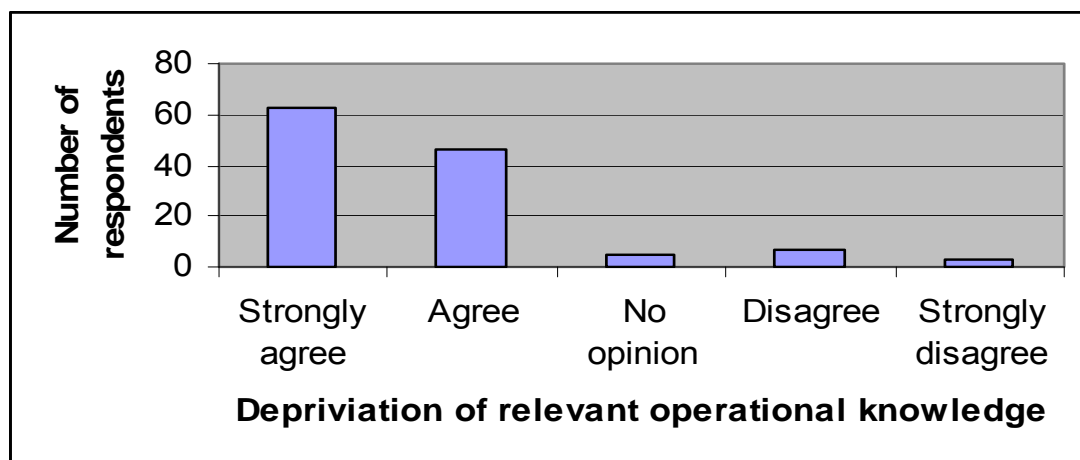
4.2.2.1 Availability of a Knowledge Retention Policy

On the availability of knowledge retention policies in schools/departments at UNZA, forty-two (33.9%) revealed that they had a knowledge retention policy in their schools/departments while seventy-two (58.1%) indicated that they did not have any knowledge retention policy in their schools/departments. Ten (8.1%) did not answer this question.

4.2.2.2 Deprivation of Relevant Operational Academic Knowledge Through Attrition

In order to ascertain the impact of knowledge loss through attrition challenges, respondents were asked to indicate whether academics that leave their school/department for other schools/departments within UNZA or indeed leaving UNZA for other institutions deprived UNZA of relevant operational knowledge. Sixty-three (50.8%) strongly agreed while forty-six (37.1%) agreed, five (4.0%) had no opinion on the matter, seven (5.6%) disagreed and three (2.4%) strongly disagreed. Figure 4.4 below is a summary of views expressed on deprivation of relevant operational knowledge.

Figure 4.4: Attrition and Deprivation of Relevant Operational Knowledge



4.2.2.3 Faced Attrition Challenges

Respondents were also asked to specify the various attrition challenges they had faced in their schools/departments. Retirements (58.9%), deaths (58.1%) and resignations (64.5%) were among those identified as pronounced attrition challenges faced by the schools/departments, as compared to transfers (18.5%) and secondments (26.6%). Table 4.3 summarises responses on the various attrition challenges faced in the schools/departments.

Table 4.3: Faced Attrition Challenges

Attrition challenge	Yes	No	Non-Response
Retirements	73 (58.9%)	30 (22.6%)	21 (16.9%)
Deaths	72 (58.1%)	28 (24.2%)	24 (19.4%)
Resignations	80 (64.5%)	21 (16.9%)	23 (18.5%)
Transfers	23 (18.5%)	52 (41.9%)	49 (39.5%)
Secondments	33 (26.6%)	48 (38.7%)	43 (34.7%)

4.2.2.4. Available Systems/Mechanisms/Tools for Sustenance of Operations

The researcher further inquired on the available systems/mechanisms/tools that the schools/departments were using to preserve relevant operational knowledge that ensure sustenance of operations. Although sixty-nine (55.6%) revealed that they were not aware of knowledge preservation methods, responses received from fifty-five (44.4%) respondents included the availability of the following systems/mechanisms/tools:

- Research publications, articles and books;
- Holding of seminars/workshops;

- Collaborative/team work in academic functions, understudying departing staff and mentorship of junior academics and Staff Development Fellows;
- Encouraging documentation, handover and retention of official records of activities (teaching materials, modules, manuals, reports, tests, course outlines, assignments, hand books and subject files);
- Recruitment of staff on contract, engagement of departed staff on part-time basis;
- Training of staff; and
- Exit interviews.

4.2.2.5. Critical Knowledge that should be acquired for new Entrants

For respondents who were not aware of any systems/mechanisms/tools that the schools/departments were using to preserve relevant operational knowledge that ensure sustenance of operations, a question was asked to state the critical knowledge that the schools/departments should at least acquire from the departing employee as well as knowledge that should be made available to a newly appointed academic. Of the fifty-five (44.4%) who were eligible to answer this question (those who were not aware of any systems/mechanisms/tools), twenty-six (21%) did not answer while twenty-nine (23.4%) mentioned the need to acquire the following critical knowledge from a departing academic member of staff:

- Research knowledge and publications;
- Briefing and handover of relevant operational material such as lecture and laboratory notes, books, handbooks and administrative records;
- Acquisition of documentation on relevant operations such as student management, course handling, university procedure, consultancy seeking, and curriculum development; and
- Soliciting reasons for departure, acquiring external contacts used for university operations and personal contacts.

4.2.2.6. Recommended Method for Retention of Knowledge

Respondents were also asked to recommend a method that should be used to retain knowledge that may be lost. Of the fifty-five (44.4%) who were eligible to answer this question, nineteen (15.3%) did not answer while thirty-six (29%) recommended the following methods for the retention of knowledge that may be lost:

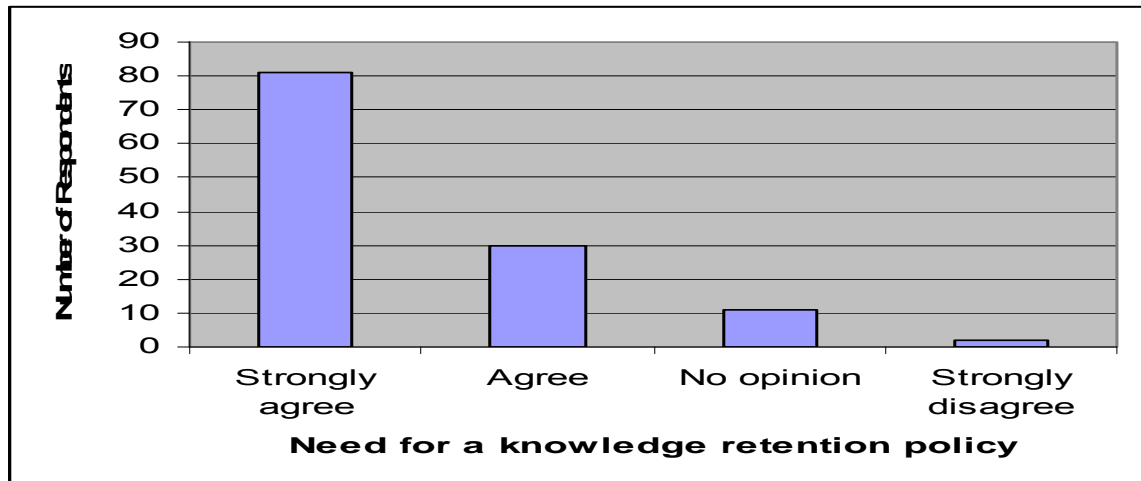
- Improve conditions of service and employ young or new Lecturers on permanent basis to enhance their sense of belonging;
- Facilitate adequate support and motivation through improved work environments, provision of materials for teaching, and procurement of scientific research equipments;
- Facilitate incentives for further studies;
- Creating databases where all notes and course materials could be kept in soft and also hard copies organised on the basis of areas of specialisation;
- Holding workshops and seminars;
- Request academics to compile booklets (teaching materials, manuals) for the courses they teach, submission of dossiers annually reflecting experience on teaching methods, narrative, case book and recommendation and establishing good record keeping methods;
- Engaging departed staff as consultants, part-time employees or guest Lecturers; and
- Encouraging team work, exchange programmes, understudy departing members of staff, recruitment of staff development fellows and encouraging experienced staff to transfer knowledge to the young academics.

4.2.2.7. UNZA Requires a Knowledge Retention Policy

Lastly and in order to ascertain the extent to which the University was addressing knowledge retention issues, the last question of the questionnaire determined the extent to which respondents agreed with the statement that UNZA required a knowledge management policy to enhance knowledge retention for operational benefit. Eighty-one (65.3%) strongly agreed with the statement while thirty (24.2%)

only agreed with the statement. Eleven (8.9%) expressed no opinion on the statement and two (1.6%) strongly disagreed with the statement. Figure 4.5 below presents the extent to which the University was addressing knowledge retention issues.

Figure 4.5: UNZA Needs a Knowledge Retention Policy



4.2.3 Knowledge Assessment

This section aimed at establishing UNZA practices for knowledge assessment. Questions were asked on the availability and importance of documented processes, policies, work manuals and procedures, statements on communication of knowledge assessment aspects and availability of knowledge auditing by way of possession of skills and competencies inventories.

4.2.3.1 Availability of Documented Processes

On the availability of documented processes in their schools/departments, seventeen (13.7%) indicated the availability of documented work activities on the teaching function such as course outlines, time tables (contact hours), preparation of lesson plans, preparation of assessment methods including assignments, tests and setting of examination questions, sixty-seven (54.0%) stated that they did not know any available documented work process and thirty-nine (31.5%) remained mute on the matter.

4.2.3.2 Availability of Documented Policies

On the availability of documented policies available in their schools/departments, two (1.6%) indicated the availability of the University Calendar as a document that contains the University Act and other policies, two (1.6%) mentioned the availability of a policy on conditions of service, nine (7.3%) indicated the availability of policies on teaching activities such as continuous assessment, tests, examinations and grading of student projects, one (0.8%) mentioned the university strategic plan, two (1.6%) stated the availability of policy governing training of staff, two (1.6%) mentioned the consultancy policy, one (0.8%) stated that UNZA had a policy on student field placements, fifty-eight (46.8%) stated that they were not aware of any documented policies and forty-six (37.1%) had no response on the matter.

4.2.3.3 Availability of Documented Work Manuals

On the availability of documented work manuals available in their schools/departments, eleven (8.9%) indicated the availability of laboratory manuals, seven (5.6%) stated that schools had handbooks, six (4.8%) mentioned availability of manuals containing lecture notes, five (4.0%) mentioned availability of manuals containing course programmes and syllabuses, fifty-six (45.2%) did not know any available manuals, forty-one (33.1%) did not respond to the question.

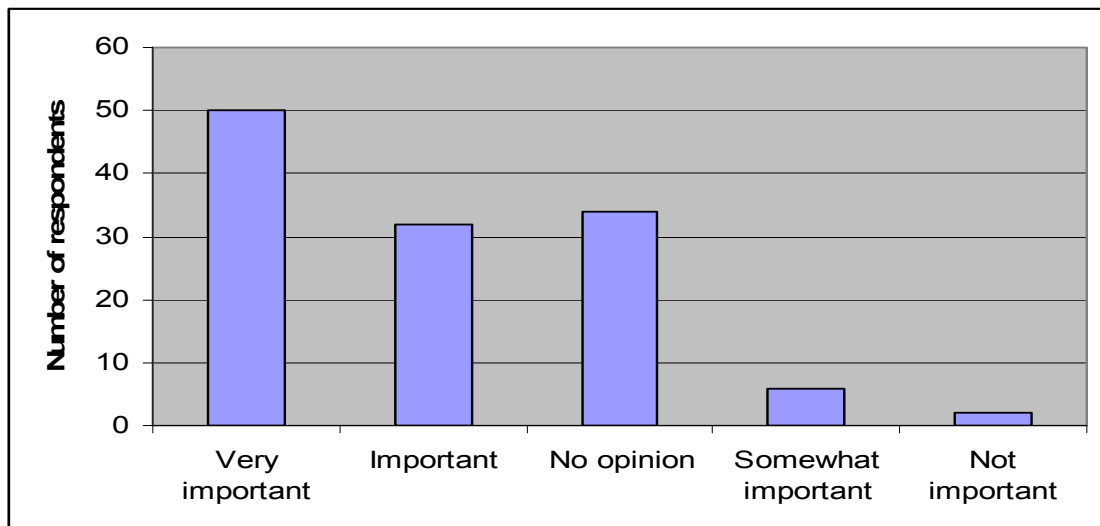
4.2.3.4 Availability of Documented Procedures

On the availability of documented procedures available in their schools/departments, one (0.8%) indicated that procedures were known by practice and not documented, four (3.2%) indicated that there were procedures on examinations, two (1.6%) stated that there were laboratory diagnostic procedures, one (0.8%) indicated the availability of procedures on academic recruitment, one (0.8%) indicated the availability of procedures on student enrolment, sixty-one (49.2%) stated that they did not know any procedures while fifty-four (43.5%) remained mute on the question.

4.2.3.5 Importance attached to the use of Documented Processes, Policies, Work Manuals and Procedures

On the importance attached to the use of documented processes, policies, work manuals and procedures in enhancing academic work in their schools/departments, Figure 4.6 below indicates that fifty (40.3%) stated that they were very important, thirty-two (25.8%) said they were important, thirty-four (27.4%) had no opinion, six (4.8%) said they were somewhat important and two (1.6%) stated that they were not important.

Figure 4.6: Importance of Documented Processes, Policies, Work Manuals and Procedures



4.2.3.6 Communication

In order to further verify respondents' views on knowledge assessment, statements on communication were asked. Out of the eight (8) statements provided, respondents only agreed with one (1) of them, acknowledging that the department/programme's objectives and strategies were clearly written and communicated with all academics, as 14.5% strongly agreed and 46.0% agreed with the statement, providing an overall positive response of 60.5%. Table 4.4 below summarises responses on the asked knowledge assessment statements on communication.

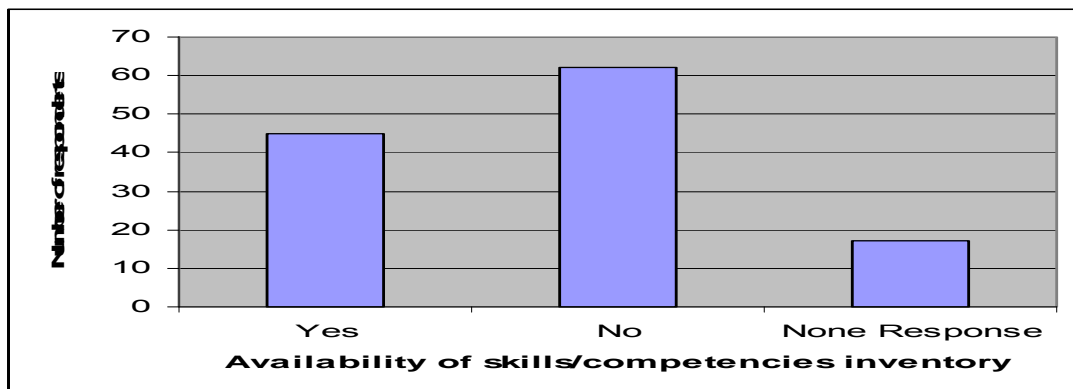
Table 4.4: Statements on Knowledge Assessment

Statement	Strongly agree	Agree	No opinion	Disagree	Strongly disagree
The department/programme's objectives and strategies are clearly written and communicated with all academics	18 (14.5%)	57 (46.0%)	16 (12.9%)	23 (18.5%)	10 (8.1%)
The department/programme's policies are clearly communicated with all employees	10 (8.1%)	41 (33.1%)	34 (27.4%)	28 (22.6%)	11 (8.9%)
Databases of good work practices, lessons learned or listing of experts are regularly updated in department/programme's	12 (9.7%)	30 (24.2%)	24 (19.4%)	38 (30.6%)	20 (16.1%)
Documents providing information regarding new knowledge created are periodically circulated in the school/department	11 (8.9%)	34 (27.4%)	32 (25.8%)	35 (28.2%)	12 (9.7%)
The data and information are disseminated on a regular basis through both electronic and traditional information channels	10 (8.1%)	25 (20.2%)	36 (29.0%)	38 (30.6%)	15 (12.1%)
Discussion forums are organized in the department/programme on time basis in order to encourage people' knowledge transfer.	12 (9.7%)	32 (25.8%)	29 (23.4%)	33 (26.6%)	18 (14.5%)
Academics transfer knowledge through regularly updating databases of good work practices, lessons learned or listings of experts	4 (3.2%)	27 (21.8%)	38 (30.6%)	38 (30.6%)	17 (13.7%)
Academics transfer knowledge through facilitating collaborative work by projects teams that are physically separated ("virtual teams")	6 (4.8%)	28 (22.6%)	42 (33.9%)	32 (25.8%)	16 (12.9%)

4.2.3.7 Availability of Skills and Competencies or Inventories

The researcher also sought to find out if the schools/departments had skills and competencies inventories. Figure 4.7 below indicate that forty-five (36.3%) said yes, sixty-two (50.0%) said no and seventeen (13.7%) remained mute on the matter.

