

The essence of organisational learning as a mechanism to transform drinking water supply. Sharing knowledge with Vitens-Evides International in Lilongwe Malawi.

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List of Abbreviations

CBO	Community Based Organisation
EIB	European Investment Bank
ESAMI	Eastern and Southern Africa Management Institute
EU	European Union
GIS	Geographical Information Systems
GVC	Garden Variety Creativity
GVM	Garden Variety Model
HR	Human Resources
ICT	Information and Computer Technology
LWB	Lilongwe Water Board
LWSP	Lilongwe Water and Sanitation Project
MIS	Management Information Systems
NGO	Non-Governmental Organisation
NRW	Non-Revenue Water
OL	Organisational Learning
OLC	Organisational Learning Capacity
PBL	Problem Based Learning
PR	Public Relations
UN	United Nations
UNFPA	United Nations Population Fund
WHO	World Health Organisation
VEI	Vitens-Evides International

Abstract

The purpose of this research was to examine how organisational learning through knowledge sharing and transformation was occurring at Lilongwe Water Board. This was meant to check whether organisational learning existed, who were learning, what were the learning choices, what were the learning conditions, what changes were experienced in learning and what the outcomes of learning were. The insights gathered would be used in enhancing the organisational learning component of the Lilongwe Water and Sanitation Project which is meant to invest in overall improvement of the operation of Lilongwe Water Board. This research had therefore to identify possible gaps in organisational learning and propose recommendations for improvement.

The research used secondary data which was collected through a desk study to come up with theoretical concepts and design to guide to gathering of primary data. A qualitative single site case study was the next strategy towards accomplishment of the research. Data was then collected from a total respondents of 32 employed at Lilongwe Water Board. The respondents were divided into three categories, the top management, the middle management and the operating core (see appendix B). Interviews were done with 21 respondents using semi-structure questions derived from a topic list. Informal discussions were carried out with 11 respondents. Documents from the organisations and from the project were also used as well as observations. Getting data from the different sources was meant to ensure triangulation and improve validity of my findings.

The general perspective from the management indicated that there was learning occurring at Lilongwe Water Board. The operating core only recognised training as a form of learning in the organisation. Using information from the management, formal, informal and non-formal types of learning were identified and some emphasis on tacit knowledge nurturing. However conflicting responses between the management and the operating core was an indication that the conditions were not conducive for knowledge sharing and transformation. A need was found for the organisation to take advantage of a variety of trajectories to achieve the status of a learning organisation. Another need was found for the organisation to unite all levels and departments, divisions or sections to contribute towards collaborative knowledge creation and transforming the knowledge into tangible organisational outputs.

This thesis concluded that the learning environment is a creation of shared efforts among all organisational members and this seemed to lack in Lilongwe Water Board.

Since the investigations were carried out only at Lilongwe Water Board which is a single organisation and focusing on knowledge sharing and transformation, the results may not be applicable for other organisations without modifications. The research was also reliant only on respondents who participated and documents that were available to the researcher

This study contributes to expansion of understanding of organisational learning. Issues that seem to dominate when proposals for improving organisations are made are mainly technological and financial without considering the orientation of such organisations toward learning. In addition if people are asked about learning in their organisations they quickly point out training as was the case in this research. This research has provided insight into several other learning choices which can be used to improve not only Lilongwe Water Board but any other organisation.

CHAPTER ONE INTRODUCTION

1.1 The Research background

1.1.1 Location of the Research

The theme of my research is organisational learning in Lilongwe water board a public water utility responsible for supply of drinking water to residents of Lilongwe city and its peri urban. Lilongwe is the capital city of Malawi. Malawi is a landlocked country located in the south-eastern part of the African continent. To its north east Malawi shares a boarder with Zambia, while to its north and partially north east there is Tanzania and surrounding it from the east, south and west is Mozambique. Figure 1.1 is a Map of Malawi showing the location of Lilongwe.

Figure 1.1 Map of Malawi



Source: EIB, LWB and BWB, 2008, p.1

1.1.2 The General Background of Water Supply

Increasing demands as a result of rising populations and growing economic activity have led to failure to cope by the world's fresh water resources (Gabbrielli and Holmberg 2008). One of the United Nations millennium development goals requires that access to safe drinking water and basic sanitation be achieved (UN 2006). According to Gabbrielli and Holmberg (2008) about 1.1 billion people in the world do not have access to safe drinking water and resources are increasingly under pressure because of increasing demand. Efforts to step up improvement of water supplies have been intensified especially in developing countries both in rural and urban areas. A lot of studies have been done on institutional actors in the water supply sector with recommendations given, but majority of projects have hardly been sustained beyond withdrawal of their funding. According to Dijk (2005 p. 12) some of the reasons for failure of water and sanitation projects have been;

- little commitment to change since the projects have been set off out of need of the beneficiaries than their conviction
- lack of strictness in project and contract development with no concern for financial viability
- absence of policy support from governments and
- little sense of ownership of project.

According to Mahler and Casamayou (2009) organisational learning particularly in public organisations, has been an idea often promoted but rarely studied in any particular detail. This research attempts to increase knowledge of organisational learning in the Water and Sanitation Project with my findings and recommendations, if utilised, leading to improvements in the Water Utilities involved.

1.1.3 Vitens-Evides International in Malawi

Vitens-Evides International (VEI) gives support to local water companies in developing and transition countries to improve their operations, become financially stable and extend services to new areas including the peri-urban. Currently, in addition to contracts in other countries such as Mozambique and Ghana, VEI has a service contract with local Water Boards in Lilongwe and Blantyre, Malawi to improve efficiency and effectiveness of selected day to day activities of water boards and extension of water supply services to low income areas (VEI 2009). Lilongwe and Blantyre Water Boards are the local drinking water companies supplying water respectively to the cities of Lilongwe and Blantyre in Malawi. The low income areas to benefit from extension of the water supply services include unplanned settlements in the peri-urban of the two cities, which are characterised by high population growth and lack of basic sanitation.

The duration of the contract is 4 years from July 2009 to July 2013 during which through VEI, funds are availed from European Union and European Investment Bank with each Water Board contributing 1.6 % of the total project budget. The objectives of the Project are, (VEI 2009):

- to improve the living conditions by reducing the un-served population with respect to safe water supply and sanitation services;
- to extend safe drinking water supply to 723,000 additional people and basic sanitation to 468,000 people in low-income areas of Blantyre and Lilongwe; and
- to provide 24-hour water supply services for 408,000 people in Blantyre

These objectives are addressed by a combination of, (VEI 2009);

- physical investment in upgrading infrastructure (pipes, pumps, distribution network, etc),
- organisational development and efficiency improvement of the Water Boards
- reduction of non-revenue water (NRW) and
- close cooperation with local organisations (NGOs and CBOs) for improvement of water supply and sanitation services in the low-income areas.

The scope of VEI who is referred to in this project as the private sector service contractor includes, (VEI 2009);

- Financial and commercial operation efficiency programme;
- Technical operation efficiency programme: implementation of maintenance plans, training of staff on the job;
- Implementation of the investment programmes;
- Water supply to low-income areas;
- Assistance to the Water Boards with the implementation of HIV/AIDS programme.

VEI's belief is that during the project there should be eagerness and dedication by staff of the water utilities to support their efforts. Collaboration between the Water boards' staff and VEI staff will be key to the success of the project. VEI have indicated that they will establish links with the Water boards' staff to develop cooperation (VEI 2009), as a result improve the chances that sustainability in water supply is enhanced beyond the life of the project. Sustainability in this project will be with respect to improved management practices, full cost pricing, efficient water use and affordability, which should lead to financial, organisational, social, political, and environmental advantages.

1.2 The Research problem

To enhance the performance of the project both during and after the contract period, a research on organisational learning in Lilongwe water board (LWB) was commissioned by VEI. This project has created a new platform for Lilongwe and Blantyre water boards, VEI and I to learn. "In the new circumstances the key driver to sustainable growth will be the creation and effective utilisation of knowledge and innovation skills, which are supported by continuous and systematic learning." (Csath 2009, p.8). The learning in this case will develop the Water Boards' organisational knowledge capabilities, which will enhance sustainability of drinking water supply, and also enrich the service contractor (VEI) for future projects. VEI has indicated a number of approaches in the project document which should enhance OL in the water utilities. However an understanding of the extent of OL knowledge in the water boards will help VEI in contextualising its approaches in the project. Due to the large sizes of the two organisations which are involved in the project and the limiting scope of my research, I decided to concentrate my study on Lilongwe water board.