Figure 4.7: Availability of Skills and Competencies Inventory



4.2.4 Knowledge Acquisition

This section aimed at establishing UNZA practices for knowledge acquisition. Organisational knowledge acquisition refers to the possession of relevant operational knowledge through various activities with a view to foster efficiency and effectiveness in the performance of organisational functions (Choo 2001; DeLong 2004; Liou 1990; Man 2006). Based on the various academic functions performed in most universities, respondents were asked to indicate the academic functions in which they had been involved in before joining UNZA, had training at the time they joined UNZA and expression of view on proposed professional training that should be made available to academic 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.

4.2.4.1 Experience in Teaching, Research, Curriculum Development, Academic Citizenship or Public Life, and Consultancy at the Time of Joining UNZA

On teaching, sixty-eight (54.8%) indicated that they had teaching experience before they joined UNZA, fifty-three (42.7%) said they did not have teaching experience before joining UNZA and three (2.4%) did not respond to the question.

On research, ninety-one (73.4%) indicated that they had research experience before they joined UNZA, thirty (24.2%) said they did not have research experience before joining UNZA and three (2.4%) did not respond to the question.

On curriculum development, thirty (24.2%) indicated that they had curriculum development experience before they joined UNZA, seventy (63.7%) said they did not have curriculum development experience before joining UNZA and fifteen (12.1%) did not respond to the question.

On academic citizenship or public life, fifty-one (41.1%) indicated that they had academic citizenship or public life experience before they joined UNZA, fifty-four (43.5%) said they did not have academic citizenship or public life experience before joining UNZA and nineteen (15.3%) did not respond to the question.

On consultancy, fifty-six (45.2%) indicated that they had consultancy experience before they joined UNZA, fifty-seven (46.0%) said they did not have consultancy experience before joining UNZA and eleven (8.9%) did not respond to the question.

4.2.4.2 Professional Training in Teaching, Research, Curriculum Development, Academic Citizenship or Public Life, and Consultancy

Having determined their participation in various academic functions before they had joined UNZA, respondents were asked to indicate the academic functions in

which they were professionally trained at the time they joined UNZA other than just having acquired the Bachelors, Masters and PhD qualifications.

On training in teaching, fifty (40.3%) indicated that they had specialised training in teaching at the time they joined UNZA, sixty-seven (54.0%) said they did not have any specialised training in teaching at the time they joined UNZA and seven (5.6%) remained mute on the subject.

On training in research, fifty-six (45.2%) indicated that they had specialised training in research at the time they joined UNZA, sixty-two (50.0%) said they did not have any specialised training in research at the time they joined UNZA and six (4.8%) remained mute on the subject.

On training in curriculum development, twenty-nine (23.4%) indicated that they had specialised training in curriculum development at the time they joined UNZA, eighty-one (65.3%) said they did not have any specialised training in curriculum development at the time they joined UNZA and fourteen (11.3%) remained mute on the subject.

On training in academic citizenship or public life, twenty-eight (18.5%) indicated that they had specialised training in academic citizenship or public life at the time they joined UNZA, seventy-six (61.3%) said they did not have any specialised training in academic citizenship or public life at the time they joined UNZA and twenty (16.1%) remained mute on the subject.

On training in consultancy, twenty-three (18.5%) indicated that they had specialised training in consultancy at the time they joined UNZA, eighty-four (67.7%) said they did not have any specialised training in consultancy at the time they joined UNZA and seventeen (13.7%) remained mute on the subject.

4.2.4.3 Necessity for Specialised Training in Specialised Courses

Having determined their participation in specialised professional training in the various academic functions, 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, one hundred and eleven (89.5%) indicated that it was necessary to undergo such training, six (4.8%) indicated that such training was unnecessary while seven (5.6%) had no opinion on the question.

On undergoing specialised training in teaching methodology, one hundred and fourteen (91.9%) indicated that it was necessary to undergo such training, seven (5.6%) indicated that such training was unnecessary while three (2.4%) had no opinion on the question.

On undergoing specialised training in research methodology, one hundred and ten (88.7%) indicated that it was necessary to undergo such training, seven (5.6%) indicated that such training was unnecessary while seven (5.6%) had no opinion on the question.

On undergoing specialised training in curriculum development, one hundred and seven (86.3%) indicated that it was necessary to undergo such training, seven (5.6%) revealed that such training was unnecessary while ten (8.1%) had no opinion on the question.

On undergoing specialised training in school/departmental administration and management, ninety-three (75.0%) indicated that it was necessary to undergo such training, sixteen (12.9%) indicated that such training was unnecessary while fifteen (12.1%) had no opinion on the question.

On undergoing specialised training in general and specialised computer programmes, one hundred and one (81.5%) indicated that it was necessary to undergo such training, twelve (9.7%) indicated that such training was unnecessary while eleven (8.9%) had no opinion on the question.

4.2.4.4 Necessity for Other Specialised Training

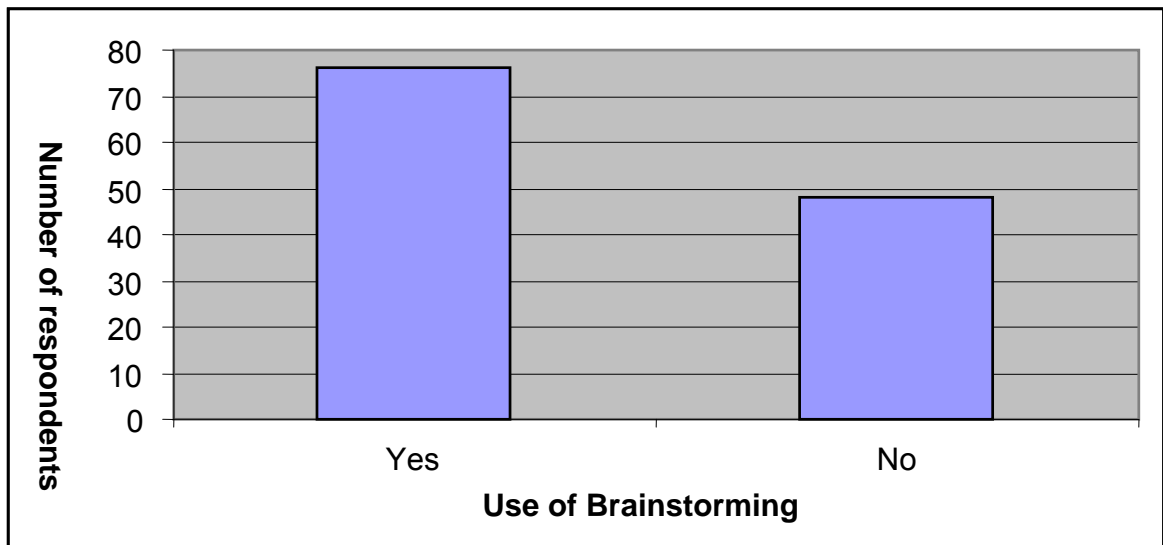
Besides the need to have specialised training in the above presented aspects, respondents indicated that short training courses should be introduced in the following areas:

- Academic/student counseling
- Management training in project management, time management, leadership skills, human resource management, communication skills, human relations, financial management, strategic planning, retirement planning, entrepreneur training and stress management
- Research skills, proposal writing, scientific paper writing, writing for publication, peer review of academic papers and statistical analysis
- Consultancy
- The use of Information Communication Technologies (ICTs) in teaching and research, information sharing and database management
- Ethics of academic life

4.2.4.5 Knowledge Acquisition Through Brainstorming

On handling challenges using brainstorming, Figure 4.8 below indicates that seventy-six (61.3%) agreed that brainstorming was in use in their schools/departments while forty-eight (38.7%) declined the use of brainstorming.

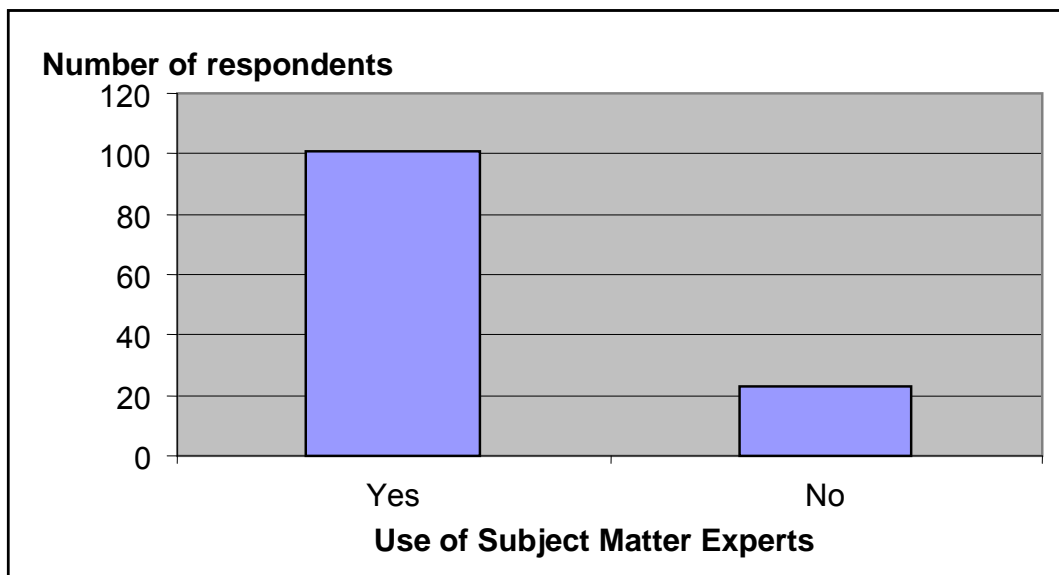
Figure 4.8: Use of Brainstorming



4.2.4.6 Consultations with Subject Matter Experts

On handling operational challenges by way of consultations with staff considered knowledgeable in the challenge being addressed, according to Figure 4.9 below, one hundred and one (81.5%) agreed while twenty-three (18.5%) declined the use of consultations in their schools/departments.

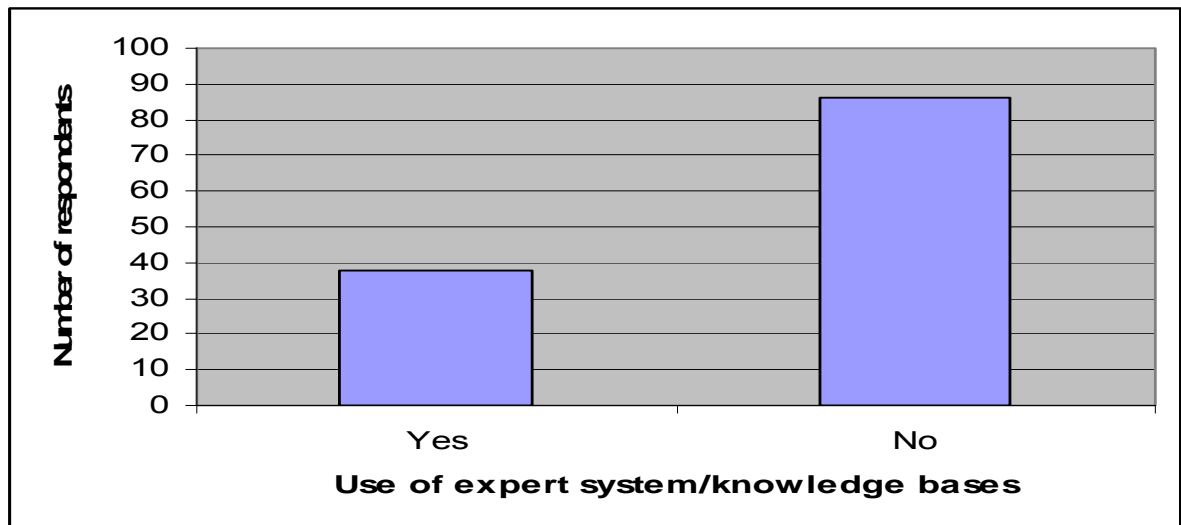
Figure 4.9: Consultations with Subject Matter Experts



4.2.4.7 The use of Expert Systems/Knowledge Bases

On handling operational challenges by referring to an expert system or knowledge base, Figure 4.10 below indicates that thirty-eight (30.6%) agreed that expert system or knowledge base were in use in their schools/departments while eighty-six (69.4%) declined the use of expert system or knowledge base.

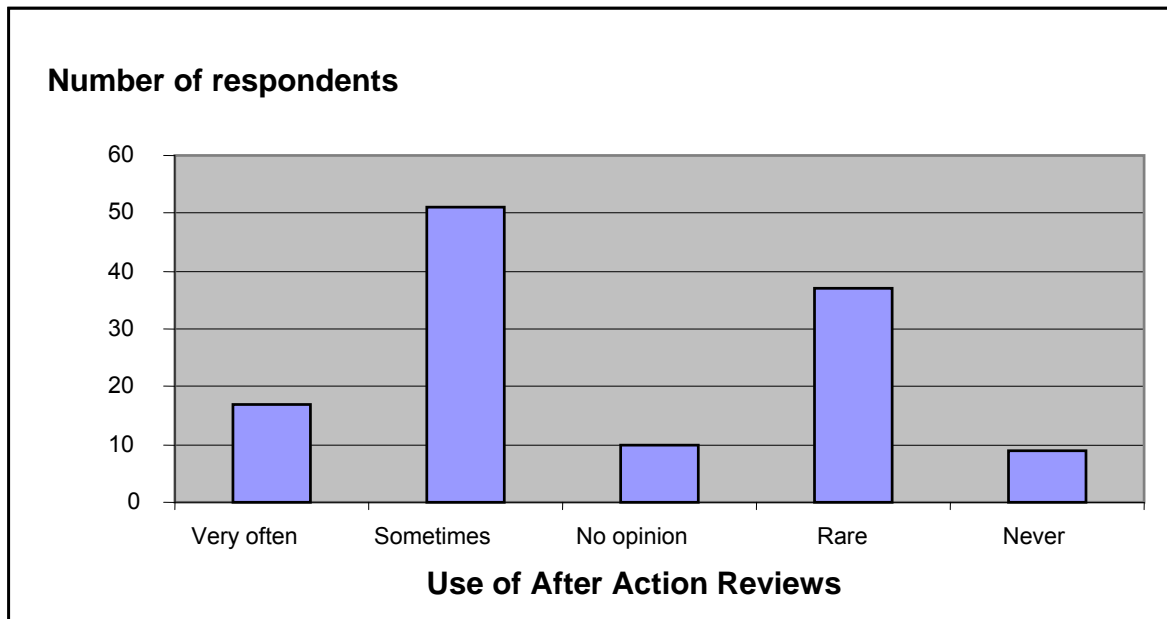
Figure 4.10: Use of Expert Systems/Knowledge Bases



4.2.4.8 The use of After Action Reviews

On holding of sessions to reflect on how effective efforts made to handle operational challenges have been, seventeen (13.7%) indicated that such sessions were held very often, fifty-one (41.1%) revealed that such sessions were held sometimes, ten (8.1%) had no opinion on the matter, thirty-seven (29.8%) indicated that such sessions, were rarely held and nine (7.3%) revealed that such sessions were never held at all. Figure 4.11 below summaries this information.

Figure 4.11: Use of After Action Reviews



4.2.5 Knowledge Transfer

This section aimed at establishing UNZA practices for knowledge transfer. Organisational knowledge transfer involves a number of practices whose aim is to enable an organisation sustain its operational relevant knowledge. With this understanding, respondents were asked to indicate available and formalised knowledge transfer practices.

4.2.5.1 Existing and Used Knowledge Transfer Practices

Having established whether knowledge transfer was being practiced in the schools/departments, the researcher sought to determine the various knowledge transfer activities practiced. Thus, the following section presents findings on the existence and usage of such knowledge transfer activities.

On the existence and usage of succession planning as a knowledge transfer tool, thirty-four (27.4%) acknowledged the existence of succession planning, fifty-two (41.9%) declined the existence of succession planning and thirty-eight (30.6%) did not respond to the existence of succession planning. On the other hand, twenty-three (18.5%) indicated that succession planning was practiced in their

schools/departments, eleven (8.9%) declined the use of succession planning in their school/department and ninety (72.6%) were not eligible to answer this question.

On the existence and usage of communities of practice as a knowledge transfer tool, twelve (9.7%) acknowledged the existence of communities of practice, fifty-six (45.2%) declined the existence of communities of practice and fifty-six (45.2%) did not respond to the existence of communities of practice. On the other hand, ten (8.1%) indicated that communities of practice was practiced in their schools/departments, two (1.6%) declined the use of communities of practice in their school/department and one hundred and two (67.7%) were not eligible to answer this question.

On the existence and usage of coaching as a knowledge transfer tool, twenty-six (21%) acknowledged the existence of coaching, fifty-two (41.9%) declined the existence of coaching and forty-six (37.1%) did not respond to the existence of coaching. On the other hand, fifteen (12.1%) indicated that coaching was practiced in their schools/departments, eleven (8.9%) declined the use of coaching in their school/department while ninety-eight (79.0%) were not eligible to respond to this question.