The problem for research was that Vitens Evides International did not have insight into the extent of organisational learning in Lilongwe Water Board (LWB). One of the key strategies for Lilongwe Water and Sanitation Project (LWSP) to achieve objectives as indicated in section 1.1.3 was organisational development and efficiency improvement of the Water Board. This could partially be attained through enhanced organisational learning and in this research I selected knowledge sharing and transformation as major

means through which OL could be achieved. For VEI to add value to the project through organisational learning in LWB they had to know the current state of organisational learning so that they are informed of possible shortfalls and they make informed, meaningful contribution towards sustainable water supply in Lilongwe.

1.2.1 Research Objective

To examine how knowledge sharing and transformation were occurring in LWB so that through the LWSP interventions could be made to enhance sustainable clean water supply, was my research objective. Knowledge sharing and transformation are just two dimensions of organisational learning but I felt they were major aspects because for any meaningful learning to occur there should initially be exchange of information, skills, technology or knowledge and the organisation should then be transformed. Transformation is the changing and adjustment that occurs, manifested in changing beliefs, new behaviours, new operation procedures, new routines and new programmes. When an organisation transforms, it becomes more effective, more efficient in producing better products and services. After finding out the extent of knowledge sharing and transformation in LWB, analysis of the findings resulted in conclusions and recommendations for possible improvements.

1.2.2 Research Questions

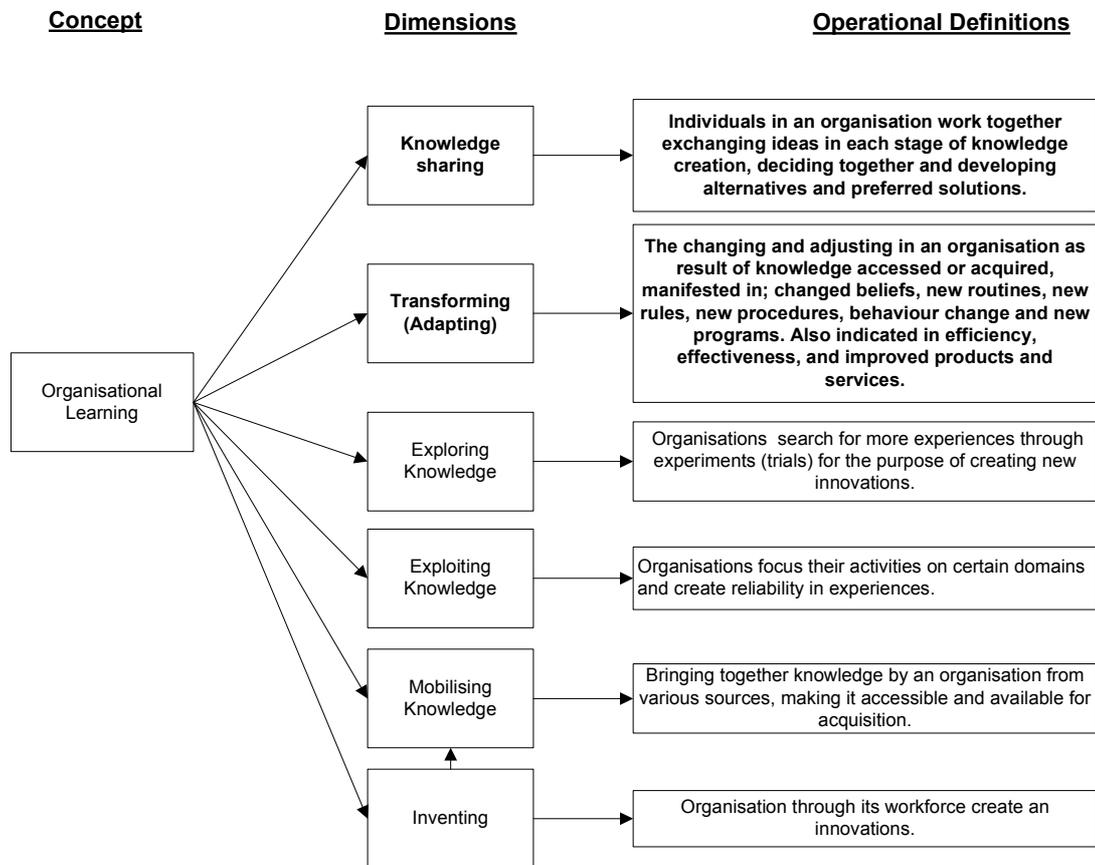
The main research question was to what extent is LWB learning through knowledge sharing and transformation? The degree through which LWB is learning through knowledge sharing and transformation was examined and possible learning gaps were determined. Exploring the current learning in LWB would provide the entry point for LWSP to enhance organisational learning. The sub-questions that contributed towards answering the main question were:

1. What are the characteristics of the Lilongwe Water and Sanitation Project?
2. What is the state of organisational learning in LWB?
3. How is OL being facilitated and sustained at LWB?
4. What opportunities and barriers to OL exist at LWB?
5. In what ways is OL in LWB contributing to sustainable drinking water supply in Lilongwe?
6. How is the LWSP expected to enhance OL in LWB?

1.2.3 Operationalisation of Organisational Learning

Through literature study I developed dimensions of organisational learning which are illustrated in figure 1.2. From these dimensions as I indicated in section 1.2.1, I chose knowledge sharing and transformation to mean organisational learning in the context of my research. In this research therefore any reference made to organisational learning is in the context of knowledge sharing and transformation. In the figure I have highlighted the dimensions I focused on and their operational definitions.

Figure 1.2 Operationalisation of Organisational learning



Source: Author, 2010

1.2.4 The research overview

This thesis report is made up of seven chapters of which chapter one is this introductory part. Chapter two is the literature review explaining the concept of organisational learning, other related concepts important for this research and chapter three is the research methodology showing the series of activities, steps and strategies which I used to accomplish the complete research. Chapter four gives an overview of Lilongwe Water Board and the Lilongwe Water and Sanitation Project. Results are in chapter five which are the representation of the findings of this research in form of a case study report. The discussion which is chapter six gives an analysis of my case study to bring out more understanding on the subject of this study. One of tasks I was given by VEI, was to propose recommendations resulting from this research to contribute to the objectives of LWSP. These recommendations are incorporated in the concluding seventh chapter.

CHAPTER TWO ORGANISATIONAL LEARNING CONCEPTS, THEORIES AND MODELS

2.1 Explicit and tacit knowledge

Knowledge is the means through which we give meaning to the world around us (Leeuwis 2004) It is referred to as, '...the body of mental inferences and conclusions that people build from different elements of information and which allows them to take action in a given context'(Leeuwis 2004, p.95). Leeuwis (2004) spoke of an individual's knowledge as that person's life world and as subject to continuous change. Knowledge among individuals in an organisation exist in form of tacit knowledge or explicit. Explicit knowledge is that which can be explained, reasoned, captured and documented. It can be transmitted by way of information and messages and can be shared verbally, through formal training and communication media such as radio, newspapers, books, telephone and electronically by way of e mails and websites amongst others. The tacit form of knowledge is manifested in individuals' ability to do things perfectly but in a way that may not be explained or documented. Though people may have attained the same levels of formal learning there are always a lot of differences in the way they display their expertise, manage their work within organisations or display their capabilities. This is the manifestation of tacit knowledge because when you ask them they may not be able to explain it. "The importance of tacit knowledge implies that the learning process cannot be restricted to an exchange of documents and other impersonal bearers of information." (Janowicz-Panjaitan and Noorderhaven, 2008, p.1339) There is need for individuals to socially interact in the work environment so that there is exchange of the tacit component of knowledge. The explicit orientation to knowledge is referred to as the systemic theoretic view and the pragmatic view is the orientation towards tacit knowledge. Table 2.1 summarizes these perspectives on organizational knowledge.

Table 2.1 Perspectives on explicit and tacit knowledge in organisations.

	System theoretic (explicit) view	Pragmatic (tacit) view
Source	Documents, databases, systems, prototypes, processes and procedures, manuals etc.	People, Communities
Form	Codifies or Codifiable, explicit	Tacit, implicit, intuitive
Transfer	Exchange of documents, electronic means, formal training	Socialization, apprenticeship, situated learning
Organization	Relatively mechanistic	Organic

Source: Ling, Sadhu and Jain 2009, p.127

2.2 Organisational learning

When knowledge is shared it becomes mutually owned and useful to those who share it. Different individuals select, invent and mobilize those arguments and bodies of knowledge that help them further a particular cause (Leeuwis 2004), by so doing they create perspectives. Sharing these perspectives result in learning. Organisational learning is defined by Holmqvist (2003) as the change in organisational behaviour resulting from shifting of social production of organisational rules basing on experience. Learning in organisations is manifested in new activities elaborated from current routines. When there is sharing of such experiences among individuals in an organisation, organisational learning exists. Under such circumstances the organisations

explore experiences and exploit these experiences. When experiences are exploited it means there may be new reliance on new routines, production techniques, operation procedures and social workplace relations. Exploring is searching for more experiences through experimenting and creating innovations. Holmqvist (2003) indicated that continuous exploiting without exploring, which means following the same learning processes may result in simple mindedness making an organisation unable to discover new opportunities.

What may be effective activities in the short term may turn out to be highly ineffective in the long run. In order to counteract the potential drawbacks of exploitation, organisations need to create variety in their experiences as well, by experimenting, innovating and taking risks (Holmqvist 2003, p.99).

Through reference from numerous scholars in literature I view organisational learning as a continuous practice of knowledge generation by individuals, knowledge sharing amongst these individuals, co-interpretation of the new knowledge, and integration of the knowledge into organisational knowledge and then applying the co-created knowledge in organisational policies, operation procedures and practices.

2.2.1 Situated and transformative learning

Transformative learning was defined by Mezirow (1997 cited in Mathis 2010) as a process leading to change in frame of reference. Assumptions that we make and use in the understanding of our experiences are our frame of reference. In transformative learning these assumptions are altered resulting in new thinking and a different set of attitudes. According to Mathis (2010), through transformational learning organisations can be venues for challenging existing assumptions about everything creating high level performance at the workplace and developing individual personnel. In transformative learning individuals are independent in their thinking and reasoning; however there is interdependence in sharing data, information and knowledge or experiences among co-workers and across levels.

The expression 'situated learning' was made up by Lave and Wenger (1991 cited in Karalis 2010) to depict how learning can happen in what are referred to as 'communities of practice'. Karalis (2010) defined a community of practice as a group of people who share a common interest within a domain of human endeavour. The group learns together, has a shared long term store of resources in the form of experiences, tools or ways of dealing with issues and is bonded together by its members' shared interests. When one is initiated into such a community he/she undergoes a gradual learning process to integrate into that environment thus a process of situated learning. Organisations are examples of communities of practice and the learning that occurs in employees to acquire knowledge, skills and attitudes on the workplace through sharing with colleagues, subordinates and superiors is situated learning. Therefore transformative learning should occur simultaneously during the process of situated learning.

2.3 Learning Organisations

According to Van den Ban (1997 cited in Leeuwis 2004), to be able to deal with current challenges which continuously emerge, organisations should have creativity, be adaptive and be able to foresee diversity and continuous change. The conditions in the

organisation should be supportive of individuals within the organisation who can share their insights freely with the aim of solving organisational challenges. The recognition given to employees as sources of organisational knowledge should be regardless of their levels in the organisation. Such organisations where individuals are responsible for their actions, share their experiences and take an active part in finding solutions for organisational problems was referred to by Senge (1993 cited in Leeuwis 2004) as learning organisations.

Leeuwis (2004, p.307) indicated the following as requirements for such organisations:

- recognition that learning emanates from every experience and from all levels and parts of an organisation
- that failures and problems, if made explicit are opportunities for learning and development
- that lessons, information and knowledge should be shared with others in the organisation.
- that opportunities for lifelong learning are offered through staff development policies.

Such requirements for learning organisations are met if conditions conducive for organisational learning exist.

2.3.1 Learning culture

The attitude towards learning of the individuals in an organisation who are supposed to learn will influence the extent to which the organisation learns. This is influenced by learning culture within the organisation and any techniques that may be used to communicate learning have to take cognisance of that, otherwise no learning will occur like Webster and Pearce have pointed out:

“...even the best product in the hands of a poor communicator or even in the hands of a good communicator using inappropriate communication methodologies is destined for disaster. The solution I believe is to understand the recipient’s learning culture and tailor both the product, but more importantly the communication methodology to the recipient.” (Webster and Pearce, 2008, p.97)

Learning culture within organisations is vital so as to increase flow of available knowledge for individuals within organisations to adopt and adapt and make their contribution to the flow of know-how. My definition modified from Garvin (1993) refers to an organisation’s learning culture as the values, norms, habits or practices in an organisation that determines its orientation towards creating, acquiring and transferring knowledge and modifying of behaviours to reflect new knowledge and insights. In an organisation with a learning culture individuals are flexible in their attitudes, there is communal ownership of mitigation strategies, capacities are improved and links among individuals are strong.

2.4 Creating conducive conditions for organisational learning

Clanwaert and Van Bree (2008 cited in Kyndt et al 2009) defined learning conditions as situation created in the social, material or informational environment and work environment itself by prominent figures, agents of labour organisations and by

employees themselves so that others can learn. Table 2.2 provides an overview of conditions researchers found to enhance work place learning. According to Kyndt, Dochy and Nijs (2009) supporting the condition of feedback and knowledge acquisition contributes the most in improving workplace learning.

“This means that creating occasions for feedback, such as working in teams, debriefings or peer feedback are essential for employees, so do possibilities to acquire knowledge (knowledge of results, of inquiries, of important decisions, of assignments, of new skills etc)” (Kyndt et al 2009, p.381)

In support of these conducive conditions Lee and Cassel (2009) indicate that lifelong learning if facilitated will permit development of a very flexible organisation that has ability to respond to competitive challenges of global markets. Specific arrangements in an organisation which can enhance use of knowledge (learning) are decentralisation, integration, shared responsibility, greater accessibility, adequate specialisation and use of information technology to restrict barriers to learning.

While table 2.2 provides an array of learning conditions, they were important in comparing with what exist in LWB. I however selected some conditions that I directly checked which I elaborated from paragraph 2.4.1 to 2.4.7. Others factors in the table were identified by other authors as learning routes (or trajectories), so I discussed them in section 2.5 and checked for them in LWB.

Table 2.2 Learning conditions.

Context factors	Learning factors
<i>Communication and interaction</i>	Formal education
Internal	Training
External customer contacts	Feedback
Meeting	Evaluation
Collegial consultation	Reflection on results
Social work environment	Support for learning
Interaction	Learning potential task
Participation	Challenge and value of work
Cooperation	Hospitalization learning tools
	Confidence
Vast professional contacts	Obligation
Job rotation	Research/documentation
Possibility for change	Access to knowledge and information
Daily work	Supervision/mentoring
Experience	Coaching
Responsibility of governing board	Performance and progress
Question based policy	
Formalization work processes	
Rewarding skills	
Expectations	

Source: Kyndt, Dochy, and Nijs, 2009, p. 369

2.4.1 Facilitative Management and leadership

“An important task for managers of learning organisations is the facilitation of internal learning, negotiation and change processes” (Leeuwis, 2004, p.311). Senge cited in Leeuwis gave emphasis to being ‘designers’ as a requirement for leadership of learning organisations. By saying ‘designers’ he meant according to Leeuwis (2004) having the ability to create shared goals, values and meanings, promote joint learning and accordingly develop suitable organisational policies, strategies and structures. Related to this Mayfield (2009) suggested that organisations through their leadership should promote what he called garden variety creativity.

The Garden variety creativity

The garden variety creativity according to Mayfield (2009) occurs when workers develop new and better ways of performing their tasks helping the company to perform better. Mayfield (2009) refers to such creativity as an excellent tool for fostering OL and that it exist when all workers at all levels, frequently on a routine basis find better ways of performing daily tasks that make up their jobs. This creativity causes incremental innovations leading to better organisational performance resulting in customer satisfaction. Garden variety creativity can be compared with high level creativity a more specialised and strategic form of creativity. Table 2.3 shows how garden variety creativity compares with high level creativity.