On the existence and usage of knowledge repositories as a knowledge transfer tool, thirty-nine (31.5%) acknowledged the existence of knowledge repositories, forty-one (33.1%) declined the existence of knowledge repositories and forty-four (35.5%) did not respond to the existence of knowledge repositories. On the other hand, thirty (24.2%) indicated that knowledge repositories were available in their schools/departments, nine (7.3%) declined the use of knowledge repositories in their school/department while eighty-five (68.5%) were not eligible to respond to whether knowledge repositories were being used in their schools/departments.

On the existence and usage of story telling as a knowledge transfer tool, seventeen (13.7%) acknowledged the existence of story telling, fifty-eight (46.8%) declined the existence of story telling and forty-nine (39.5%) did not respond to the existence of story telling. On the other hand, thirteen (10.5%) indicated that story telling was practiced in their schools/departments, four (3.2%) declined the use of story telling in their school/department while one hundred and seven (86.3%) were not eligible to respond to this question.

On the existence and usage of orientation, general and job specific as a knowledge transfer tool, forty-nine (39.5%) acknowledged the existence of orientation, general and job specific, forty-one (33.1%) declined the existence of orientation, general and job specific and thirty-four (27.4%) did not respond to the existence of orientation, general and job specific. On the other hand, thirty-three (26.6%) indicated that orientation, general and job specific was practiced in their schools/departments, sixteen (12.9%) declined the use of orientation, general and job specific in their school/department while seventy-five (60.5%) were not eligible to respond to this question.

On the existence and usage of mentorship, formal and informal as a knowledge transfer tool, sixty-seven (54%) acknowledged the existence of mentorship, formal and informal, thirty (24.2%) declined the existence of mentorship, formal and informal and twenty-seven (21.8%) did not respond to the existence of mentorship, formal and informal. On the other hand, forty-seven (37.9%) indicated that mentorship, formal and informal was practiced in their schools/departments, twenty (16.1%) declined the use of mentorship, formal and informal in their school/department while fifty-seven (46.0%) were not eligible to respond to this question.

On the existence and usage of job rotation as a knowledge transfer tool, seventy-five (60.5%) acknowledged the existence of job rotation, twenty-four (19.4%) declined the existence of job rotation and twenty-five (20.2%) did not respond to

the existence of job rotation. On the other hand, fifty (40.3%) indicated that job rotation was practiced in their schools/departments, twenty-five (20.2%) declined the use of job rotation in their school/department while forty-nine (39.5%) were not eligible to respond to this question.

On the existence and usage of phased retirement as a knowledge transfer tool, nineteen (15.3%) acknowledged the existence of phased retirement, fifty-six (45.2%) declined the existence of phased retirement and forty-nine (39.5%) did not respond to the existence of phased retirement. On the other hand, thirteen (10.5%) indicated that phased retirement was practiced in their schools/departments, six (4.8%) declined the use of phased retirement in their school/department while one hundred and five (84.7%) were not eligible to respond to this question.

A summary presentation of responses to the existence and usage of various knowledge transfer activities is presented in Table 4.5.

Table 4.5: Existence and Usage of Knowledge Transfer Activities

KNOWLEDGE TRANSFER ACTIVITY	EXIST			USED		
	Yes	No	Non- Response	Yes	No	Not Applicable
Succession planning	34 (27.4%)	52 (41.9%)	38 (30.6%)	23 (18.5%)	11 (8.9%)	90 (72.6%)
Communities of practice	12 (9.7%)	56 (45.2%)	56 (45.2%)	10 (8.1%)	2 (1.6%)	112 (90.3%)
Coaching	26 (21%)	52 (41.9%)	46 (37.1%)	15 (12.1%)	11 (8.9%)	98 (79.0%)
Knowledge repositories	39 (31.5%)	41 (33.1%)	44 (35.5%)	30 (24.2%)	9 (7.3%)	85 (68.5%)
Story telling	17 (13.7%)	58 (46.8%)	49 (39.5%)	13 (10.5%)	4 (3.2%)	107 (86.3%)
Orientation, general and job specific	49 (39.5%)	41 (33.1%)	34 (27.4%)	33 (26.6%)	16 (12.9%)	75 (60.5%)
Mentorship, formal and informal	67 (54%)	30 (24.2%)	27 (21.8%)	47 (37.9%)	20 (16.1%)	57 (46.0%)
Job rotation	75 (60.5%)	24 (19.4%)	25 (20.2%)	50 (40.3%)	25 (20.2%)	49 (39.5%)
Phased retirement	19 (15.3%)	56 (45.2%)	49 (39.5%)	13 (10.5%)	06 (4.8%)	105 (84.7%)

4.2.5.2 Paraphrased Statements on Knowledge Transfer Practices

In order to reaffirm the expressed views on available knowledge transfer practices above, the researcher asked respondents to indicate the extent to which they agreed with paraphrased statements representing the various knowledge transfer practices that they were asked earlier.

On the allocation of mentors/coaches to newly recruited staff, ten (8.1%) strongly agreed, eighteen (14.5%) agreed with the statement, sixteen (12.9%) had no opinion on the matter, forty-four (35.5%) disagreed with the statement and thirty-six (29.0%) strongly disagreed.

On the induction that involves orientation to general job tasks, fourteen (11.3%) strongly agreed, thirty (24.2%) agreed with the statement, twenty-one (16.9%) had no opinion on the matter, thirty-three (26.6%) disagreed with the statement, and twenty-six (21.0%) strongly disagreed.

On the induction that involves orientation to specific job tasks, thirteen (10.5%) strongly agreed, thirty-six (29%) agreed with the statement, twenty-two (17.7%) had no opinion on the matter, twenty-nine (23.4%) disagreed with the statement, and twenty-four (19.4%) strongly disagreed.

On the retention of capable retired employees on contract, forty-nine (39.5%) strongly agreed, fifty-nine (47.6%) agreed with the statement, eleven (8.9%) had no opinion on the matter, three (2.4%) disagreed with the statement, and two (1.6%) strongly disagreed.

On belonging to informal groups for purposes of sharing operational knowledge, thirteen (10.5%) strongly agreed, forty-nine (39.5%) agreed with the statement, thirty (24.2%) had no opinion on the matter, eighteen (14.5%) disagreed with the statement and fourteen (11.3%) strongly disagreed.

On belonging to formal groups for purposes of sharing operational knowledge, eleven (8.9%) strongly agreed, forty-nine (39.5%) agreed with the statement, twenty-five (20.2%) had no opinion on the matter, twenty-five (20.2%) disagreed with the statement and fourteen (11.3%) strongly disagreed.

On the rotation of academics in various functions, forty-four (35.5%) strongly agreed, fifty-two (41.9%) agreed with the statement, eleven (8.9%) had no opinion on the matter, ten (8.1%) disagreed with the statement and seven (5.6%) strongly disagreed.

On the location of all policies/procedures/manuals in a central place accessible to all members of staff, thirteen (10.5%) strongly agreed, twenty three (18.5%) agreed with the statement, twenty-five (20.2%) had no opinion on the matter, thirty-seven (29.8%) disagreed with the statement, twenty-six (21.0%) strongly disagreed.

On the sharing of narratives of work activities beneficial to members of staff, seventeen (13.7%) strongly agreed, forty-three (34.7%) agreed with the statement, twenty-eight (22.6%) had no opinion on the matter, eighteen (14.5%) disagreed with the statement and eighteen (14.5%) strongly disagreed.

Table 4.6 below summarises the above information on statements on knowledge transfer practices.

Table: 4.6 Statements on Knowledge Transfer Practices

Statement	Strongly agree	Agree	No opinion	Disagree	Strongly disagree
When new employees are recruited in your school/department, they are allocated a mentor	10 (8.1%)	18 (14.5%)	16 (12.9%)	44 (35.5%)	36 (29.0%)
Induction of new staff is conducted and involves orientation to general job tasks	14 (11.3%)	30 (24.2%)	21 (16.9%)	33 (26.6%)	26 (21.0%)
Induction of new staff is conducted and involves orientation to specific job tasks	13 (10.5%)	36 (29.0%)	22 (17.7%)	29 (23.4%)	24 (19.4%)
When members of staff reach the retirement age of 55 years and they are fit to continue with their work, they are often retained as contract workers	49 (39.5%)	59 (47.6%)	11 (8.9%)	3 (2.4%)	2 (1.6%)
You belong to an informal grouping of employees in your school/department in which you share operational relevant knowledge	13 (10.5%)	49 (39.5%)	30 (24.2%)	18 (14.5%)	14 (11.3%)
You belong to formal groupings of employees in your school/department in which you share operational relevant knowledge	11 (8.9%)	49 (39.5%)	25 (20.2%)	25 (20.2%)	14 (11.3%)
Members of staff in your school/department are usually rotated in various functions (e.g. course coordination, role of head of department)	44 (35.5%)	52 (41.9%)	11 (8.9%)	10 (8.1%)	7 (5.6%)
All your school/department operational policies/procedures/work manuals are located in a central place accessible to all members of staff	13 (10.5%)	23 (18.5%)	25 (20.2%)	37 (29.8%)	26 (21.0%)
You share narratives of work activities that are beneficial to members of staff in your school/department	17 (13.7%)	43 (34.7%)	28 (22.6%)	18 (14.5%)	18 (14.5%)

4.2.5.3 Formalised Knowledge Transfer Practices

The researcher also wished to determine knowledge transfer practices that were formally recognised by way of policy, procedures or regulations in place.

On succession planning, thirty-one (25%) revealed that their schools/departments had formal policies/procedures or regulations on succession planning, fifty (40.3%) declined the availability of formal recognition of succession planning by way of policies, procedures or regulations on succession planning, and forty-three (34.7%) did not express any view on the subject.

On communities of practice, ten (8.1%) revealed that their schools/departments had formal policies/procedures or regulations on communities of practice, fifty-six (45.2%) declined the availability of formal recognition of succession planning by way of policies, procedures or regulations on communities of practice, and fifty-eight (48.7%) did not express any view on the subject.

On coaching, twenty-two (17.7%) revealed that their schools/departments had formal policies/procedures or regulations on coaching, fifty-one (41.1%) declined the availability of formal recognition of coaching by way of policies, procedures or regulations on coaching, and fifty-one (41.1%) did not express any view on the subject.

On knowledge repositories, thirty-three (26.6%) indicated that their schools/departments had formal policies/procedures or regulations on knowledge repositories, forty-five (36.3%) declined the availability of formal recognition of knowledge repositories by way of policies, procedures or regulations on knowledge repositories, and forty-six (37.1%) did not express any view on the subject.

On story telling, six (4.8%) indicated that their schools/departments had formal policies/procedures or regulations on story telling, fifty-nine (47.6%) declined the availability of formal recognition of story telling by way of policies, procedures or regulations on story telling, and fifty-nine (47.6%) did not express any view on the subject.

On orientation, general and job specific, thirty-six (29%) indicated that their schools/departments had formal policies/procedures or regulations on orientation, general and job specific, forty-five (36.3%) declined the availability of formal recognition of orientation, general and job specific by way of policies, procedures or regulations on orientation, general and job specific, and forty-three (34.7%) did not express any view on the subject.

On mentorship, formal and informal, fifty-two (41.9%) revealed that their schools/departments had formal policies/procedures or regulations on mentorship, formal and informal, thirty-eight (30.6%) declined the availability of formal recognition of mentorship, formal and informal by way of policies, procedures or regulations on mentorship, formal and informal, and thirty-four (27.4%) did not express any view on the subject.

On job rotation, fifty-eight (46.8%) revealed that their schools/departments had formal policies/procedures or regulations on job rotation, thirty-two (25.8%) declined the availability of formal recognition of job rotation by way of policies, procedures or regulations on job rotation, and thirty-four (27.4%) did not express any view on the subject.

On phased retirement, twelve (9.7%) indicated that their schools/departments had formal policies/procedures or regulations on phased retirement, fifty-seven (46%) declined the availability of formal recognition of phased retirement by way of policies, procedures or regulations on phased retirement, and fifty-five (44.4%) did not express any view on the subject.

Table 4.7 summarises responses for formalised knowledge transfer activities by way of policies/procedures or regulations.

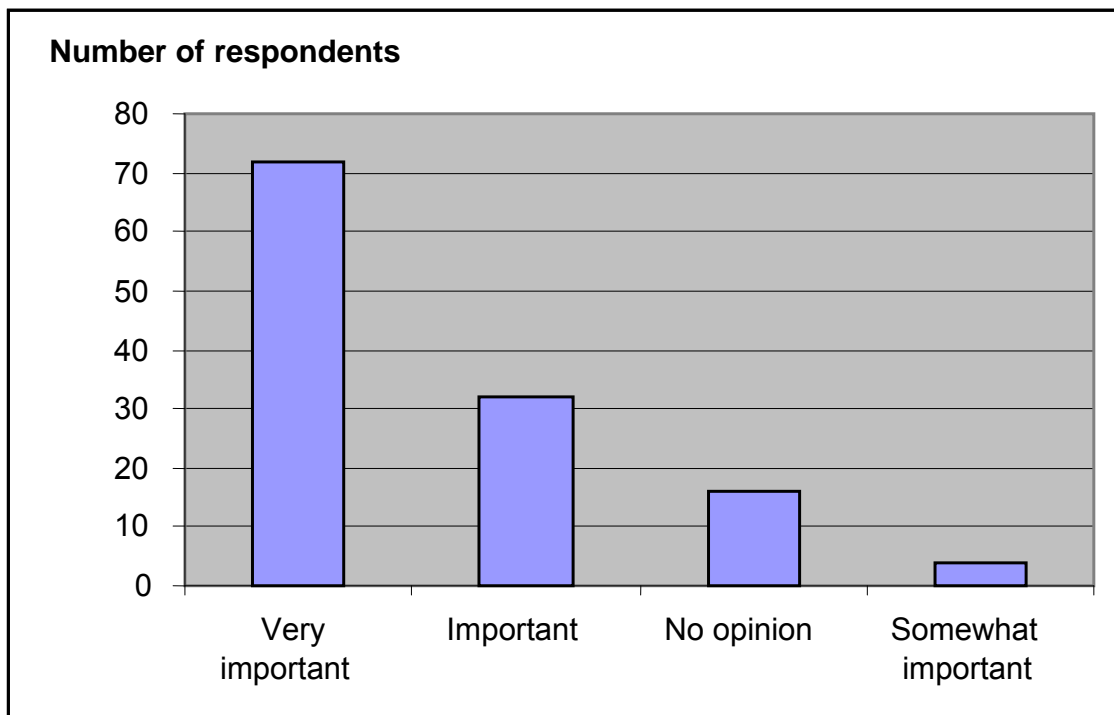
Table: 4.7 Formalised Knowledge Transfer Activities by way of Policies/Procedures/Regulations

KNOWLEDGE TRANSFER ACTIVITY	Yes	No	None Response
Succession planning	31 (25.0%)	50 (40.3%)	43 (34.7%)
Communities of practice	10 (8.1%)	56 (45.2%)	58 (46.8%)
Coaching	22 (17.7%)	51 (41.1%)	51 (41.1%)
Knowledge repositories	33 (26.6%)	45 (36.3%)	46 (37.1%)
Story telling	6 (4.8%)	59 (47.6%)	59 (47.6%)
Orientation, general and job specific	36 (29.0%)	45 (36.3%)	43 (34.7%)
Mentorship, formal and informal	52 (41.9%)	38 (30.6%)	34 (27.4%)
Job rotation	58 (46.8%)	32 (25.8%)	34 (27.4%)
Phased retirement	12 (9.7%)	57 (46.0%)	55 (44.4%)

4.2.5.4 Importance of Formalised Knowledge Transfer Practices

Besides the need to unearth the fact that knowledge transfer practices were formally recognised, the researcher wanted to know whether it was important to formalise knowledge transfer practices. Seventy-two (58.1) mentioned it was very important, thirty-two (25.8) stated that it was important, sixteen (12.9%) had no opinion on the matter while four (3.2%) said it was somewhat important to formalise knowledge transfer practices. Figure 4.12 below summarises the importance of formalised knowledge transfer activities.

Figure 4.12: Importance of Formalised Knowledge Transfer Activities



4.3 FINDINGS FROM THE INTERVIEWS

This section presents findings from the interviewed heads of units. The interview findings are presented mostly in narrative form although direct quotes are also provided.

4.3.1 Characteristics of the Respondents

Thirteen interviews were conducted. The following is the breakdown of the composition of the interviewed heads of various units:

- Five Deans of schools (Education, Law, Medicine, Natural Sciences, and Veterinary Medicine);
- Three Directors of Units (Computer Centre, Directorate of Distance Education, and Directorate of Research and Graduate Studies);
- The Librarian;
- The three Deputy Registrars responsible for academic matters, administration and council functions; and

- The Staff Development Officer

With regard to the gender of the thirteen interviewees, four were female and nine were male.

4.3.2 Knowledge Retention

The knowledge retention component of the interview aimed at establishing how well units knew and used their staff's demographic information for purposes of retaining operational knowledge. Particular attention was paid to the impact of their demographic composition on operations carried out. Further, the availability of mechanisms for the preservation of operational knowledge were sought.

4.3.2.1 Workforce Demographics and its Impact on Operations

Most of the interviewed heads of units stated that they hardly knew their workforce demographics except for two who expressed the use of employee demographic information for purposes of staff planning, as well as determining and according training opportunities to young staff. Others mentioned that they often referred to staff files and related documents when required to promote or recommend an employee for training. Others were of the view that the exact demographic composition information of their staff was kept at the centre. This reference to the centre was confirmed by the interviewee who was currently vested with the responsibility of managing and coordinating the human resource system. The views expressed on this question were as follows:

That depends on how long one has been in the unit... the first people you will know are the principal officers ...for others you come to know about them when they apply for promotion, you call for the file or when considering somebody for a course, you want to see the relevant person to go for a training ...

... The dean's office has got the records for all the members of staff ... but if you have to go into details you need to go through their records and usually the document that gives a lot of information usually will be the curriculum vitae ... informally that's how you get to know colleagues ...

... we have just been doing a census of our staffing to identify our gaps. We have a document that indicates the establishment and shows the filled up positions and positions that are vacant.

I have a pretty good idea of the age category of staff under this unit ... If I wanted to print it, yes it is documented in our staff database, it is just a matter ...

We know that. Actually we even have an excel sheet about that ... that's why already even in our trainings we have changed. We should have taken elderly people for training but I have said no, these people have retired and they are too old. So lets take these young ones because of that sheet that I have....

On the impact on operations of the current demographic composition of their staff, all interviewees were comfortable with the mix of their staff in terms of age. However, they all stated that it was important for them to have demographic composition of their staff readily available for purposes of making informed decisions on various staff welfare issues such as promotion, workforce planning and staff development.

I would think so I mean ... if you have got experienced ones the impact will be different, if you have young people they have new ideas, innovative ideas, and the school becomes active I think when you have new blood. They have bright new ideas. They want to see things work. So I mean age, the time you have been in here, does really affect the running of the school. If you have the senior people who are about to retire you have rich experience which they pass on to the new ones who are active...

... we have a relatively young, well, middle to young staffing because as you know we are guided by the university retirement arrangement so we fit into that and we also work by contract again according to University of Zambia policies and guidelines but age has not really been a factor in terms of ability to perform.

4.3.2.2 Faced Attrition Challenges

On attrition challenges, all the interviewees agreed that they had faced attrition challenges that included resignations, transfers, retirements and deaths. The impact of the faced attrition challenges were compounded by delayed

replacements for lost staff that led to failure to deliver services on time and disruption in continuity of operations. Sentiments expressed include the following:

Attrition yes, I think for many years we have a problem of recruiting staff. First of all, our conditions of service even now especially the clinical fields, the Ministry of Health offers slightly better conditions than the University. So most of our people from the masters programmes even though they are here nobody has joined the School of Medicine. I can give you figures that ... from hundred and fifty only three people have joined the School of Medicine for a period of twenty years....

Oh yes there has been a number of colleagues who have left through deaths, retirement, resignation, those that go for green pastures ... and of course what has been difficult is ... to replace them ... the University is not employing and the other thing is that it may not be too attractive to advertise...

Yes very much so. In fact almost all the positions have vacancies, people have left, out of a total establishment of something like one hundred and fifty, we have about seventy-six. So it has been quiet bad in terms of people leaving and passing-on...

... for us it is resignations, because our young staff members after acquiring some new skills leave because our pay here is a bit low. People prefer to go and find a job somewhere, where they will be paid a bit better. Because of that we have lost staff with a lot of skill. Even now, we are still in serious danger. Administration is aware. I am intercepting a number of applications to various organisations ...

4.3.2.3 Preservation of Operational Knowledge

On preservation of operational knowledge, interviewees mentioned availability of files where correspondence on various operational matters were filed, job descriptions as well as submission of handover notes. One respondent revealed that his unit was yet to introduce submission of operational reports quarterly as a way of mitigating the disruption of service delivery due to attrition.

... a lot of challenges are put on paper. We have made applications to donors and therefore, we had to write position papers ... we know what we need to do to develop the Medical School. We have put in proposals to donors for equipment, buildings, lecture rooms ...

... what we have been trying to do is the professors for example, the senior staff should at least have some people whom they can mentor ... in research, teaching...so that we work together so that if senior members leave at least these would have benefited. No it is not formalised but this is what we are trying to do...it is informally...

We have a deliberate policy of recording our activities, and in time of movement we ensure someone before they go they keep a good record of handover notes. I must hasten to say that we are not perfect in that area in the sense that we are trying to strengthen a culture of having quarterly reports of what activities ... other than our policy documents and guidelines we haven't really reached that level of strengthening this particular issue of recording our activities and our new discovery of better ways of doing things ... having them recorded. We have agreed that we need to do that but we have not reached that mark.

What would help... the job description file is there, then for all the activities that are involved in the documents are filled...

It is very, very important because if you have operational knowledge in the unit, whichever new person comes in will be able to acclimatise unlike currently we rely on people who have been in the unit longer ... might know how things are done but if there was something that could be picked and given to each new member who comes to the unit it will help.

It is a serious challenge. We should admit but at the moment we have a scheme where we are saying that if somebody is to undergo training they should fill a form of bonding ...bonding for two years....

In terms of the documenting of knowledge we don't do that ... suppose I leave today the knowledge that I have in configuring this and this is not there on the computer or paper... it is an excellent idea except that its a huge amount of work to do ... but it will help a great deal ...

4.3.3 Knowledge Assessment

The interview data collected on knowledge assessment aimed at uncovering the various university operations and their required knowledge and skills for performing

UNZA operations. Prime to the researcher was also the need to determine how well functions were supported by the availability of policies, procedures, work manuals as well as documented processes/tasks. The researcher also wished to determine the availability of workforce planning and knowledge auditing activities in the various university units.

4.3.3.1 Scope of UNZA Operations

UNZA is a big institution in which various operations are carried out. Various units at UNZA carry out different unique operations, some of which cut across university operations while others are specific to certain units. As such, the researcher while trying to understand the scope of operations available at UNZA asked interviewees the purpose and main functions of their units. Based on their responses Table 4.8 below indicates the units from which interviewees were drawn and their purposes.

Table 4.8: Units and Their Purposes From Where Interviewees Were Drawn

Unit	Purpose
School of Education, Law, Medicine, Natural Sciences and Veterinary Medicine	Academic Units whose purpose is to train human resources and creation of knowledge through research in their respective various fields
Directorate of Research and Graduate Studies	In charge of postgraduate studies and coordination of research and consultancy activities
Directorate of Distance Education	In charge of coordination and management of distance education services
Staff Development Office	Coordination and enforcement of training and development activities of all staff in the university
Computer Centre	Coordination and facilitation of all information communication technology services at UNZA
Deputy Registrar (Administration)	Responsible for staff welfare and other human resources functions
Deputy Registrar (Council)	Secretariat for UNZA Council and responsible for other human resources
Deputy Registrar (Academic)	Responsible for student admissions and other Senate activities
UNZA Library	Collection, dissemination and facilitation of access to information and knowledge resources

4.3.3.2 Organisational Capability Assessment

Based on the understanding that the documentation of organisational operational processes constitutes repositories of explicit knowledge, respondents were asked to indicate the available policies, procedures, work manual and documented work processes in their units. Some of the interviewees mentioned the availability of general policies and regulations that provide a general framework within which functions must be carried out. Among those policies and regulations mentioned include the following:

- Senate guidelines on examinations, student counselling, quotas, admissions, research and publications;

- Staff development policy;
- Library policy that was under revision;
- Draft research policy; and
- Consultancy regulations that were still under preparation.

However, with regard to the availability of documented tasks or availability of work manuals on operations performed, most of the interviewees were of the view that procedures on tasks carried out were just implied and not written except in a few tasks. The following were some of the narrations expressed by the interviewees:

We are guided by the principles of open and distance learning because you cannot run distance education without learner support systems and within the learner support systems we use our provincial centres...Some of those are implied in the job descriptions ... (work manual) that will be better especially that not all the people who come here have read the document on open and distance learning ... for the benefit of those who may be transferred to this unit without having read any document on open and distance leaning ... what happens is that when we receive a member of staff here there is what we may refer to as some induction period where this person works with the people who have been here, explain to him all the activities that go on here but as we are saying from experience its not written that these are the procedures but after working here people come to understand the operations of this unit ...

I think I will not be pretty sure of course we may have job descriptions It becomes difficult with the academic members ... we take it for granted these colleagues know exactly what they are doing. Its much easier than it is with non-academic staff.... will give some guidelines on how the course for example should be designed ...all these stages to go through ... I think these are some of the things that probably you have always been doing, this kind of thing ... I would think there should be somewhere but of course there is this familiarity that this is what we always do and we always share ... it is like everything that you always do... its assuming that guidelines are there even if you haven't seen the book ... the regulation ... so such things do happen ... and its like you have the memory, institutional memory, tradition handed over kind of thing it may not be written rule but the rules you have been following...

We do have a library policy although of course I must mention that it needs to be updated and have it in line but otherwise what we have are specific descriptions of unit activities which guide on ...

Not to my knowledge it's just the knowledge one has got from past practice unless there is something which I haven't seen except probably for the academic members of staff where something was done because interviewing academic staff was introduced recently so for that one there is a process recorded somewhere.

We have the University Act for the functions of the committees, conditions of service for members of staff and the code of conduct.

No that is something that is in process. What we have are the codes but not the process, the codes which spell out the charge and the penalties...

On the hardware, we have a procedure to follow how to repair a computer ... even you as a new employee you ... will be able to repair a computer because it guides you step by step.

4.3.3.3 Workforce Planning

On workforce planning as an aspect of knowledge assessment, most interviewees indicated that workforce planning was not practiced in their units, apart from a few who mentioned that they had utilised workforce planning in determining their establishments, consideration of staffing levels, and placement of staff on training programmes. In fact, the interviewee who was currently vested with this responsibility mentioned that it was not possible to have a comprehensive workforce planning programme for the entire university as they were still working on a comprehensive staff establishment. As such, units in the university took various initiatives in addressing their staffing needs. The following were some of the views expressed on workforce planning:

We try to look...we have committees that discuss these things but we also work in line with university regulations on qualifications and experience ... but at the same time we also look at the national demands and the health ministry has to guide us on the disease burden in the country and what the requirement of our professionals are.

So we aim our curricular, our recruitment of staff and development of programmes depending on national demand...

... as a unit we develop a staffing plan including staff development, what skills we will require in each unit so far is a task that has been given to each unit, to establish their specific objectives, activities, staffing requirements then indicate the gaps in terms of skill and numbers of people and what need so that we have a whole staff development plan...

We are in the process of coming up with an actual establishment and then I think it will be from then on that we will be able to tell which manpower we will need at a particular time ... as of now there is nothing, so the planning is haphazardly done.

We do that and even now we have a new structure that we have proposed which is in the Council Office waiting for final approval by the committee for human resources ... because of the same plan we need this number of staff with these particular skills...

4.3.3.4 Knowledge Auditing

With respect to the practice of knowledge auditing, the researcher inquired as to whether units in the university had knowledge bases, repositories or inventories. Another aspect that was asked through which knowledge auditing could be viewed was the availability of skills and competency profiles. The findings indicate that only one unit indicated the availability of a knowledge inventory. However, what was clear was that almost all the units recognised the value of having a knowledge base or an inventory of skills and competencies. The following were some of the views expressed by interviewees on the availability of knowledge audit practices.

What we have is that each department has a record of what sort of specialists they have. So we don't actually have an office where you can see what sort of knowledge is available...

What does help us is the school handbooks, departmental handbooks which we haven't produced for some time now, the CVs usually are found in the Dean's Office and I think just by the department ... there are many departments with so many specialisations but I think the Dean tries ... and of course by informal contacts he knows who can do this work and if he doesn't know, he usually goes to the heads ...

and he has the administrative committee ... but the departments usually give a good idea of who should be in this area...

We are trying to collect that right now. We are trying to come up with some document.

We have it actually indeed we have an inventory of skills ... and its because of the inventory that's how we have seen where gaps are... and out of the gaps we have made a new structure being awaited to be approved.

4.3.4 Knowledge Acquisition

The section on knowledge acquisition was aimed at finding out how the university ensured knowledge acquisition for its various operations. Particular attention was paid to knowledge acquisition practices such as recruitment, training and development, reference to expert systems, subject matter experts and use of after action reviews.

4.3.4.1 Recruitment

On recruitment, most interviewees mentioned that recruitment as a knowledge acquisition practice was a centralised activity under the registrar's department. The interviewee in charge of the function agreed that recruitment of staff was through her unit.

Of all the interviewees, only two mentioned that although recruitment was centrally coordinated, they carried out their needs assessment for determination of gaps in knowledge and skills of their current staff and, therefore, ensured that recruitment of new staff for filling vacancies also took care of the identified knowledge gaps and skills for the unit. Further, almost all interviewees expressed concern over unfilled establishments that have been further hampered by a freeze on recruitment of staff except in replacement cases.

4.3.4.2 Training and Development

Training and development is a critical function that facilitates knowledge acquisition necessary for operations. The researcher wished to know how the various units ensured that their staff acquired relevant operational knowledge. All the interviewees indicated that their staff undergo various training for purposes of ensuring that operational knowledge relevant to the respective units was acquired through workshops, seminars, short courses as well as long academic courses. However, with respect to academic tasks, only one interviewee mentioned to have facilitated once, a teaching methodology course for her academic members of staff. While acknowledging that some knowledge acquisition took place to improve operations, interviewees, however, were mindful that core academic tasks such as teaching, consultancy, public life as well as research were rarely taught to members of staff. What became apparent was that units assumed that academics were ready and knowledgeable enough to perform their duties well even though there was no professional formal training for their tasks.

Some of the short courses offered to members of staff were conducted by the respective units or indeed using another unit within the University or outside the University. However, there was disparity with regard to the frequency of attending training sessions that facilitated knowledge acquisition.

The researcher also determined that besides most units in the University offering short term training in various fields relevant to specific operations and functions at UNZA, none of such training were facilitated and coordinated by the unit currently mandated to coordinate training and development of staff in the university. The unit only coordinated long-term training programmes. This was also confirmed by the interviewee in charge of staff development in the University. The interviewee explained that they were yet to conduct a skills assessment survey to determine the training requirements of staff at UNZA. The following were some of the views expressed on knowledge acquisition through training and development.

...even though we have a staff development programme, it is impossible to get a Doctor for example into a staff development programme. He will never join, leave a salary which is even better than UNZA to come on the SDF and start earning an SDF salary ... there is no way ... so it usually doesn't work with us that well, may be in a few other courses like physiotherapy ...

.. there comes a time also when we give short courses or kind of training to support staff. For example, we are thinking of going out may be in August specifically with support staff and give lectures or have discussions on each one's role in the school, how should we perform these roles. This we are trying to do and of course permission for members of staff to go for training in the university or elsewhere.... there has been close cooperation between the school and the staff development office ... especially training academics, I think it is an established kind of system ...

... for the short courses I think individuals do attend them for example in extension studies we have a number of colleagues, support staff who attend these programmes ... but I think on their own and they are paying for them but credit courses programmes it is usually through staff development programme.

... there has been some training in certain areas like web designing and the use of the new system but in these other areas we want to plan them after...

4.3.4.3 Expert Systems, Subject Matter Experts and the use of After Action Reviews

In terms of using expert systems, subject matter experts and after action reviews as practices that facilitate knowledge acquisition, it was clear that expert systems were not available for knowledge acquisition. However, all interviewees mentioned the use of committees as a management tool in their operations. As such interviewees revealed that when making decisions, consultations were made in committees where experts were found. Other committees such as the Board of Studies were among those where operational activities were reviewed. To this end, therefore, knowledge acquisition practices such as subject matter experts and after action reviews are highly used at UNZA. The following were some of the sentiments made on subject matter experts and after action reviews.

... yes we do meet in management committee meetings. We discuss our problems...

Usually we have the administrative meetings which will have the heads of department, assistant deans and you may extend it to senior members of staff... we have schedules of meetings for example, major things like registration... we have a number of committees here in the school specifically for various activities, for example registration, rehabilitation, seminars, events like open days, the journal ... when something is done the committee sits and have a report made to the Board of Studies where we report...

We have one weekly management meeting now, that has been necessitated by two things, the first one is that the University of Zambia has a weekly management meeting every Monday and at that management meeting we are supposed to report on the activities of the week, what we have achieved and what we hope to do the following week.

4.3.5 Knowledge Transfer

On knowledge transfer, the researcher asked interviewees on how their unit ensured knowledge flow among their staff. This was complemented by another question on how the heads of the units ensured that operational knowledge was retained for purposes of operational continuity amidst employee mobility and staff related attrition challenges. Particular attention was paid to various knowledge transfer practices such as succession planning, communities of practice, coaching and mentoring, orientation (general and specific), job rotation, phased retirement and story telling.

4.3.5.1 Succession Planning

On succession planning, most interviewees were of the view that there was no deliberate formal system for replacing vacant positions through succession planning. However, one interviewee mentioned that there were criteria for promoting staff within the university although the practice was not being viewed as succession planning per se. However, the promotion of staff was not proactively determined through a University system but was based on an individual need to vie for a higher vacant position. Another interviewee stated that under normal situations and staffing levels permitting, positions that fall vacant were filled by staff

in an acting capacity after which if such a member of staff possessed minimum qualifications and exhibited enough experience to perform in that position, then he/she was appointed to be substantive in such a position.