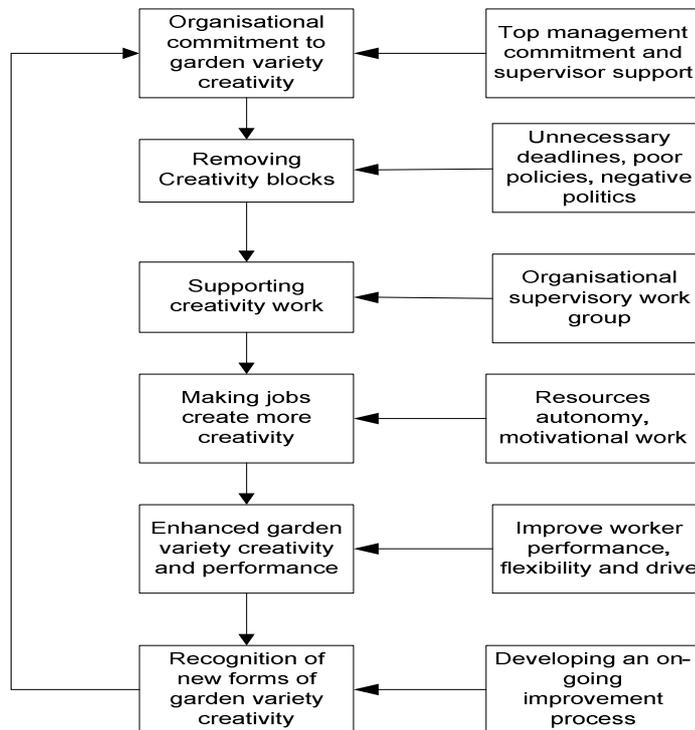
Table 2.3 Comparison of garden variety and high level creativity.

Characteristics	Garden variety creativity	High level creativity
Performed by	All workers	Specialised highly trained professional workers
Directed toward	Knowledge management and outputs related to the innovator's own work	Organisational output and characteristics outside the innovator's own work
Motivated by	Extrinsic and intrinsic motivations	Intrinsic motivation
Frequency	Frequent often on a daily basis	Rare, once or twice a year
Generated organisational improvements	Continuous and incremental focused on operational outcomes and processes	Discontinuous and often resulting in revolutionary organizational changes, mostly focused on organisation-wide changes
Relationship to organisational learning	General organisational learning at an operational level	Normally focused on OL at a strategic level.

Source: Mayfield, 2009, p. 11

The process that can help cultivate creativity among all organisation workers can be explained by garden variety model (GVM) (Figure 2.1) which depicts a continuous learning cycle embedded within an organisational culture (Mayfield 2009). According to Sloman (2005 cited in Mayfield 2009), the organisational culture sets available resources for worker creativity and provides opportunities or barriers to workers' extrinsic and intrinsic motivation to be more creative.

Figure 2.1 The process of cultivating worker creativity (GVM).



Source: Modified from Mayfield, 2009, p. 12

2.4.2 Reward System

Giving incentives to reward practices such as sharing knowledge, suggesting solutions, originating innovations, taking responsibility and many others, has been suggested by many authors in literature as encouraging to organisational learning. Leeuwis (2004) argued that if employees are only evaluated and rewarded for tangible 'outputs' like number of clients served, number of leaks fixed etc. they may not be motivated to take wider responsibilities. Rewards can come in various forms which include, according to Leeuwis (2004), simple expression of appreciation, awards, positive attention in company magazine, measuring organisational contributions among others.

2.4.3 Teamwork

Giving responsibility for organisational performance to teams instead of individual is frequently an advocated strategy to stimulate organisational learning. (Gavin 1993; Senge 1993 cited in Leeuwis 2004) The purpose is to bring together an assortment of skill, competencies and attitudes and therefore a platform knowledge and expertise sharing were through collaboration solution to problems and innovations are produced. When working in teams individual team members stimulate one another and compensate for counterparts' weaknesses.

2.4.4 Outsider involvement

Involving outsiders in communicating problems and ideas between superiors and subordinates can enhance organisational learning, however at a cost because frequently such outsiders are either consultants or contracting partners. Argyris (1994 cited in Leeuwis 2004) emphasised that if something fundamentally wrong exists in an organisation (e.g. in the management style, internal communication or organisational culture), when insights and lesson cannot be locally brought to the open, then an outsider might be required to make deeper analysis and boost organisational learning.

2.4.5 Communication Infrastructure

For organisational learning to be effective there should be communication of experiences with others who may need knowledge and expertise. Documentation, storage and transfer of experiences, questions, answers and lessons require media, thus infrastructure to support the communication processes. Leeuwis (2004) agrees that there should be resources, and people in an organisation who have the responsibility for internal and external communication and for 'research' activities needed to support learning.

2.4.6 Capacity to research

Collecting information, soliciting for ideas, views or concerns, analysing perceptions, speech or inputs are activities expected to be carried out by learning organisations and are also tasks carried out in research (Leeuwis 2004). Research capacity within a learning organisation is therefore necessary for the required exploration, experimentation and innovation.

2.4.7 Training and organisational development

Some organisations have been approaching training of their staff on an individual basis. A single employee in an organisation would go for training and after qualifying the organisation would hope that he or she would bring new insights and skills into the organisation and apply them. It is difficult to bring wider organisational changes through training of a single employee, because established routines are rooted within the organisational culture which needs a much broader approach. An alternative approach according to Leeuwis (2004), which combines training with organisational development, would be to bring all staff together to learn about particular issues. "Here training can become more than providing insights, exchanging ideas and offering experiential learning experiences, but may also extend into forging agreement on how to change organisational routines and conditions" (Leeuwis, 2004, p.313). Organisational behaviour was defined by Cummings and Worley (2004) as a process where behavioral knowledge and practices are used to assist organisations to achieve effectiveness.

2.5 Routes to organisational learning

Learning can be formal, informal or non-formal. Formal learning is the 'traditional' classroom learning where there is more emphasis on theoretical concepts than practice and it takes place in what Schrugurensky (2000 cited in Kyndt et al 2009) referred to as 'school system.' It has an organised curriculum and distinct levels and upon attaining

levels certificates of competence are awarded. Learning (training) experts design goals for this type of learning. Informal learning was described by Hager (1998 cited in Kyndt et al 2009) as an unplanned and implicit process whose results are unpredictable. This type of learning is not intentional and is spontaneous in nature. Learners have control over this type of learning. Non-formal learning is a way of learning where not only content is important, but there is strong emphasis on practical experience (Fordham 1993 cited in Kyndt et al, 2009). The management or departmental heads set objectives in this type of learning. Informal and non-formal learning occur at the workplace and organisations are encouraged to facilitate these routes to learning in their cultures, operating procedures and policies. Erant (1994 cited in Kyndt et al 2009) stated that workplace learning (which is either informal and non-formal) is more efficient than formal learning when it comes to learning job related skills and acquiring knowledge because in formal learning the learner usually lack the required insight to put theory into practice.

At the workplace Kilkelly (2009) suggested four routes to learning, which are learning by your own mistakes, learning from a coach or mentor, studying a training course or a combination of multiple approaches which he called blended learning. Learning by mistakes was common in organisations and is where employees are employed without prior experience and through trial and error they are skilled on the job.

“If we think about the most important learning experiences we have ever had in our lives, most of them will probably have occurred through errors we have made. We usually make a point of never repeating those mistakes and as a consequence, our behaviour has changed and we have ‘learned’.” (Jennings and Wagnier 2010, p.14)

Learning from a mentor is regarded by Kilkelly (2009) as excellent for experience in form of transfer of tacit knowledge to a trainee however consistency and repeatability are not ensured. In studying a training course large numbers of learners can be handled but it is costly. Kilkelly (2009) described blended learning as a combination of approaches in some cases combining what he called ‘traditional’ approaches with e-learning. Inkpen (2008) contended that learning whenever it happens should be collaborative in nature. He further indicated that knowledge can be transferred through movement within an organisation, specific tools and technologies, routines and networks that combine people, tools and routines.

In researches carried out by other scholars none of the respondents indicated that they had benefited from learning through work experiences but focused more on learning being gained from formal classroom based and through training courses. Many learners seemed unaware that they needed to take responsibility for their own learning not managers having sole responsibility (Bonsall 2010). Ling, Sadhu and Jain (2009), who indicated the importance of knowledge sharing as key to organisational learning, suggested six strategies in addition to training, as routes to organisational learning.

- *Communities of practice*: These are according to UNFPA (2003 cited in Ling et al 2009) groups of people who do some sort of work together, helping each other through sharing tips, ideas and best practices.
- *Performance appraisals*: People have the tendency to seek ways of performing better if their work is measured and by so doing learning is triggered in an effort by employees to perform their work better to get higher score.
- *Rewards for sharing knowledge*: Cornelia and Kugel (2004 cited in Ling et al 2009), argued that although rewards have an immediate positive impact towards

sharing of knowledge they are on the other hand likely to spoil individuals leading disappearance of the inclination to sharing knowledge when the incentives are withdrawn.