As to whether the promotion of academic staff was as a result of need to replace a vacancy, one interviewee stated that two major determinants of promotion were basically the availability of a vacancy as well as meeting stated promotion criterion for the desired position. However, this interviewee stressed that most units in his department were critically under staffed and thus the need to promote a member of staff rarely considered the availability of a vacancy.

Another interviewee who also expressed ignorance over formal succession planning practice stated that their unit ensured that senior academic members of staff closely worked with junior academic members of staff. They involve them in responsibilities such as acting as heads of departments and participating in various committees as a way of preparing them to take over responsibilities of higher positions.

In a nutshell, the unit that is supposed to coordinate succession planning revealed that there was no succession planning in place. It was hoped that the finalisation of the staff establishment information on current position holders will be used to enable earmarking of staff for certain roles. Expressions on succession planning were made as follows:

.... the problem will come in for highly specialised staff ... if it is a department which only has one or two staff and you lose that staff it is very difficult. So what we are currently trying to do is that we have identified those areas and we have sent people out to train in those fields while knowing that they may go for greener pastures and we may lose them ...

...I don't think we have something of that kind but I think what we have as I said earlier is that all senior members should be close to the junior members and the other thing they do is if you are in an office if you are out who are you leaving there ... so

every body has got something to do here ... we are thinking of the young people to sit in and see what it means to be there...

We try to ensure that no unit is run by one person ... we have also embarked on a programme to ensure that people are enrolled on the master's programme and there is almost an understudy of every position...

Not as yet but I think we will be moving to that once we have our establishment done and we get qualifications of people who are occupying various positions ... especially with the assistance of the human resource information system that will be procured I think it will be easier to have such a plan.

4.3.5.2 Communities of Practice

A range of responses were made on the use of communities of practices in the units. For instance, some respondents mentioned the holding of meetings as a platform for encouraging the transfer of knowledge while others mentioned seminars, retreats and workshops as a way they ensured the transfer of knowledge was achieved. There were some who were of the view that not much was being done deliberately to bring staff together for purposes of knowledge transfer. The following were some of the expressions made by the interviewees.

We have regular meetings ... departmental and inter-departmental meetings here so there is exchange of knowledge.

Mainly we are reviewing the curriculum ... to also renew our relationships within the departments and in the school we review the courses but we emphasise on our relationships...

We normally have a meeting though it has not been very frequent ... and one on one as well...

4.3.5.3 Coaching and Mentoring

On coaching and mentoring of staff, some of the interviewees mentioned that they ensured that their staff were coached and mentored by way of encouraging them to consult among colleagues and showing them specific tasks that they were

required to perform. However, the majority of the interviewees were of the view that once staffs were employed, it was assumed that they knew what was expected of them. Departments only ensured that they settled down by providing office space and a few other equipments that might be required.

We actually have, to improve the teaching skills we have a postgraduate diploma in health education which we encourage our staff ...its up to individual staff to improve their teaching skills...

4.3.5.4 Phased Retirement

All the interviewees mentioned to have faced staff attrition challenges and among such challenges being retirements. For the interviewees who faced retirements of academic members of staff, they all mentioned that retired staff were usually employed on contract if they so wished.

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

We have a number of them on contract unless they just don't want to come...

4.3.5.5 Job Rotation

Job rotation was another aspect where interviewees held varying responses on. For instance, interviewees who headed academic units mentioned that it was not possible to rotate academic staff due to specialisations in different academic fields. They acknowledged the fact that support staffs were usually rotated even when they were not consulted.

The interviewee who was in charge of rotating staff also agreed that only staff in positions that cut across various units were rotated. However, the rotation was usually to replace or fill a vacancy created as a result of an attrition challenge and not necessarily to ensure knowledge transfer. The unit that had frequent rotation of staff caused by attrition challenges felt that the rotation was just too much, though

they have just realised that in the long-term, it has helped their staff acquire knowledge of various operations in the unit. Some of the comments were as follows:

No! even for them there is a shortage ...there is no rotation in our fields because if you are a surgeon in a particular field ... there is no way some physician can do it but secretarial staff we do because they do similar works...

..quite often actually sometimes I believe it's a bit too much because of these movements we are forced to move people around ... it is not necessarily as a matter of policy but forced by circumstances although in the final analysis we realise that it is quite advantageous in the sense that people are exposed to different activities...

4.3.5.6 Orientation (General and Specific)

Orientation was one of the knowledge transfer practices the researcher was interested in. One of the interviewees mentioned that it was a requirement in her unit that new employees in the University were oriented.

However, most of the interviewees especially those heading academic units were of the view that the orientation provided to their employees mainly depended on what each individual employee would require to know. In short, there were no formal orientation programmes especially those specific to the activities the employee would be performing. However, familiarity to the department was made possible through interaction with fellow staff. Sentiments were expressed as follows:

... for lecturers the orientation is actually departmental ... its up to the department to make the person feel welcome, explain to him, provide office space for him, familiarise him with the surroundings ...

We don't have a formal way of orienting them but usually it is through contacts with the colleagues especially in the area where that person is ... they are just learning on their own which may be difficult...

... each new member of staff goes through a one month of orientation and they are exposed to each of our ... departments before they are settled in one area...

4.3.5.7 Knowledge Repository

Although the researcher wished to know if units had knowledge repositories, none of the interviewees mentioned availability of any knowledge repository. However, related questions on knowledge audit addressed this issue as well.

4.3.5.8 Story Telling

None of the interviewees ever mentioned the availability of story telling as a knowledge transfer technique.

4.4 SUMMARY OF CHAPTER FOUR

This chapter has presented results of the collected data obtained from document review, survey and interviews. The next chapter, Chapter Five 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

5.0 INTRODUCTION

This chapter interprets and discusses the findings presented in Chapter Four . The interpretation and discussions provide the meaning of the findings with reference to the study objectives. The chapter also includes a synopsis for the interpretation and a summary for the chapter.

5.1 KNOWLEDGE MANAGEMENT AND KNOWLEDGE RETENTION POLICIES BY HIGHER LEARNING INSTITUTIONS

The first objective of the study was to determine and assess knowledge management and knowledge retention policies by higher learning institutions. The reviewed literature in Chapter Two indicated that learning institutions have developed knowledge management and retention policies (Dewe 2005; Kings College London 2005; University of Edinburgh 2007). Examples of such institutions include among others the following:

- University of Edinburgh;
- Kings College, University of London; and
- Auckland University of Technology.

All the above knowledge retention policies and strategies (University of Edinburgh, Kings College, University of London and the Auckland University of Technology) address the retention of institutional operational knowledge as well as the management of university generated research knowledge beneficial to society. Although it is clear that higher learning institutions have policies and strategies for knowledge retention, the findings established that UNZA does not have a policy for

knowledge retention. The survey results show that 89.5% of respondents recommended the need for UNZA to have a knowledge retention policy.

Based on the above presentation, this study has shown that higher learning institutions are practicing knowledge retention. This is so true considering the established comprehensive policies, strategies and practices for knowledge management and retention in universities. However, UNZA was yet to develop a knowledge retention policy.

5.2 KNOWLEDGE RETENTION AT OTHER INSTITUTIONS OF HIGHER LEARNING IN THE WORLD

The second objective of the study was to determine what is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa. The three sections below address knowledge retention internationally, in Africa and at UNZA.

5.2.1 Knowledge Retention at Institutions of Higher Learning: International Overview

The research through document review in Chapter Two identified that knowledge loss caused by drivers for knowledge retention has necessitated the introduction of knowledge retention interventions in some universities (University of California 2006; UniSA 2007). Not only has this study exposed the availability of complete knowledge retention policies and strategies (Dewe 2005; Kings College London 2005; University of Edinburgh 2007) but it has also exposed other learning institutions that are still developing policies and strategies for knowledge retention as well as those that have partial practices on knowledge retention. Among those exposed by the reviewed literature, include the following as shown in Table 5.1 below:

Table 5. 1: Learning Institutions Developing Policies/Practices with some Knowledge Retention Activities

Institution	Knowledge retention area addressed
University of Salford	Mentorship (University of Salford 2004)
University of Aberdeen	Mentorship (University of Aberdeen. 2006)
University of Reading	Mentorship (University of Reading 2007)
University of New England	Workforce planning (University of New England. 2002)
University of California	Workforce planning (University of California 2000)
Charles Darwin University	Workforce planning (Charles Darwin University 2006)
University of South Australia	Workforce planning (University of South Australia 2007)
University of Tasmania	Workforce planning (University of Tasmania 2006)
University of Alberta	Workforce planning (University of Alberta 2007)

As seen in the above table, the international community is addressing knowledge retention. Comprehensive policies and strategies have been and are still being developed. Those that have no such policies have some practices aimed at addressing knowledge retention challenges.

5.2.2 Knowledge Retention at Institutions of Higher Learning in Africa

Just as is the case with other universities outside Africa, the need to retain operational knowledge in African universities has been recognised (Sawyer 2004). Scholars have bemoaned the threats of brain drain (Mushonga 2005; Oni 2000; Tettey 2006) and efforts to tackle knowledge loss challenges have been made (Cloete and Galant 2005). Table 5.2 below shows institutions and organisations that have embarked on this important issue.

Table 5 2: African Higher Learning Institutions Practicing some Knowledge Retention Activities

Institution/Organisation	Knowledge retention area addressed
South African Universities Vice-Chancellors Association	Enhancing management capacity (Seale 2005)
University of KwaZulu-Natal	Training and Mentorship (Cloete and Galant 2005)
University of Pretoria	Training and Mentorship, IT application in distance education (Cloete and Galant 2005; Cross and Adam 2007)
University of Cape Town	Training and Mentorship (Cloete and Galant 2005)
University of Witwatersrand	Training and Mentorship (Cloete and Galant 2005)
University of Western Cape	Training and Mentorship (Cloete and Galant 2005)

5.2.3 Knowledge Retention at UNZA

In Chapter Two, it was established that drivers for knowledge loss in organisations include changing 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, this research sought to find out if UNZA faced knowledge retention challenges. Both the survey and interview findings strongly established the existence of knowledge retention challenges. Among those established through the survey findings included retirements (58.9%), resignations (64.5%) and deaths (58.9%). The interviewees also mentioned these knowledge loss challenges. Furthermore, both the survey and interview findings echoed effects of these knowledge loss challenges as being:

- Disruption of services provided;
- Overworking available staff; and

- Lack of effective and efficient operational continuity.

Supporting the above view was the fact that 87.9% of survey respondents agreed that attrition challenges deprived UNZA of relevant operational knowledge and 55.5% held the view that UNZA had no knowledge preservation methods in place. The existing loss of operational knowledge and lack of knowledge preservation techniques at UNZA were also expressed by most interviewees.

The researcher also wished to verify whether UNZA required a knowledge retention policy. According to the survey findings, 89.5% of the respondents declared the need for a knowledge retention policy. This strong support for the need to develop a knowledge retention policy for UNZA is in line with Butcher (2007) who argues that managing university operational knowledge should be a must for any educational institution. The implication of these findings therefore, indicate that UNZA shares similar concerns with universities internationally and in Africa with regard to the availability of knowledge retention challenges and the need to put mitigation measures such as policies and strategies in place (Kidwell, Vander Linde and Johnson 2003; Sawyer 2004; University of California 2006; UniSA 2007).

The findings of this study on knowledge retention at UNZA support Sawyer's (2004) call for the need to consider the management of knowledge in African universities. Based on both the survey and interview findings, it can be argued that institutions of higher learning internationally and in Africa are facing loss of operational knowledge. It has also been established that higher learning institutions both internationally and in Africa have taken necessary strides to address the challenges. However, the researcher was unable to find a policy or strategy document on knowledge retention developed by a higher learning institution in Africa in general and at UNZA in particular.

5.3 TOOLS, METHODS AND TECHNIQUES FOR KNOWLEDGE ASSESSMENT, ACQUISITION AND TRANSFER

The third objective of this study was to establish tools, methods and techniques for knowledge assessment, knowledge acquisition and knowledge transfer. This study, through document review established various practices for knowledge assessment, acquisition and transfer. The knowledge assessment, acquisition and transfer practices that were established were used as a framework to investigate the use of these tools, methods and techniques at UNZA and they are presented below.

5.3.1 Knowledge Assessment Practices at UNZA

The fourth objective of this study investigated knowledge assessment practices that existed at UNZA. Knowledge assessment is an initial stage in any knowledge management programme (Jarrar 2002; Paramasivan 2003). It aims at understanding, establishing and ascertaining an organisation's capabilities and competencies in form of tacit and explicit knowledge assets (Henczel 2000; Jarrar 2002).

According to literature findings, knowledge assessment practices include organisational capabilities assessment, workforce planning and knowledge auditing. These knowledge assessment practices are all concerned with the revealing of core knowledge competencies that ensure efficient and effective operational performance (Henczel 2000; Jarrar 2002; Liebowitz *et al.*, 2000). Whereas organisational capabilities assessment reveals explicit (documented) core knowledge competencies (Consultas 2007; Dosi, Faillo and Marengo 2003; Romhardt 1997; Rothwell 2004; Rushcliffe Borough Council 2005), workforce planning reveals core tacit knowledge competencies (Australian National Audit Office 2005; Braintree District Council 2006; Sandwell Metropolitan Borough Council 2006; University of New England (2002). Knowledge auditing on the other

hand is concerned with the revealing of both explicit and tacit knowledge (Choy, Lee and Cheung 2004; Hylton 2002; NeLH 2005).

5.3.1.1 Organisational Capabilities Assessment

Organisational capability assessment involves the identification of documented operational processes, policies, work manuals or indeed procedures (Consultas 2007; Dosi, Faillo and Marengo 2003; Rothwell 2004; Rushcliffe Borough Council 2005). These operational processes, policies, work manuals and procedures are considered as repositories of operational relevant knowledge (Dosi, Faillo and Marengo 2003). The rationale for creating such repositories includes the need to enhance operational efficiency and effectiveness through the reduction of dependency on individuals to remember operational procedures while carrying out their duties (Kruse 2003; Romhardt 1997). This need recognises the reality that organisations face attrition challenges which lead to loss of operational relevant knowledge (Bogdanowicz and Bailey 2002). As such, individuals in an organisation are, therefore, dispensable and thus availability of documented operational processes, policies, work manuals or procedures serve as a source of operational knowledge for all, and especially for new individuals who may replace lost experienced and knowledgeable staff (Rothwell 2004).

In view of the above and in recognition of the variety of tasks carried out at UNZA, this study in both the survey and interviews solicited for available documented processes, policies, work manuals and procedures (explicit knowledge assets). In the survey results, few (13.7%) respondents mentioned the availability of a teaching task that has been documented. Hardly any documented processes were mentioned for functions such as consultancy, recruitment and training of staff. Thus, the survey findings revealed that, of the known documented processes, policies, work manuals and procedures, none of them covered core academic functions such as curriculum development, research and academic citizenship or public life.

For the reason that the researcher wanted to be thorough on the availability of explicit knowledge assets, knowledge assessment statements were provided. The findings indicated that most respondents held the view that departments communicated their programme's objectives and strategies (60.5%). However, on whether departments/programme's policies were clearly communicated to all employees, 41.2% agreed and 31.5% disagreed while 27.4% had no opinion. Considering these statistics, there is no clear denial or acceptance of the fact that departments/programme's policies were clearly communicated to all employees. In addition, the results show a resentment of data and information being disseminated on regular basis through both electronic and traditional information channels as 28.3% agreed and 42.7% disagreed while 29.0% had no opinion. This finding may be used to explain the reason why academics could hardly identify even the few available documented processes, policies, work manuals and procedures since information is hardly disseminated among staff.

The results obtained through interviews with regard to the availability of documented processes, policies, work manuals and procedures indicate that actual work tasks at UNZA have not been documented. However, there are some written general processes, policies and procedures, among those mentioned being the following:

- Some written policies, procedures and regulations covering some teaching tasks such as syllabuses, time table and assessment criteria for examination;
- A written but not yet wholly implemented policy on consultancy;
- A written draft research policy that provides a general framework for conducting research;
- Some written procedure on troubleshooting and maintenance of computer hardware;
- Some policies and procedures for some tasks such as cataloguing and classification in the University Library; and

- Some policies and procedures on some of the human resources functions such as training, recruitment and promotion of academic staff.

Considering the number of specialised units and tasks available at UNZA, the established documented processes, policies, work manuals and procedures are not sufficiently representing what could be documented. For instance, it was established that currently UNZA does not have an integrated human resource management policy. Thus, although a training policy is currently available, there was no comprehensive policy on recruitment or procedures on other human resources functions such as industrial relations, safety and health, and performance appraisal among others.

Similarly, the researcher observed that while there are documented syllabuses, time tables and assessment criteria for examinations representing the core function of teaching, the actual teaching as a task has not been documented. For instance, there is no documentation that defines teaching and its role at UNZA. There is no documentation on how to prepare teaching aids such as lecture notes and lesson plans as well as documentation on student/lecturer relationship. Equally, the researcher noted that there was no documentation that defined consultancy as a task at UNZA, how to source and manage it and the value it added to knowledge creation and promotion of academics in various ranks. Furthermore, an illustration of undocumented work tasks would include among others the following:

- How to write minutes for various meetings held at UNZA (this is major task for administrative support staff that requires standardisation);
- How to develop or review curriculum; and
- What it takes to obtain a work permit for an expatriate staff.

Except in a few instances, the discussion on the findings for both the results obtained through the survey and interviews agree that there is paucity with regard to the availability of documented processes, policies, work manuals and

procedures at UNZA. The findings, therefore, indicate that UNZA hardly knows its operational capability due to the little documentation available on how work gets done in the various operations carried out at UNZA (Dosi, Faillo and Marengo 2003). This in turn entails that there is no mechanism in place that sets a platform upon which operational knowledge within UNZA could be acquired, retained and leveraged for the sustenance of effective and efficient operations.

The above point of view by the researcher is further strengthened by the fact that 66.1% of survey respondents agreed that it was important for UNZA to possess documented processes, policies, work manuals and procedures for operations. This affirmation on the importance of documented processes, policies, work manuals and procedures is in line with the advocacy for the creation of knowledge repositories for operational benefit (Dosi, Faillo and Marengo 2003; Kruse 2003; Romhardt 1997; Rothwell 2004).

5.3.1.2 Workforce Planning

Workforce planning involves the management of an organisation's tacit knowledge by ensuring the availability of employees with relevant experience, skills and knowledge all the time (American Public Power Association 2005; Braintree District Council 2006). The findings on the assessment of tacit knowledge through workforce planning were obtained through interviews as workforce planning was a responsibility of heads of units and UNZA management. According to the findings, it was clear that workforce planning was not a formal recognised practice as only a few units undertake some uncoordinated planning. The interviewee whose responsibility should include workforce planning declared that no formal practice was in place. The implication of this finding, therefore, entails that UNZA currently does not have a system for identifying the knowledge requirement for effective and efficient undertaking of operations (The Australian National Audit Office 2005; Sandwell Metropolitan Borough Council 2006; University of Albert 2007; University of New England 2002).

5.3.1.3 Knowledge Auditing

The last knowledge assessment tool investigated was knowledge auditing. According to Hylton (2002) knowledge auditing seeks to expose the available explicit and tacit knowledge resources possessed by an organisation for operational benefit. Such exposure of knowledge resources usually culminates into inventories (NeLH 2005; Paramasivan 2003). In investigating knowledge auditing at UNZA, the parameter used by the researcher was the availability of skills and competencies inventories. According to the survey results, 50% of respondents revealed that UNZA had no skills and competencies inventories while only 36.3% agreed to the availability of skills and competencies inventories at UNZA. Furthermore, 13.7% remained mute. With regard to the interview findings, only one interviewee claimed to have a skills and competencies inventory in his unit. These results, therefore, show that UNZA does not have skills and competencies inventories. This deficiency entails that it is difficult for UNZA to know the risks and opportunities associated with its current knowledge base (Hylton 2002; Paramasivan 2003).

In conclusion, the findings of this study indicate that while organisations are using documentation of work operations, workforce planning and knowledge auditing to assess organisational capabilities in ensuring effective and efficient operational performance (American Public Power Association 2005; Braintree District Council 2006; Dosi, Failo and Marengo 2003; Hylton 2002; Rothwell 2004; University of New England 2002), UNZA has no adequate knowledge assessment practices in place. This, therefore, entails that it is difficult to retain operational knowledge in order to sustain performance in various operations at UNZA (Dosi, Failo and Marengo 2003; Hylton 2002; Paramasivan 2003; Rothwell 2004).

5.3.2 Knowledge Acquisition Practices at UNZA

The fifth objective of this study investigated the available knowledge acquisition practices at UNZA. Knowledge acquisition refers to the practices used by an

organisation to possess knowledge (Choo 2001; DeLong 2004; Liou 1990; Man 2006). As already mentioned, UNZA has a number of functions performed by its staff that include academic, technical, administrative/management and professional tasks. Unique skills and knowledge are required to perform these tasks competently.

With regard to knowledge acquisition practices, literature findings established recruitment, training and development, brainstorming, expert systems, subject matter experts and after action reviews. These practices are concerned with how staff get hold of relevant operational knowledge, that is, through approaches such as explicit to tacit (organisational learning) or tacit to explicit (organisational memory creation) (Cheah, Rashid and Abidi 2003; Lyles and Salk 2006:14; McCall 2006; Nonaka 1994; Poulymenakou, Cornford and Whitley 1990; Soo, Midgley and Devinney 2002; Tsai and Lee 2006). Practices viewed to facilitate knowledge acquisition through explicit to tacit include expert systems and training and development (Corredoira and Rosenkopf 2006; IMB Business Consulting Services 2003; Okiy 2004; Rowold 2007) while those viewed to facilitate tacit to explicit include recruitment, brainstorming, subject matter experts and after action reviews (Corredoira and Rosenkopf 2006; Harman and Brelade 2000; IMB Business Consulting Services 2003; Liou 1990; Townsend and Gebhardt 2001).

With this understanding, both the survey and interviews data collection methods identified various knowledge acquisition practices currently obtainable at UNZA having benchmarked them against the above described knowledge acquisition techniques.

5.3.2.1 Recruitment

Recruitment as a knowledge acquisition technique involves the determination of an organisation's knowledge requirements and enrolling individuals deemed to possess such knowledge into the organisation (Corredoira and Rosenkopf 2006; DeLong 2004 and Harman and Brelade 2000). The findings on the acquisition of tacit

knowledge through recruitment were obtained through interviews. All interviewees explained that recruitment at UNZA was an undertaking for central administration. However, a few indicated that before recruiting someone, a needs assessment aimed at establishing gaps in knowledge and skills of their current staffs was conducted. Pursuing recruitment in this manner has been recommended as a best practice (DeLong 2004). However, all the interviewees expressed concern over the freeze on recruitment and unfilled establishments. Considering that 80% to 90% of cooperate knowledge is tacit based (Hylton 2002), this concern, therefore, indicates that UNZA's knowledge base is incomplete and as such, it is difficult to accomplish operations effectively and efficiently in the absence of required operational knowledge.

5.3.2.2 Training and Development

The process of equipping employees with relevant operational knowledge beneficial to organisational operations is called training and development (Browell 2000; Rowold 2007; Vermeulen 2002). Based on academic tasks of teaching, research, curriculum development, academic citizenship or public life and consultancy, the survey findings indicate that more than half of the respondents had experience in teaching (54.8%) and research (73.4), while a few respondents indicated to have had experience in curriculum development (24.2%), academic citizenship or public life (41.1%) and consultancy (45.2%). Besides this finding, the survey results further revealed that less than half of the academics were professionally trained in academic tasks of teaching (40.5%), research (45.2%), curriculum development (23.4%), academic citizenship or public life (18.5%) and consultancy (18.5%). With this deficiency having been established, there was overwhelming response for necessity to undergo training into functions, policies and procedures in the University (89.5%), teaching methodology (91.9%), research methodology (88.7%), curriculum development (86.3%), and in school/departmental administration and management (75%).

On the other hand, almost all interviewees claimed to facilitate knowledge acquisition through training, although most of it was not operationally specific. For

instance, core tasks such as teaching were not among those being undertaken. As such, it could be logical to think that most training undertaken could be on general operational awareness and not on addressing the need to acquire knowledge for specific core functions that employees undertake. The situation actually could be worse than what was established considering the fact that UNZA was yet to establish the training needs of its staff.

Thus, the results indicate that training and development aimed at the acquisition of job specific knowledge at UNZA was lacking. This logical assertion is supported by the survey results on the desire by respondents to have training in all the core tasks such as teaching, research, curriculum development, and general administration and management. The lack of training and development presupposes the inability to have effective and efficient performance in organisational operations (Vermeulen 2002).

5.3.2.3 Brainstorming

Brainstorming as a knowledge acquisition technique involves the generation of ideas by a group of people with a view to find solutions for a given problem (Liou (1990). According to the survey findings, 61.3% of the respondents agreed that brainstorming was used at UNZA. Similar findings were established from the interviewees as most of them reported that most decisions in their units were achieved through consensus in meetings.

5.3.2.4 Subject Matter Experts

Subject matter experts are individuals considered knowledgeable in a given subject area (IBM Business Consulting Services 2003). According to the survey results, 81.5% of respondents agreed that UNZA uses subject matter experts as a tool for knowledge acquisition. The interview findings also firmly acknowledged that subject matter experts constituted many of the operational committees at UNZA. This finding, therefore, indicates that in making operational decisions, UNZA placed value on subject matter experts as facilitators of knowledge acquisition.

This finding implies that there was some knowledge acquisition for operational relevant knowledge at UNZA (IBM Business Consulting Services 2003).

5.3.2.5 Expert Systems/Knowledge Bases

Expert systems/knowledge bases are computer-based repositories of explicit knowledge the IBM Business Consulting Services (2003). According to the survey findings, 69.4% of respondents indicated that expert systems/knowledge bases are not in use at UNZA. Similarly, all interviewees stated that UNZA had no expert systems/knowledge bases. Based on these findings, it is logical to conclude that UNZA does not use expert systems/knowledge bases for knowledge acquisition.

5.3.2.6 After Action Reviews

The last knowledge acquisition technique considered in this study was after action reviews. According to (IBM Business Consulting Services 2003) after action review is an operational practice in which improvements on operations are made by making deliberate efforts to re-evaluate them. The survey findings indicate that the practice is in use but not so much pronounced as only 13.7% reported that after action reviews were used very often, while 41.1% indicated that after action reviews were only used sometimes. All interviewees mentioned that their operations were reviewed at different forums such as Board of Studies for academic units. Given these findings, after action reviews as knowledge acquisition practice were found to be a prevalent at UNZA.

Given the above discussion, UNZA was currently doing well in terms of knowledge acquisition practices such as brainstorming, subject matter experts and after action reviews. However, critical knowledge acquisition practices such as recruitment and training and development are not effective. Coupled with none-availability of knowledge bases/repositories where employees could refer for best practice in a given task entails that there is more required to improve UNZA's capacity to acquire relevant operational knowledge if efficient and effective performance is to be achieved in operations (Kruse 2003).

5.3.3 Knowledge Transfer Practices at UNZA

In Chapter One, knowledge transfer has been defined as an activity that facilitates knowledge flows in organisations, departments or indeed sections and units (Bou-Llusar and Segarra-Cipres 2006). Such knowledge flows may involve interactions of individuals or indeed an individual making reference to codified knowledge (Lochhead and Stephens 2004; Newman and Conrad 1999).

The literature findings in Chapter Two revealed that knowledge transfer practices included succession planning, community of practice, knowledge repositories, mentoring, coaching, phased retirement, job rotation, story telling and orientation. Among these practices, those oriented towards the transfer of tacit knowledge include succession planning, community of practice, mentoring, coaching, phased retirement, job rotation and story telling (Bentley 1995; Butler and Roch-Tarry 2002; DeLong 2004; Gale 2007; Kastelli 2006; Leblanc and Hogg 2006; OhioEPA 2006; Stovel and Bontis 2002). Those deemed to be oriented towards the transfer of explicit knowledge include knowledge repositories and orientation (DeLong 2004; University of Melbourne 2002).

Knowledge transfer practices at UNZA were investigated through a survey conducted among academic members of staff and interviews with various heads of units. Both the survey and interviews followed a pattern of established knowledge transfer practices discussed in the foregoing paragraphs.

5.3.3.1 Succession Planning

A common knowledge transfer technique, 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 presented survey findings, only 27.4% of the respondents indicated that succession planning was in existence at UNZA. With regard to the interview findings, succession

planning as a formal knowledge transfer technique does not exist, as some of the respondents only alluded to the fact that in one way or another, they try to have people familiarised to most of the tasks in their units. Given the importance placed on succession planning (Stovel and Bontis 2002), the findings at UNZA clearly indicate that succession planning as a knowledge transfer technique was lacking.

5.3.3.2 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 9.7% respondents agreed that communities of practice existed at UNZA. However, a crosscheck question that provided statements that defined communities of practice, findings show that 50% of respondents belonged to an informal grouping where they share operational knowledge while 48.4% agreed to be a member of a formal grouping that share operational knowledge. These survey findings were affirmed by the interview findings in which most interviewees indicated that many meetings (for example, Board of Studies, weekly management meetings) were held in which various operational matters were discussed. Given these findings, one can safely argue that employees at UNZA 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.

5.3.3.3 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 for in order to mitigate attrition challenges and aid the learning period for new employees (DeLong 2002; DeLong 2004; Hanes, Gross and Ayres 2001; IBM Consulting Services 2003). In this research, the survey findings indicate that 31.5% of respondents agreed that UNZA had

knowledge repositories. Furthermore, and in order to verify this finding, only 29% agreed that their schools/departments had operational policies/procedures/work manuals located in a central place where each member of staff could easily access them. The interview results also show that UNZA lacks knowledge repositories. Given these results, it is clear that UNZA has no 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 and, therefore, UNZA's operational memory is weak (IMB Consulting Services 2003).

5.3.3.4 Mentorship, Formal and Informal

Mentorship is one way in which knowledge in an organisation can be transferred. According to OhioEPA (2006), mentoring 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 78.2% of the respondents agreed that both formal and informal mentorship existed at UNZA. However, a further verification of this finding revealed that only 22.6% agreed to the statement that new employees in their schools/departments were allocated a mentor. The interview results on the other hand revealed that no mentorship activities were in place except for the fact that each member of staff was encouraged to consult among colleagues on various issues regarding operations. These findings therefore, suggest that there could be some mentorship that goes on at UNZA, most of which could be informal. Such a situation shows lack of commitment in ensuring that operational knowledge at UNZA was transferred among staff when compared with other universities that have formally recognised mentorship programmes (University of Aberdeen 2006; University of Reading 2007).

5.3.3.5 Coaching

Related to mentorship, coaching involves the guiding and monitoring 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). The

survey results show that 62.9% of the respondents agreed that coaching existed at UNZA. However the interview results indicate that no coaching was in place at UNZA. This finding is thus somewhat similar to the findings on mentorship, and as such one could only argue that probably unofficial coaching of staff could be in place. This finding therefore contradicts the assertion that coaching is an important tool for knowledge transfer in intergenerational workforce and as such, UNZA was losing an opportunity for transferring knowledge from experienced long serving staff to young new employees (Henry 2006; Nitschke 2007).

5.3.3.6 Phased Retirement

In situations where retirements are identified as drivers for knowledge loss, phased retirements have been used to transfer knowledge among staff (Howard Community College 2007; Lochhead and Stephens 2004). This knowledge transfer technique is also common in universities (Gale 2007). From the presented survey findings above, 60.5% of the respondents revealed that phased retirement existed at UNZA. This finding was further affirmed by 77.1% of the respondents who agreed that fit eligible retirees at the age of 55 were often retained on contract conditions of service. The interview findings were also in support of the survey findings as interviewees under academic units agreed 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 exceptional skills and knowledge. These findings indicate that phased retirement was an existing practiced knowledge transfer technique. The findings are in line with the reviewed literature (Gale 2007; Howard Community College 2007; Lochhead and Stephens 2004).

5.3.3.7 Orientation, General and job specific

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 UNZA, 39.5% of the respondents agreed that both general and specific orientation existed at

UNZA. This finding is also in line with most interviewees who were of the view that no formal orientation programmes were organised for their staff, especially for academic members of staff. This finding contradicts the fact that staff orientation at UNZA was a formal requirement for all staff as reported by the interviewee vested with the responsibility.

5.3.3.8 Job Rotation

Rotation of staff in different roles is one of the approaches used to transfer relevant operational knowledge (UNESCWA 2003; Kastelli 2006). Based on the survey results, 60.5% of the respondents agreed that job rotation as a knowledge transfer practice existed at UNZA. The interview results revealed that job rotation was only practiced for non-academic staff. Overall, these results imply that job rotation was a knowledge transfer technique at UNZA. These findings therefore denote that through exposure to different roles, UNZA was able to transfer some relevant operational knowledge (UNESCWA 2003).

5.3.3.9 Story Telling

Narratives that constitute operational knowledge have been considered as knowledge transfer tools (Prusak 2001). The survey results show that story telling is not used as a knowledge transfer practice at UNZA considering that only 13.7% of the respondents agreed that it existed. The interview results also reveal that it was difficult to tell if stories formed part of the knowledge transfer tools used by staff in their operations. These findings imply that story telling as a knowledge transfer tool was lacking at UNZA. As such, the lack of story telling as a knowledge transfer technique entails that UNZA's capacity to expose tacit knowledge for operation benefit was lacking (Leblanc and Hogg 2006).

5.4 SUMMARY OF CHAPTER FIVE

This chapter has presented the interpretation and discussion of the research findings in this study. According to the interpretation, UNZA faces knowledge loss

challenges that have implications on operations as there were notable gaps in the established knowledge retention practices. Notwithstanding, a few positives were noted, although the majority of the considered knowledge retention practices were found to be lacking.

CHAPTER SIX:

SUMMARY OF MAJOR FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.0 INTRODUCTION

The preceding chapter presented an interpretation and discussion of the findings in relation to objectives of the study. As the interpretation of findings indicates, UNZA has serious knowledge loss challenges. This chapter presents the summary of major findings, conclusion and recommendations.