- *Story telling*: Faul and Kemly (2004 cited in Ling et al 2009) found this to be an effective learning trajectory especially in cases where an individual attends a training workshop or an event and is given an opportunity to share with others in the organisation, information or knowledge acquired.
- *Knowledge networks*: These are more formal and structured focal groups of collaborating individuals who are knowledge domain biased part of whose standardized job is to critically analyse the organization (UNFPA 2003 cited in Ling et al 2009).
- *Retrospect*: According to Faul and Kemly (2004 cited in Ling et al 2009) this is an in-depth review through discussion, which is done on completion of an activity, event or project to capture lesson learnt from such a task. Through retrospect, feedback is shared, weak links detected and action taken to correct any errors detected by the team, thus learning has occurred. The sharing of feedback and joint decision making enhances team building and collaboration among the participants.

Majority proponents of organisational learning I have come across in literature recognise the importance of learning being work centred, contextualised (or situated), with emphasis on socialisation so as to attain attitudes and behaviours conducive for collaborative knowledge creation. Bond and Middleton cited in Johnson and Senge (2010) however noted that though a lot of learning could be happening in organisations through practice it is regarded as part of the job thereby rendering it invisible.

2.5.1 Problem based learning

This is another form of learning coined by Yeo (2009) who defined it as a facilitation process where participants reflect on a problem identifying vital issues, determining learning objectives and sharing views with others. Problem based learning (PBL) is contextual, experiential and therefore good for organisations. Yeo (2009) contended that organisations have capacities to learn specific things compared to their overall capacities to learn, an aspect he argued was absent in OL literature. In this case Yeo portrayed that while other learning routes are centred on the learner PBL is in addition, highly application oriented and gives focus on power structures between members. PBL is collaborative in nature because employees should first share the issue at hand and recognise that in their context it is pressing. According to Yeo (2009), individuals reflect and investigate to illuminate problem solutions, through tutoring, knowledge sharing, feedback and inquiry. People at all levels are involved to contribute to task specific knowledge and expertise required to facilitate PBL. Table 2.4 indicates the practical applications of PBL in workplaces.

Table 2.4 Practical applications of PBL in workplaces.

Key stages in PBL	Skills required for workplace learning	Critical factors influencing problem based workplace learning	Implications for workplace practice
Problem identification	Conceptualisation Questioning	Consolidating past experiences. Recognising and accepting mistakes and failures as potential for growth. Rewarding efforts in error correction and reduction	More flexible yet challenging personal and corporate learning plans. A more progressive reward recognition system More dialogue, feedback and focus group sessions to feel the pulse of the ground
Problem solving in small chunks	Teamwork Shared responsibility Empowerment leading to trust	Increasing decision making capacity Refining systems, structures and work processes Re-evaluating training structure	Better technological infrastructure in support of systems Flatter reporting structure Tighter linkage between learning needs and expected competencies Better deployment of human and other resources
Facilitator-led learning orientation	Facilitation Communication	Leaders as coaches and mentors Consultative approach Alignment of goals	Leaders focused on action and process management Better communication of shared vision, mission and goals
Peer teaching and learning	Communication Group dynamics Empowerment leading to responsibility	Formalising learning units Creating learning spaces Expanding knowledge sharing base	Stronger repository of data for shared learning Alternative avenues for learning e.g. e-learning Better communities of practice for knowledge co-construction
Personal and team reflection	Questioning Reflective inquiry	Enforcing a sense of accountability Formulating new strategies based on emerging issues Recognising personal voices and rewarding bold suggestion	An improved staff suggestion scheme to capture personal voices More dialogue and feedback sessions Tighter linkage between personal reflections and opportunities for professional development.

Source: Yeo 2009, p. 8

2.6 Organisational learning models

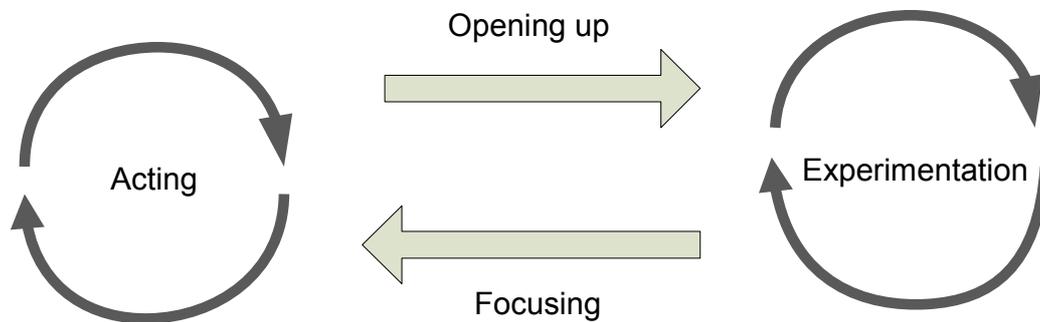
2.6.1 The Dynamic Model of organisational learning

Holmqvist (2003) proposed four transformations occurring during learning within organisations (figure 2.2). These transformations are:

- acting; the organisations are in the process of utilising existing knowledge
- opening up; organisations are getting new knowledge in addition to existing knowledge
- experimentation; when the organisations are in an ongoing process of testing the variety of knowledge they accommodated
- focusing; organisations concentrate on knowledge appropriate to them after experiment.

The cycle continues with acting, where the organisation utilised the new knowledge.

Figure 2.2 Dynamics organisational learning.



(Source: Holmqvist 2003, p.108)

During acting the organisation is continuously utilising existing knowledge and expertise through established routines, procedures and programmes. Learning causes unexpected discrete changes challenging existing rules and behaviors creating conflicting and competing ideas resulting in opening up, a move towards testing new knowledge. Opening up results in searching for and testing of new experiences a continuous explorative transformation Holmqvist (2003) called experimentation. Experimentation produces innovations which can be adapted by the organisation; a process called focusing, a move toward utilisation of new knowledge. The result is the acting process manifested in changed beliefs, new routines, new rules, new procedures and behaviour change. The new practices in the acting process are indicated by efficiency, effectiveness, improved products and services.

2.6.2 The General model of collaborative knowledge creation

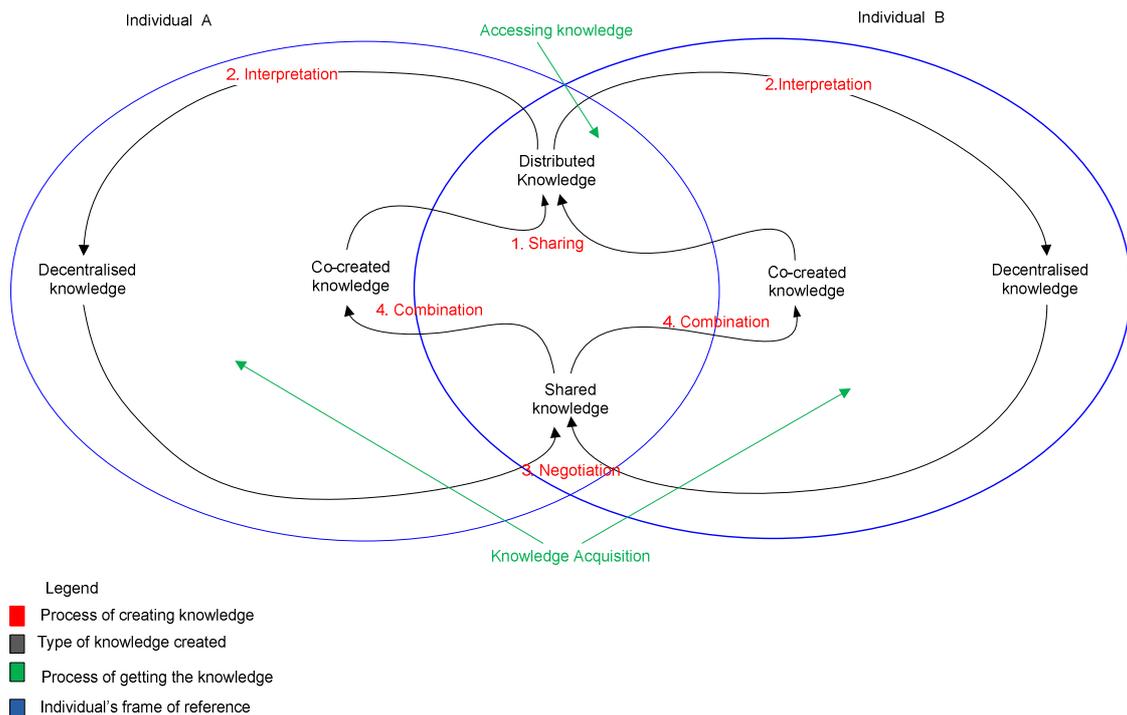
According to Chatenier, Verstegen, Biemans, Mulder and Omta (2009) collaborative knowledge creation is an open teamwork type of learning which is intentional and is directed towards delivering a product. The product can be knowledge, service or technology. Four processes take place during collaborative knowledge creation which has been explained through a model by Chatenier et al (2009) which I have modified (figure 2.3). The model shows that the processes of, externalization and sharing, interpreting and analyzing, negotiating and revising as well as combining and creating occur during collaborative knowledge creation.