6.1 SUMMARY OF MAJOR FINDINGS

In Chapter One, the researcher envisaged that most organisations including UNZA were faced with the problem of knowledge loss and that proactive responses such as knowledge retention were required to handle the dilemma (DeLong 2004; Performance Agents 2006). Internationally and in African, 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 UNZA, the research findings established knowledge loss challenges 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 menace for operations (DeLong 2002; DeLong 2005; Hahn 2006; Padilla 2006; Purdum 2006; Sutherland and Jordaan 2004).

With a view to combat the established challenges, the literature review established a number of tools that can be used to retain knowledge in organisations. These knowledge retention tools grouped under knowledge assessment, acquisition and transfer were investigated to ascertain UNZA's efforts in retaining operational relevant knowledge. The results of the investigation were presented in Chapter

Four and interpreted and discussed in Chapter Five. These results show a number of noticeable gaps in the available knowledge retention practices currently in place at UNZA.

With regard to knowledge assessment as an integral dimension of knowledge retention, three techniques namely organisational capabilities assessment, workforce planning, and knowledge auditing were investigated. The findings on these techniques were not positive for UNZA. It was clear that very few work processes and tasks have been documented. Workforce planning was not practiced and skills and competency inventories were lacking. Knowledge assessment is a well-known tool that serves as a source of operational knowledge especially in organisations faced with knowledge loss challenges (Rothwell 2004). As such, authorities such as Henczel (2000), Hylton (2002), Jarra (2002) and Paramasivan (2003) argue that the lack of knowledge assessment as a knowledge retention tool undermines operational performance as it would be difficult for an organisation to uncover and ascertain its operational strengths and weaknesses with regard to vital operational knowledge.

Considering the findings on knowledge acquisition as another knowledge retention dimension, 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 UNZA, a number of committees that handle operational matters were found to be in existence. This finding, therefore, is supported by authorities 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 enhancement.

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 2002).

The last vital component of knowledge retention considered in this study was knowledge retention. 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 the strengths in the transfer of knowledge at UNZA. 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, story telling, orientation, general and job specific, and mentorship, formal and informal were all found to be lacking at UNZA. Referring to succession planning, Butler and Roch-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 the difficulty observed in finding potential replacements (Hanes, Gross and Ayres 2001; DeLong 2002; Padilla 2006).

6.2 CONCLUSIONS

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

- Documented work processes;
- Knowledge auditing;
- Workforce planning;
- Training and development for specific job tasks;
- Succession planning;
- Orientation for general and job specific;
- Knowledge repositories
- Story telling;
- Coaching; and
- Communities of practice.

Considering the value placed on the above list of lacking essential practices for knowledge retention entails that UNZA is indeed in dire need for a solution to help retain operational relevant knowledge. This need was well established in the findings. However, UNZA's knowledge retention efforts could be aided by some positive aspects that were determined such as the following:

- Availability of general policies for some activities within various functions such as teaching, research, consultancy and human resources.
- Availability of a number of courses relevant for some specific job functions in the university.
- Operations based on committees in which expertise emanating from experienced members of staff are utilised.

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

Notwithstanding, a prima-facie case for the retention of operational relevant knowledge at UNZA has been established. Thus, the researcher therefore, proposes that UNZA should consider the formulation of a well coordinated and integrated approach for managing operational relevant knowledge.

In view of the above, this chapter proposes guidelines that UNZA could consider when developing a knowledge retention policy.

6.3 RECOMMENDATIONS: UNZA KNOWLEDGE RETENTION POLICY GUIDELINES

The need to recommend guidelines for the knowledge management policy to enhance knowledge retention at UNZA was the drive behind this study. It was envisaged that the retention of knowledge in universities was beneficial in many ways (See section 1.3 in Chapter One) and situations supporting this cause were well established. Aspects for a knowledge retention policy were also investigated (See section 2.11 in Chapter Two) and as such, a number of specific recommendations in this Chapter have been made on the following aspects:

- Policy vision and objectives;
- Knowledge drivers for the policy;
- Knowledge types and approaches;
- Knowledge assessment practices;
- Knowledge acquisition practices; and
- Knowledge transfer practices.

The recommendations made below are based on the need to help UNZA maintain its organisational memory, that is, the operational knowledge within UNZA employees as well as the organisational operational procedures and related documents.

6.3.1 Guidelines for the Policy Vision and Objectives

Within Chapter One of this dissertation, it was envisaged that UNZA faced knowledge retention challenges that jeopardise operational performance. These assertions were also confirmed by the data collected and analysed in Chapters Four and Five. Given the findings, this study recommends that the vision and objective for the UNZA policy for knowledge retention should be along the following lines:

- (a) Vision: To achieve excellence in operations and, therefore, make UNZA the most preferred learning institution and employer of choice.

- (b) Objective: To sustain and ensure effective and efficient operations through the retention of relevant operational knowledge assets.

6.3.2 Guidelines on Knowledge Drivers for the Policy

Chapter Two presented a number of drivers that lead to the need for retaining organisational relevant operational knowledge. Such drivers include attrition and lack of documentation for operational knowledge. In this study, attritions and lack of documentation for operations were found at UNZA. This study therefore, recommends that the drivers for the knowledge retention policy for UNZA should be:

- (a) The established attrition challenges; and
- (b) The need to document operational relevant knowledge.

It is hoped that once the above drivers are considered, it may be possible to sustain effective and efficient operational performance.

6.3.3 Guidelines for Knowledge Types and Approaches

This study investigated both tacit and explicit knowledge at UNZA. It is recommended that an integrated approach should be used to retain relevant

operational knowledge at UNZA. The integration should consider both tacit and explicit knowledge.

6.3.4 Guidelines for Knowledge Assessment Practices

A number of knowledge assessment techniques were reviewed in Chapter Two and investigated in Chapters Four and Five. In order for UNZA to be able to identify its strengths for operational benefit and based on the findings of this study, it is recommended that the following knowledge assessment practices be considered:

- Organisational capabilities assessment;
- Workforce planning; and
- Knowledge auditing.

The above knowledge assessment practices will offer the following benefits to UNZA:

- The documentation of operational processes and tasks will create a repository of explicit knowledge;
- Workforce planning will enable UNZA forecast its knowledge requirements for effective and efficient operations; and
- Knowledge auditing will clearly identify UNZA's knowledge base and as such, inventories for skills and competences could be developed. The availability of skills and competencies profiles could help a great deal in placing right candidates on various research projects at UNZA.

6.3.5 Guidelines on Knowledge Acquisition Practices

A number of knowledge acquisition techniques were reviewed in Chapter Two and investigated in Chapters Four and Five. In order for UNZA to be able to ensure sufficiency in its operational knowledge base, it is recommended that the following knowledge acquisition practices be considered:

- Recruitment;
- Training and development;

- Brainstorming;
- Subject matter experts;
- Expert systems/knowledge bases; and
- After action reviews.

Many benefits have been associated with the above knowledge acquisition practices including the following:

- Recruitment, training and development, brainstorming and availability of subject matter experts ensures the acquisition and generation of new innovative ideas and serves as tools for not only replacing knowledge loss incurred through attrition challenges but also speeding up the process of knowledge gain for new employees;
- Possessing expert systems/knowledge bases will be surety for easily accessible guidance for executing operations effectively and efficiently; and
- Introducing after action reviews will ensure frequent reviews on how best to handle tasks and in turn perfect operations.

6.3.6 Guidelines on Knowledge Transfer Practices

In order for UNZA to be able to spread its operational knowledge, it is recommended that the following knowledge transfer practices be considered:

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

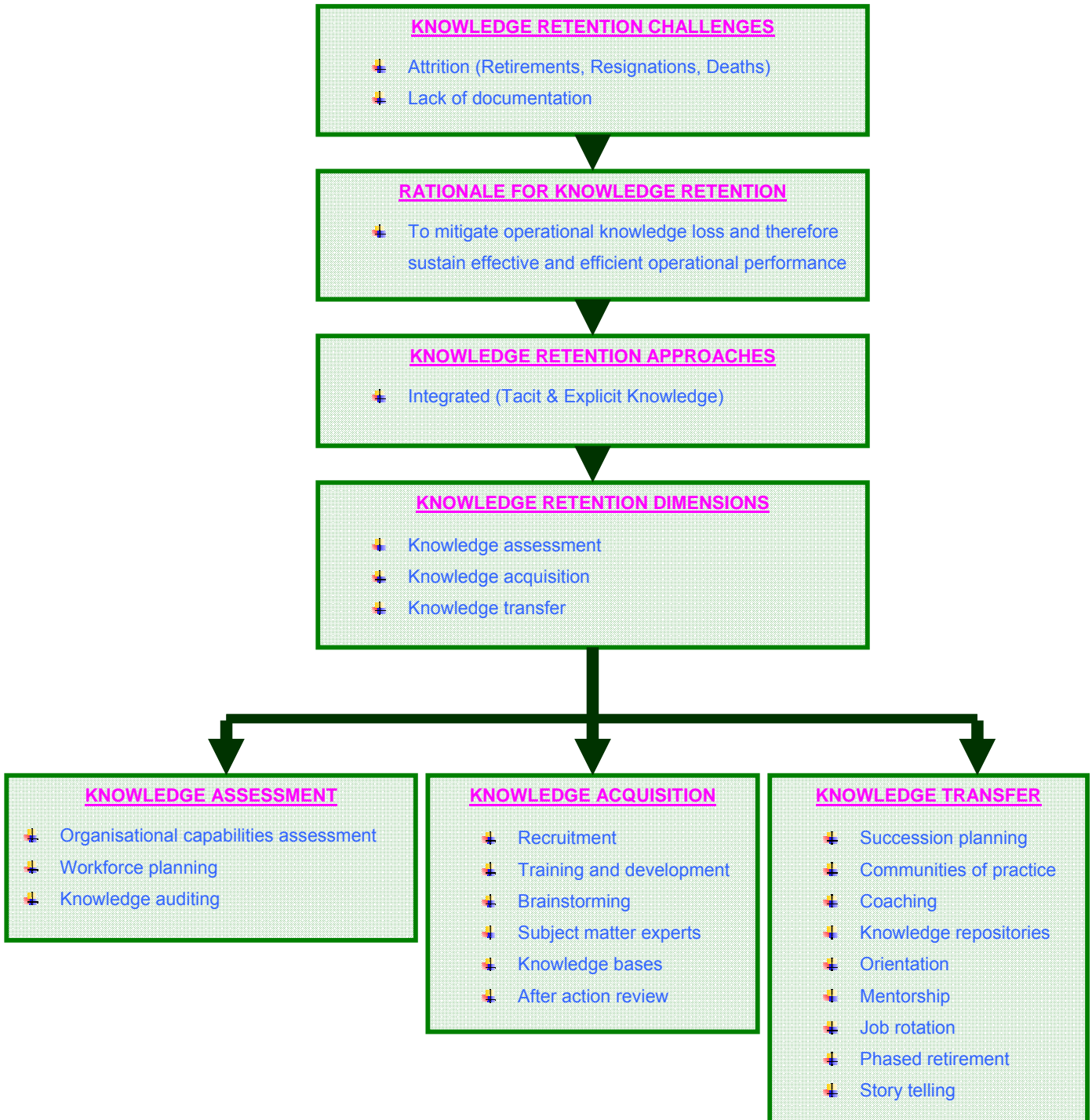
A number of benefits are indeed associated with the above knowledge transfer practices. By considering the above-recommended practices, UNZA stands to benefit in the following ways:

- Succession planning will help to proactively identify potential replacements for attrition incurred in areas where continuity is a must for operational sustenance;
- Communities of practice will enable environments in which knowledge sharing shall be fostered and enhanced;
- Coaching and mentorship shall serve as a direct injection of required operational knowledge for employees;
- Stories will be of benefit in an on-going creation of organisational memory;
- Orientation will provide general and specific understanding of UNZA expectations from its employees as well as instilling confidence in staff;
- Rotation of employees shall expose staff to the various operations and environments at UNZA and as such the memory for operational knowledge shall be greatly enhanced; and
- Phased retirement shall offer an opportunity to access the vast operational knowledge of serving staff as well as an extended opportunity to extract tacit knowledge into explicit knowledge for operational benefit.

6.4 UNZA KNOWLEDGE RETENTION FRAMEWORK

Considering the findings and the recommendations made for UNZA, the suggested Knowledge Retention Framework (KRF) can be presented as follows:

Figure 6.1: UNZA Knowledge Retention Framework



6.5 RECOMMENDATIONS FOR FUTURE RESEARCH

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

However, implementing knowledge retention programmes requires further understating. This need was noted in Chapter One (See section 1.4.3). Thus, there is need that the recommended knowledge retention framework should be implemented. The implementation will certainly require the availability of a systematic approach that must address aspects such as organisational culture, technology infrastructure, costs involved, management buy-in, to mention but a few (UNESCWA 2003). Given this understanding, this research proposes that a study be conducted to determine requirements for implementing knowledge retention policies. Thus establishing an implementation framework is recommended.

6.6 SUMMARY OF CHAPTER SIX

Having recognised the findings of the study, this chapter presented guidelines for stemming knowledge retention challenges at UNZA and consideration of an implementation framework has also been advised.

References

Abbreviations of references used in the dissertation

ADB see Asian Development Bank

UNESCWA see United Nations Economic and Social Commission for Western Asia

NeLH see National Electronic Library for Health

TVA see Tennessee Valley Authority

UniSA see University of South Australia

UNZA see University of Zambia

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APPENDICES

Appendix I: Research objectives, questions and possible sources of data

Research objective	Research question	Possible Source of data
To determine and assess knowledge management/retention policies by higher learning institutions	What knowledge management/retention policies and practices are in existence in higher learning institutions?	Literature
To determine what is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa	What is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa?	Literature
To establish tools, methods and techniques for knowledge assessment, knowledge acquisition and knowledge transfer	What tools, methods and techniques are used for knowledge assessment, knowledge acquisition and knowledge transfer?	Literature
To identify knowledge assessment practices at UNZA	What knowledge assessment practices at UNZA?	Questionnaire/Interviews
To identify knowledge acquisition practices at UNZA	What knowledge acquisition practices at UNZA?	Questionnaire/Interviews
To identify knowledge transfer practices at UNZA	What knowledge transfer practices at UNZA?	Questionnaire/Interviews

Appendix II: Questionnaire

QUESTIONNAIRE FOR ACADEMIC MEMBERS OF STAFF

INTRODUCTION

Dear respondent,

My name is Sitali Wamundila. I am carrying out a research for my Masters dissertation at the University of South Africa. My topic is **Developing Knowledge Management Guidelines for a Knowledge Management Policy to Enhance Knowledge Retention at The University of Zambia**. The research objectives for my study are as follows:

- i. To determine and assess knowledge management/retention policies by higher learning institutions.
- ii. To determine what is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa.
- iii. To establish tools, methods and techniques for knowledge assessment, knowledge acquisition and knowledge transfer.
- iv. To identify knowledge assessment practices at UNZA.
- v. To identify knowledge acquisition practices at UNZA.
- vi. To identify knowledge transfer practices at UNZA.
- vii. Based on objectives i to vi, to design guidelines for knowledge retention at UNZA.

Your selection to participate in this research was purely by stratified random sampling. I therefore look forward to your support in this noble cause.

Please note that your views in this questionnaire shall not be, in any way, used for any other purpose rather than the advancement of this study. You are therefore assured that your views on the content of this questionnaire shall not be used in any 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 confidentiality. Individual responses will not be identifiable as they will be treated in aggregate when reporting the findings. However, your participation in this research is voluntary.

INSTRUCTIONS

1. Write in the provided spaces where appropriate, if space is not enough, please you may use a separate piece of paper
2. Please tick (✓) in appropriate boxes as provided.
3. There are definitions of terms that you may not be familiar with at the beginning of each section.

Once more, thank you for your response to this noble cause!

SECTION A: PERSONAL DETAILS

1. a) School.....
- b) Department.....
- c) Area of specialisation.....
- d) Rank.....
- e) Duration in academic position.....
- f) Highest qualification.....

g) Age range

< 24 years 25-29 years 30-34 years 35-39 years
40-44 years 45-49 years > 50 years

h) Your gender

Female Male

i) Number of years you have worked in a higher education institution

Less than 1 year 1-3 years 4-6 years
7-9 years 10 or more years

SECTION B: KNOWLEDGE RETENTION

Definition and Instructions

Knowledge retention is defined as an activity directed at retaining and making available valuable knowledge necessary for sustaining operations efficiently and effectively. It also serves as a mechanism for reducing errors, inefficiencies, redundancies, re-inventions and minimising costs associated with knowledge loss. In this section you are requested to identify knowledge retention practices available in your school/department.

2. Do you have a knowledge management and retention policy in your school/department?

Yes No

3. Departing academic members of staff from your school/department to another school/department at UNZA, or indeed to another institution deprives your school/department of relevant operational academic knowledge?

Strongly agree Agree No opinion Disagree Strongly disagree

4. Which of the following turnover and mobility challenges has your school/department ever faced?

Challenge	Yes	No
Retirements		
Deaths		
Resignations		
Transfers		
Secondments		

5. How has each of the acknowledged challenges in question 4 affected your operations as a school/department?

Challenge	Effect on operations
Retirements	
Deaths	
Resignations	
Transfers	
Secondments	

6. As a school/department what measures has your put in place to address the acknowledged challenges in question 4?

Challenge	Control Measures
Retirements	
Deaths	
Resignations	
Transfers	
Secondments	

7. In order to ensure sustenance of operations in organisations, certain systems/mechanisms/tools must be put in place to preserve relevant operational knowledge. Based on your own observation, and past experience, list any mechanism(s) you are aware of that your school/department use to retain a departing member of staff's knowledge necessary for operations and carrying out academic work in your school/department?

- 1.....
- 2.
- 3.

8. If you are not aware of any mechanism used by your school/department to retain departing members of staff's knowledge, kindly state the critical knowledge that you think your school/department should at least acquire from a departing employee as well as that which should be made available for new entrants (newly appointed lecturers). Also state your recommended method that should be used to retain knowledge that may be lost.

Critical knowledge that the school/department should at least acquire from a departing academic member of staff

.....

Critical knowledge that the school/department should at least acquire for use by new entrants

.....

Recommended method(s) for retaining the knowledge that may be lost

.....

SECTION C: KNOWLEDGE ASSESSMENT

Definition and Instructions

Knowledge assessment is an investigation of corporate knowledge whose aim is to understand and establish an organisation's capabilities and related competencies. Such capabilities and competencies are for purposes of enhancing and maintaining efficiency and effectiveness within the organisation's operations. In this section you are requested to identify knowledge assessment tools available in your school/department.

9. In order to get work done efficiently and effectively most institutions organise their work by way of policies, procedures and work manuals. Others have also made use of process documentation as a tool for enhancing work performance. In your case, thinking in terms of teaching, research, curriculum development and any other academic related work, kindly list the documented processes (flow charting how work is done), policies, work manuals and procedures that are used by your school/department.

Documented process (flow charting how work is done)

- 1.....
2.
3.

Policies

- 1.....
2.
3.

Work manuals

- 1.....
2.
3.

Procedures

- 1.....
- 2.....
- 3.....

10. For the listed documented processes (flow charts), policies, work manuals and procedures in question 9, do you think they have enhanced your work in the school/department?

Option	Yes	No
Documented processes (flow charts)		
Policies		
Work manuals		
Procedures		

11. How important do you think documented processes (flow charts), policies, work manuals and procedures are in enhancing academic work in your school/department?

- Very important Important No opinion Somewhat important
 Not important

12. Communication

Statement	Strongly agree	Agree	No opinion	Disagree	Strongly disagree
The department/programme's objectives and strategies are clearly written and communicated with all academics					
The department/programme's					

<p>policies are clearly communicated with all employees</p>					
<p>Databases of good work practices, lessons learned or listing of experts are regularly updated in department/programme's</p>					
<p>Documents providing information regarding new knowledge created are periodically circulated in the school/department</p>					
<p>The data and information are disseminated on a regular basis through both electronic and traditional information channels</p>					
<p>Discussion forums are organized in the department/programme on time basis in order to encourage people' knowledge transfer.</p>					
<p>Academics transfer knowledge through</p> <ul style="list-style-type: none"> ▪ regularly updating databases of good work practices, lessons learned or listings of experts 					
<ul style="list-style-type: none"> ▪ facilitating collaborative work by projects teams that are physically separated ("virtual teams") 					

13. Do you have skills and competencies inventories in your school/department?

Yes

No

SECTION C: KNOWLEDGE ACQUISITION

Definition and Instructions

Knowledge acquisition refers to mechanisms that enable an organisation/individual to possess knowledge relevant for carrying out their operations/tasks. In this section you are requested to identify knowledge acquisition tools available in your school/department.

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

- a) Teaching
- b) Research
- c) Curriculum development
- d) Academic citizenship or public life
- e) Consultancy
- f) Other (please specify):.....
.....

15. At the time you joined the University of Zambia did you already have experience in any of the following functions?

Activity	Yes	No
Teaching		
Research		
Curriculum development		
Academic citizenship or public life		
Consultancy		

16. Did you ever have training in any of the following listed functions at the time you became an academic at UNZA? (*Please note that the training referred to does not include your Bachelors, Masters and PhD degree. It only refers to specialised*

professional training for purposes of carrying out those tasks efficiently and effectively).

Activity	Yes	No
Teaching		
Research		
Curriculum development		
Academic citizenship or public life		
Consultancy		

17. If at the time you joined the university you had not participated in the above mentioned functions in question 15, which of them do you think you required specialised training before commencement of your duties as a Lecturer?

Teaching

Research

Curriculum development

Academic citizenship or public life

Consultancy

Others (Please specify):.....

18. 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 the compiling of a teaching portfolio)		
Introduction to short courses on research methodology (Short and long term research career)		
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		

19. Besides the above mentioned specialised training in question 18, are there any short training courses that you feel the university should either recommend or introduce to develop professional competencies of academic staff?

Yes No

20. If the answer to question 19 above is “yes”, list the short courses that you would recommend.

- 1.....
- 2.....
- 3.....

21. 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):.....
.....

22. 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: KNOWLEDGE TRANSFER

Definition and Instructions

Knowledge transfer refers to the flow of knowledge among individuals in organisations, departments or indeed sections and units. Such an activity involves interactions of individuals or indeed individuals making reference to codified knowledge. In this section, you are requested to identify various techniques that your school/department uses for knowledge transfer.

23. Once an institution has been established, there are certain functions that need to be performed. While these functions may remain from time immemorial, the people that carry out those functions may change from time to time. Thus it becomes apparent to pass on knowledge among staff. With this understanding, how do you rate your knowledge transfer activities in your school/department?

Excellent Very Good Good Fair Poor Very

Poor

- 24 Which of the following knowledge transfer activities exist and you have used in your school/department?

Knowledge transfer activities	Exist		Used	
	Yes	No	Yes	No
Succession planning				
Communities of practice				
Coaching				
Knowledge repositories				
Story telling				
Orientation, general and job specific				
Mentorship, formal and informal				

Job rotation				
Phased retirement				

25. For each of the knowledge transfer activities that you have acknowledged to exist in your school/department in question 24, how effective do you think they are in facilitating knowledge flow?

Activity	Very Effective	Effective	No opinion	Somewhat effective	Not effective
Succession planning					
Communities of practice					
Coaching					
Knowledge repositories					
Story telling					
Orientation, general and job specific					
Mentorship, formal and informal					
Job rotation					
Phased retirement					
Other (specify please)					

26. Since you joined the university, how often do you think senior academic members of staff have shared their operational knowledge with you for purposes of helping you carry out your work effectively and efficiently (*Please answer this question if you have served the University for less than 10 years*)

Very Often Sometimes No opinion Rare Never

27. It is assumed that the longer an employee stays in an organisation the more familiar and knowledgeable they become on the tasks they perform. How often do you share your knowledge with new entrants in your school/department? (*Please answer this question if you have served the University for more than 5 years*)

Very Often Sometimes No opinion Rare Never

28. Which of the following knowledge transfer tools have been formally recognised by way of having policy/procedures or regulations in place in your school/department?

Knowledge transfer activities	Yes	No
Succession planning		
Communities of practice		
Coaching		
Knowledge repositories		
Story telling		
Orientation, general and job specific		
Mentorship, formal and informal		
Job rotation		
Phased retirement		

29. In your own view how important do you think formalising knowledge transfer tools listed in question 28 can be in your school/department?

Very important Important No opinion Somewhat important
 Not at all important

30. Availability of senior academic members of staff such as Professors and Senior Lecturers to mention but a few is a good sign of capacity for a school/department to achieve its mandate of running postgraduate and undergraduate programmes effectively and efficiently. However, seniority in academic ranks is usually attained through promotion. At the University of Zambia research (publishing), teaching and public life form among others, the basis upon which promotion can be awarded. In your own view, are there mechanisms in place that support lecturers to attain promotional status, that is, to move from one position to the other in your school/department?

Yes No

31. If your answer to question 30 is “NO”, do you recommend that your school/department should introduce formal support to lecturers for promotional purposes?

Yes No

32. What are the specific measures that you would recommend your school/department should formally introduce to supports lecturers attain promotional status?

- 1.....
- 2.....
- 3.....

33. To what extent do you agree with the following statements?

Statement	Strongly agree	Agree	No Opinion	Disagree	Strongly disagree
When new employees are recruited in your school/department, they are allocated a mentor/coach					
Induction of new staff is conducted and involves orientation to general job tasks					
Induction of new staff is conducted and involves orientation to specific job tasks					
When members of staff reach the retirement age of 55 years and they are fit to continue with their work, they are often retained as contract workers					
You belong to an informal groupings of employees in your school/department in which you share operational relevant knowledge					
You belong to formal groupings of employees in your school/department in which you share operational					

relevant knowledge					
Members of staff in your school/department are usually rotated in various functions (E.g. Course coordination, Role of Head of Department)					
All your school/departmental operational policies/procedures/work manuals are located in a central place accessible to all members of staff					
You share narratives of work activities that are beneficial to members of staff in your school/department					

34. To what extent do you agree with the following statement?

Statement	Strongly agree	Agree	No Opinion	Disagree	Strongly disagree
UNZA requires a knowledge management policy to enhance knowledge retention for operational benefit					

35. Do you have any ideas related to knowledge sharing that I have not covered?

Yes No

36. If your answer to question 35 above is 'yes' kindly outline your knowledge sharing ideas below

.....

.....

.....

Thank you for answering this questionnaire.

Appendix III: Interview Guide

INTERVIEW GUIDE

Introduction

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

My name is Sitali Wamundila. I am carrying out a research for my Masters dissertation at the University of South Africa. My topic is **Developing Knowledge Management Guidelines for a Knowledge Management Policy to Enhance Knowledge Retention at the University of Zambia**. 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 confidentiality. Your participation is voluntary and you are free to withdraw from the process at any point during the interview process.

I also wish to inform you that this interview session will be based on three sections. Section one has questions on knowledge retention, section two has questions on knowledge assessment, section three has questions on knowledge acquisition while section four has questions on knowledge transfer. Please feel free to ask questions where you may not be clear.

Thank you.

TOPIC:

DEVELOPING GUIDELINES FOR A KNOWLEDGE MANAGEMENT POLICY TO ENHANCE KNOWLEDGE RETENTION AT THE UNIVERSITY OF ZAMBIA

Date of interview:.....

Place of interview:.....

Rank of interviewee:.....

Gender of interviewee:.....

AIM OF THE RESEARCH

To design guidelines for a knowledge management policy to enhance knowledge retention at UNZA.

Research objectives

- i. To determine and assess knowledge management/retention policies by higher learning institutions.
- ii. To determine what is being done regarding knowledge retention at other institutions of higher education, internationally and in Africa.
- iii. Based on literature analysis, to establish tools, methods and techniques for knowledge assessment, knowledge acquisition and knowledge transfer.
- iv. To identify knowledge assessment practices at UNZA.
- v. To identify knowledge acquisition practices at UNZA.
- vi. To identify knowledge transfer practices at UNZA.
- vii. Based on objectives i to vi, to design guidelines for knowledge retention at UNZA.

SECTION A

1. KNOWLEDGE RETENTION

There is no doubt that knowledge retention is one of the facets of knowledge management taking centre stage in the knowledge economy brought about by the problem of knowledge loss that cuts across all. Thus, organisations and universities alike have realised that in the absence of knowledge retention and management practices, they stand to lose their organisational memory, that is, the operational knowledge within employees as well as the organisational operating procedures and related documents. It is argued that the loss of organisational knowledge is a menace for operational efficiency and effectiveness in organisations.

- 1.1 What are your workforce demographics and how have they affected your operations?
- 1.2 Have you ever faced staff attrition challenges? If so, what are the main staff attrition challenges faced and how do they affect your operations? (Probe for any of the following if not mentioned: retirements, deaths, resignations, transfers, secondments)
- 1.3 How do you preserve your operational knowledge?

SECTION B

2. KNOWLEDGE ASSESSMENT

There are many ways that are used to ensure that an organisation understands its operations and monitors its knowledge requirements to carry out its operations efficiently and effectively.

- 2.1 In your case, what is the main purpose of your unit and what are your main operations/functions/work processes carried out in the Unit/Department/School?
- 2.2 What are the knowledge and skills required for the above operations/functions/ work processes to be carried out efficiently and effectively? (The knowledge can be either classified under administration and management, technical or teaching and research)
- 2.3 What are the main tools used to assess and determine that your operations are well performed and that your knowledge requirements to perform tasks are met? Probe for availability of workflow charts/ process documentation, workforce planning and knowledge auditing programmes.
- (a) For any of the mentioned knowledge assessment tools, ask questions on how it is practiced and any suggestions for improving the tool. For the tools that are not mentioned, ask questions for willingness to have them introduced. An explanation on each tool can be given.

Follow-up questions for specific mentioned knowledge assessment tools can be asked as follows:

Capability/Process Assessment

- a) What policies, procedures, work manuals and work flow diagrams/ charts aimed at guiding your work operations exist in your Unit/ School/ Library/ Directorate/ Department?

Depending on the response, follow-up question may be raised to ascertain the extent to which the mentioned policies, procedures, work manuals and work flow diagrams/chaps/maps are used

Workforce Planning

- a) In your workforce planning efforts, what are the main attributes that are contained in the workforce profile? Has workforce planning enabled the creation of availability of skills and competencies inventories?
- b) How do you ensure constant monitoring of staffing levels? (Probe for any of the following if not mentioned: retirements, deaths, resignations, transfers, secondments)

Knowledge auditing

Knowledge auditing more or less combines process assessment and workforce planning tools. Specific questions could be asked pertaining to the auditing of tacit and explicit knowledge acquisition. For instance questions could be asked on the following:

- (i) Availability of a knowledge base/repository/inventory
- (ii) Availability of skills and competency profiles
- (iii) Availability of knowledge maps and knowledge flow diagrams

SECTION C

3. KNOWLEDGE ACQUISITION

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

- 3.1 In your Unit/Department/Directorate/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? Once gaps have been determined based on comparison with other available knowledge acquisition techniques, probe for any of the following if not mentioned: recruitment, training and development, Interviews, use of after action reviews, availability of Expert systems and subject matter experts.
- 3.2 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 programme is in place. Is 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 D

4. KNOWLEDGE TRANSFER

- 4.1 Most work performed at UNZA 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?
- 4.2 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 of 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 the 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:

Succession planning

- 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 form outside UNZA has not been used?

(This is an interesting topic that might probe for more information on training and placement it may also bring of out issues of job shadowing)

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 that case are there formalised interaction groupings in place in your Unit/Directorate/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/Directorate/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 theorists. Do you practice job rotation in your Unit/School/Directorate?

Orientation (general and specific).

- a) How are employees in your unit oriented?
Stories

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?

NOTE:

This document is just a guide. Certain questions may not be asked depending on responses from the interviewee.

Appendix IV: Request for Ethical Clearance



THE UNIVERSITY OF ZAMBIA

COUNCIL OFFICE

TO: The Registrar
FROM: Mr. Sitali Wamundila, Acting Assistant Registrar, (Council)
DATE: 7th April 2008
SUBJECT: PERMISSION TO INTERVIEW MEMBERS OF STAFF AND USE DOCUMENTATION TO CONDUCT RESEARCH

The above subject refers.

I am currently studying for my Masters degree with the University of South Africa (Distance Learning) in the field of Information Science and my research specialisation being Knowledge Management. My research topic is **DEVELOPING KNOWLEDGE MANAGEMENT GUIDELINES FOR A KNOWLEDGE MANAGEMENT POLICY TO ENHANCE KNOWLEDGE RETENTION AT THE UNIVERSITY OF ZAMBIA**. Following my advancement in these studies, I seek permission to use relevant documentation and to have access to a list of academic members of staff who will form part of my sample. I also request for your permission to allow me interview some senior members of staff within the university.

Your consideration of this matter will be highly appreciated.

SIGNED
Sitali Wamundila (Mr.)
Acting Assistant Registrar (Council)

Cc: Deputy Registrar (Council)

Appendix V: Approval for Ethical Clearance



THE UNIVERSITY OF ZAMBIA
OFFICE OF THE REGISTRAR
INTERNAL MEMORANDUM

TO: Mr. Sitali Wamundila, Council Office
FROM: Registrar
DATE: 18th April, 2008

SUBJECT: PERMISSION TO INTERVIEW MEMBERS OF STAFF AND USE DOCUMENTATION TO CONDUCT RESEARCH

Your memorandum dated 7th April, 2008 on the matter captioned above refers.

Approval is hereby granted for you to interview some members of staff of the University of Zambia. Approval is also granted for you to access documentation which will assist you with your research entitled "Developing Knowledge Management Guidelines for a Knowledge Management Policy to Enhance Knowledge Retention at the University of Zambia".

By copy of this memorandum, the Deputy Registrar (Administration) and the Deputy Registrar (Council) are informed accordingly.

SIGNED
Dr. A.N. Ng'andu
REGISTRAR

cc: Vice-Chancellor
Deputy Registrar (Council)
Deputy Registrar (Administration)