- *Externalisation and sharing:* Professionals verbally share their tacit knowledge, information and needs with others in groups or teams resulting in distributed knowledge (Chatenier et al 2009). This in my view results in individuals within an organisation getting access to knowledge and expertise which is at the disposal of the participants of the group. After accessing the knowledge there is need to interpret and analyse it.
- *Interpreting and analysis:* "Professionals absorb what they hear and interpret, and they analyse it by associating with their own knowledge" (Chatenier et al 2009). This results in interpretation the information and putting it into the individual recipient's context. The interpretation is individual specific, meaning different individuals receiving the same information; perceive it differently which can also be a source of conflict among group members. This difference in

interpretation of information or knowledge from the same source by different individuals was referred to by Chatenier et al (2009) as decentralised knowledge.

- *Negotiation and revising*: This happens when collaborating participants gather to discuss differences in interpretation (negotiation). This negotiation results in participants revisiting their frames of references comparing it with other perspectives in some cases resulting in revision of ways of thinking or confirmation of interpretations. According to Mercer (2000), they engage critically but in a constructive way with each other's ideas. The expected results are shared knowledge, a communication language (Davenport and Prusak 1998 cited in Chatenier et al 2009), shared meanings (Dougherty 1992 cited in Chatenier et al 2009) and common ground (Beers, Boshuizen, Kirschner and Gijsselaers 2005) concerning goals, ideas and roles.
- *Combining and creating*: This is a process where novel ideas are recognized and organised into acceptable organisational innovations. "This process, taking place at individual levels, results in co-created knowledge that depending on the innovation, can bring about new ideas for innovation, the innovation goal, an action plan, new technologies, or ideas about how things can improve"(Chatenier et al 2009).

Figure 2.3 A conceptual model of collaborative knowledge creation



Source: Modified from Chatenier, Versteegen, Biemans, Mulder and Omta 2009, p. 356

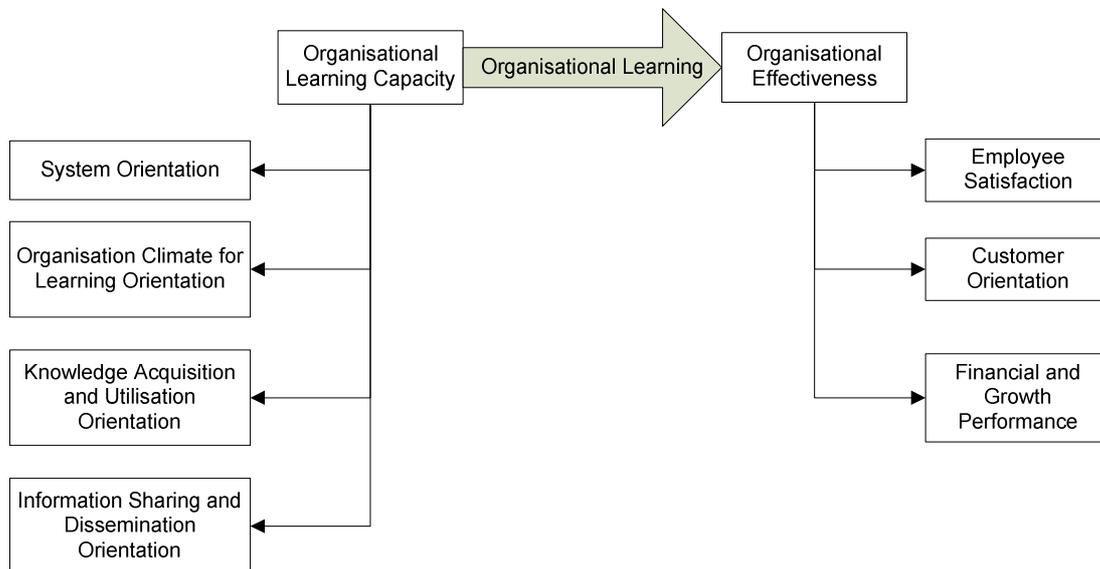
When the processes indicated above occur, the knowledge that is shared, co-created, distributed within the organisation and decentralised among departments has to be utilised to transform the operations of the organisation. The organisation even with the new insights might, through its management choose not to use knowledge to transform itself. Even if the management chooses to use the new knowledge, there might be resistance from some staff. This is an example of a barriers that might exist in an

organisation which has to be dealt with for an organisation to learn. To effectively learn, there should be collaborative effort among all organisational human resources towards the same goal of knowledge creation and transforming the organisation. In the research I investigate whether in LWB, any barriers to creation and utilisation existed and any efforts to remove them.

2.6.3 Organisational learning capacity and effectiveness

From a research carried out by Aydin and Ceylan (2009) organisational effectiveness was measured through getting perspectives of employee satisfaction, customer orientation and financial growth performance. Organisational learning potentially transforms employees' behavior towards strengthening the organisation in achieving improved results, ensuring adaptability to change, growing through innovation and creating employees who are result oriented. This means organisational learning leads to organisational effectiveness. Aydin and Ceylan (2009) defined organisational learning capacity as the organisation's ability to develop capabilities to acquire new information and convert that information into knowledge used to increase the effectiveness. According to Tio et al (2006 cited in Aydin and Ceylan) organisational learning capacity has four components, which are systems orientation, organisation climate for learning orientation, knowledge acquisition and utilisation orientation and information sharing and dissemination orientation. Figure 2.4 is a model of organisational learning capacity designed by Aydin and Ceylan (2009) which I have modified into what I perceive as the Learning organisation Model.

Figure 2.4 The Learning Organisation Model.



Source: Modified from Aydin, B. and Ceylan, A., 2009, p. 22

From the literature studied about learning organisation I have concluded that learning organisations are characterised by their capacity to learn, their affinity for continuous learning and their effectiveness. The organisational effectiveness is indicated by employee satisfaction, customer orientation and financial and growth performance. According to Aydin and Ceylan (2009) such organisations' key activities make them, see the big picture in organisational learning processes, create a climate that facilitate organisational learning, increase expertise of employees through knowledge acquisition and utilising the knowledge in their work and share information, converting it into knowledge then disseminating the knowledge throughout the organisation. Information sharing and dissemination orientation and organisation climate for learning orientation in Lilongwe water board leading to employee satisfaction, customer orientation and financial and growth performance, were important in this research.

2.6 Is the organisation learning, or at least, is it aware?

Learning categories have been identified according to whether learning is occurring in an organisation or not and whether that organisation is aware of the presence or absence of learning. According to Pokharel and Halt (2010) these learning categories are conscious learning, façade learning, unaware learning, and absent learning.

Conscious learning according to Pokharel and Halt (2010) is about getting insight, noticing and understanding with the intension to learn. The organisation through its employees is knows that OL is occurring and the environment conducive to OL is promoted. Façade learning is the term used to reflect the gap between the reported learning and the actual learning existing in the organisation (Pokharel and Halt 2010) Mcguire (2000) refers to it as the gap what is planned in documents and what actually takes place. This therefore means that some organisations can have documents that portray learning within themselves yet the learning environment doesn't exist at all. The following Persian adage extracted from Pokharel and Halt (2010) which gives meaning to unaware learning:

“Who knows and knows that he knows is ‘wise’ – follow him
Who knows but does not know that he knows is ‘asleep’ – wake him
Who knows not and but knows that he knows not is ‘simple’ – teach him
Who knows not and knows not that he knows not is a ‘fool’ – shun him.”
(Pokharel and Halt 2010, p.260)

In most organisations learning could be taking place on a daily basis but organisations may not realise that any learning is taking place, thus unaware learning. In such cases the staffers may only recognise formal learning as true learning and referring above such organisations are ‘asleep’, waking them would assist them to realise the learning occurring in them and utilise it.

2.7 Conclusion

From this study I came up with a number of views concerning organisational learning which were useful in the conduct of my research. Organisational learning concerns organisational knowledge which in my view means all workers' knowledge regardless of the level in the organisational structure. If the knowledge resources are shared along and across the organisational structure levels they become organisational knowledge. Sharing of knowledge can be verbal. Verbal knowledge sharing can be face to face through dialogue or collaboration in meetings, training workshops or even informal discussions. Verbal knowledge sharing can be through audio media such as telephone, radio, television and through the electronic media. Visual knowledge sharing is accomplished through photographs, sculpture, motion pictures and drawings such as cartoons. The most recognised and common knowledge sharing means is through exchange of text such as memorandums, letters, reports, books and publications as well as electronic mails and websites.

Tacit knowledge sharing is an aspect that needs a lot of attention in many organisations. This involves sharing of tacit skills among staffers in an organisation. Through social interaction and situated learning thus communities of practice, tacit knowledge is shared in an addition to explicit knowledge. Many organisations do not find sharing of explicit knowledge difficult because it is can easily be recognised, explained and packaged. In my view learning organisations are communities of practice were learning occurs through sharing of both implicit (tacit) and explicit knowledge among working peers, subordinates and superiors.

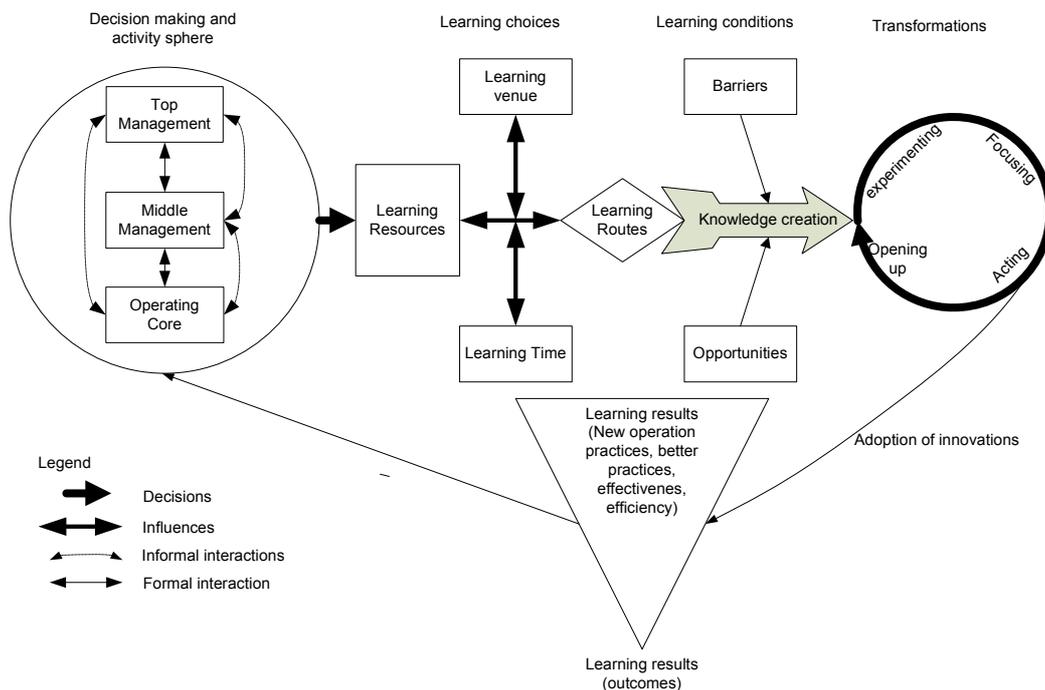
Learning in organisations lead to transformation resulting in more effective standard operating procedures, routines and changed attitudes among workers. Learning in organisations should be an initiative of organisations themselves and should be embedded in the organisational culture. Organisations should be aware of conditions that can stimulate or stifle knowledge sharing. Although all employees are supposed to participate in organisational learning processes, the management should take a leading role in inducing environment conducive for exchange experiences. The state of communication infrastructure in an organisation can create favorable environment or create a barrier for OL so organisations should be aware of this. The approaches taken by organisation en-route to learning depend on the context and learning can be formal, informal or non-formal. It is paramount for organisations to be aware of the existence or absence of learning so as to take improvement measures or utilise any potential that might be present.

CHAPTER THREE THE RESEARCH METHODOLOGY

3.1 The desk study

I did a desk study first to gather literature on organisational learning to get insights and perspectives on the subject of my research. The information was compiled into a literature review from which I generated criteria for my research. In order to come up with criteria to determine OL I came up with dimensions for OL and their operational definitions. I then made a choice on the dimensions to use in answering the research question and sub-questions subsequently designing the topic list and semi-structured questions. The generation of the topic list, the semi structured questions and the choice of who to ask was guided by a conceptual model that I designed. This model (figure 3.1) gave me an overview picture of what I should expect in an organisation that is learning. I divided the model into 5 components which are, the decision making and activity sphere, the learning choices component, the learning conditions, the learning transformations and the learning results components. These five components of my model made up the main topics in my topic list. Where to get information was guided by what is in the decision and activity sphere which in my topic list I referred to as learning entities. I divided this component into three levels as many organisational structures would portray; top management, middle management, and then operating core.

Figure 3.1 A model for Organisational learning (knowledge sharing and transformation).



Source: Author, 2010

3.1.1 The topic list

With the help of the model in figure 3.1, I generated five themes for my topic list as I have indicated in section 3.1. Each theme was investigated in LWB so as to answer the research questions. The themes were, learning entities, learning choices, learning conditions, transformations and learning outcomes. The table 3.1 shows the topic list, and authors in the literature review who discussed the theme. The detailed topic list is in annex A.

Table 3.1 The topic list themes used in collecting data

Theme investigated (topic)	Reference in literature review
Learning entities	Leeuwis (2004), Holmqvist (2003), Mayfield (2009) Lui (2009), Mathis (2010), Tsang (1999 cited in Lui 2009), Bonsal (2010), Pokarel and Halt (2010), Mcguire (2000)
Learning choices	Janowicz-Panjaitan and Noorderhaven (2008), Ling, Sadhu and Jain (2009), Hager (1998 cited in Kyndt et al 2009), Fordham (1998 cited in Kyndt et al 2009), Erant (1998 cited in Kyndt et al 2009), Lave and Wenger (1991 cited in Karalis 2010), Karalis (2010), Lee and Cassel (2009), Kilkelly (2009),
Learning conditions	Leeuwis (2004), Lee and Cassel (2009), Webster and Pierce (2008), Garvin (1993), Mayfield (2009), Clanwaert and Van Bree (2008 cited in Kyndt et al 2009)
Transformations	Mezirow (1997 cited in Mathis (2010), Beers et al (2005), Holmqvist (2003), Chatenier et al (2009), Mercer (2000), Davenport and Prusak (1998 cited in Chatenier et al 2009).
Learning outcomes	Aydin and Ceylan (2009), Teo et al (2006 cited in Aydin and Ceylan 2009), Kyndt et al (2009)

3.2 Research area

The research was carried out in the city of Lilongwe at Lilongwe Water Board. The organisation is divided into three administrative zones, the northern, central and Southern zone. Respondents from the top management were all located at the organisation's head office. Out of ten interviewed middle managers three came from the LWB's administrative zones. Interviewees in the operating core were made up of three from the zones and two from the head office. All the eleven respondents who were socially interacted with were working at head office.

3.3 The case study

The data collection occurred over a period of four weeks. Since this was a qualitative research and my research unit was the Lilongwe Water Board, I did a case study with the LWB key respondents as research units. The choice of this strategy (case study) was guided by the fact that the research was focused on a specific research area, limited in space that is the Lilongwe Water Board only. I therefore was more interested in a strategy that would give me in-depth insights to partially fulfill the objectives of the LWSP, thus leading to the choice of case study.

3.2.1 Data collection

I used face-to-face interviews as the principal means of gathering information, using 25 semi-structured questions guided by a topic list. As a result the questions I asked were not repeated word for word but I put an effort not to divert from the research criteria. To triangulate my data, I also used organisation documents, less formal interactions with the employees and mere observations. Relevant texts from the organisation which were utilised included the organisational chart, job descriptions, monthly and annual reports and LWSP project reports. Eleven more respondents were interacted with, using informal discussions.

The key respondents totaling 21 interviewed are listed in table 3.2. Each interview lasted between one hour and one hour thirty minutes and I took notes during the interviews. I conducted the interviews in English. My stay with the organisation for four weeks gave me a unique advantage mixing with employees of different levels. During this period I also came to work just like all other employees enhancing civil interaction. The key respondents came from the top and middle management of LWB, a few from the operating core of LWB, the project manager of the LWSP from VEI and one VEI expert who was present. The reasons for mainly choosing top and middle management were to avoid communication barrier that could possibly emerge between myself and the interviewees because of interviewees being shy, and because the management levels were more conversant with the LWSP and also if any initiatives on OL existed they were more perceived by the management than the operating core. However I took care of the operating core's perspectives through informal interactions. These workers in the lower levels took time to be used to me so as to give information. The workers became more used to me after staying in the organisation for two weeks. Civil interactions in my view offered an environment for employees involved to freely present their views. I used my discretion to select data from informal discussions and incorporated it in my research results. The accuracy of the data as given by the key respondents was improved by sending copies of compiled interview scripts to interviewees for verification.

Table 3.2 Interviewees categorised according to departments

Category of respondents	Number of respondents/informants	Method of collecting data
Division of planning and development	3	Face to face interviews, observations and documents
Division of water production services	2	Face to face interviews, observations and documents
Zones	6	Face to face interviews, observations and documents
Department of finance	3	Face to face interviews, observations and documents
Human resources department	3	Face to face interviews, observations, documents and informal discussions
Data process (ICT) Division	2	Face to face interviews, observations and informal discussions
Vitens-Evides International	2	Face to face interviews, informal discussion and documents.
Other	11	Informal discussions.

Source: Author, 2010

Table 3.3 Interviewees to their levels in the organisation.

Category of respondents	Number of respondents		Method of collecting data
	Males	Females	
Top management	3	1	Face to face interviews, observations and documents
Middle management	7	3	Face to face interviews, observations and a few informal discussions
Operating core	4	1	Face to face interviews, observations and informal discussions
Other	7	3	Informal discussions

Source: Author, 2010

3.2.2 Presentation of information

The compiled data was synthesised leading to a case study report which constitutes my results. The information gathered is presented in two chapters, beginning with basic information about Lilongwe Water Board and the Lilongwe water and Sanitation Project and then organisational learning in Lilongwe water Board. The information is as given by key respondents and informants during the interviews and informal discussions as well as information obtained from documents and through observations.

CHAPTER FOUR THE LILONGWE WATER BOARD AND THE PROJECT

This chapter consists of a compilation of information from the interviewed four top managers of Lilongwe Water Board (LWB), the Vitens Evides Resident Project Manager and organisational and project documents availed to the researcher. The chapter should provide a link of my research and the Lilongwe Water and Sanitation Project (LWSP). Through this research VEI expects to enrich the learning enhancement aspect of the project.

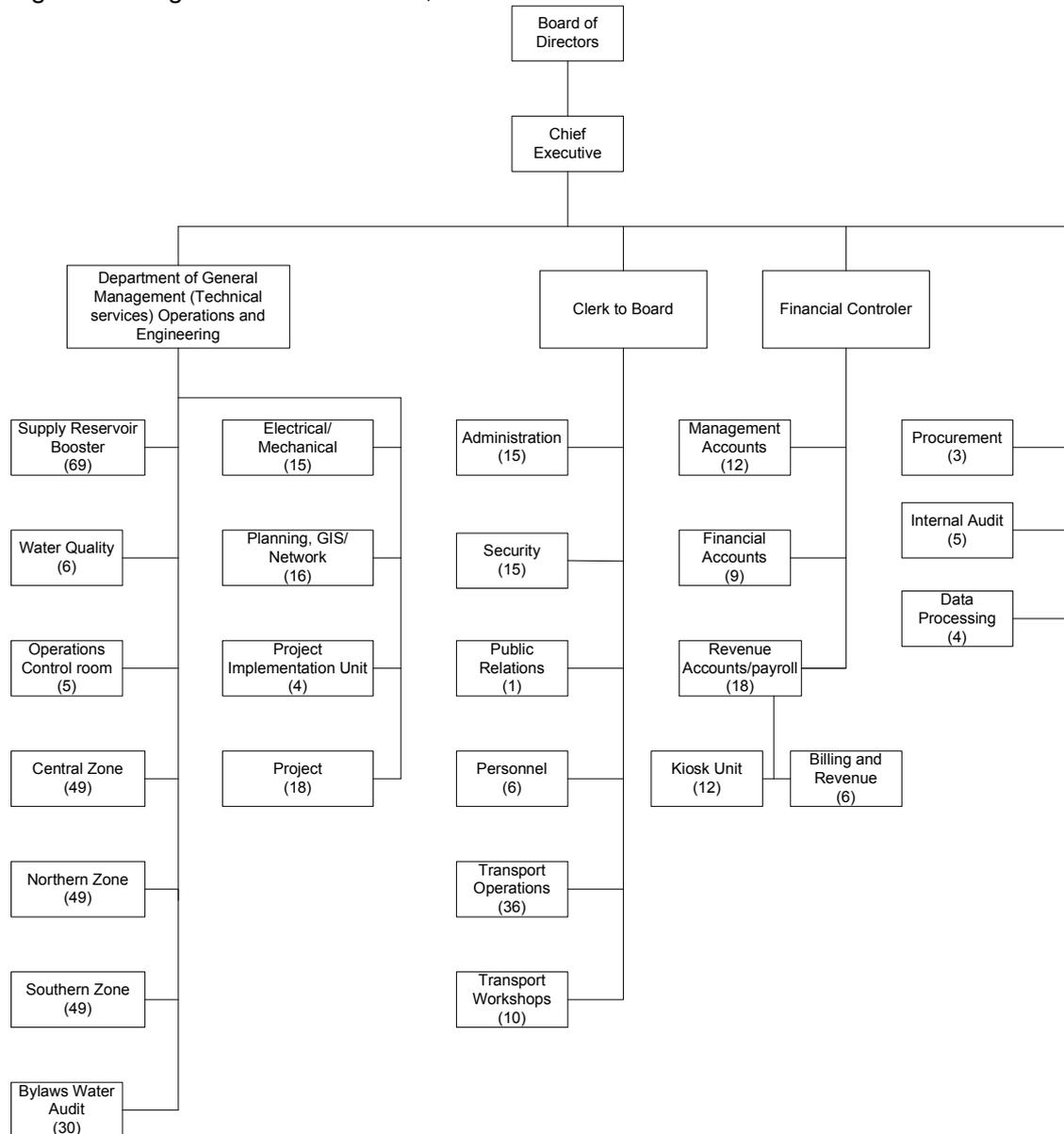
4.1 The board

Lilongwe city has a population of about 760 000 inhabitants covering an area of 350 square kilometers. LWB's mandate is to supply water to the city and the peri-urban. The peri-urban is occupied by the mostly low income households. The board is in the process of expanding its supply of water to these low income areas. As mentioned earlier, LWB is divided into three administrative zones; the southern, central and northern zones. Most of the infrastructure for water supply was built in the 1960s and 70s. The board supplies water to the peri-urban through water kiosks which are 461 in total: 373 of them operated by private operators and 88 by the board. Seventy two percent of the total population, especially in planned settlements get water for twenty four hours every day while twenty eight percent resort to alternative sources such as boreholes and wells (EIB, LWB and BWB 2008). Water quality complies with the WHO standards on drinking water (EIB, LWB and BWB, 2008).

4.1.1 Organisational structure

Lilongwe Water Board (LWB) is headed by a chief executive (General Manager) who reports to the board of directors. There are four departments which are the general management, the administration, the finance and the technical services department (operations and engineering). Each department has several divisions which are further divided into sections. The chief executive heads the general management department which includes internal audit, data processing and procurement divisions. The deputy general manager heads the technical services department which is made up of bylaws and water audit, water quality, projects, planning, three zones and operations divisions. The financial controller heads the department of finance which is made up of the financial accounts, management accounts and revenue accounts. The revenue accounts division consists of the kiosk unit and billing and revenue units. The clerk of the board is the head of the human resources and administration department. Administration, security, public relations, human resources, transport and operations and workshops are divisions in this department. Figure 4.1 shows the organisational structure of LWB.

Figure 4.1 Organisational structure, LWB



Source: EIB, LWB and BWB 2008, p. 31

4.1.2 Challenges

A number of challenges were identified which exist in LWB. There has been an increase in demand for drinking water against a background of limited water sources and treatment facilities. Associated with this has been the need to supply low-income areas with adequate water supply services amid absence of planning in those areas. There has been high level of non-revenue water (NRW) leading to high production costs. The theft and vandalism of water facilities especially in the low income areas has been rampant. LWB does not have plant and system performance monitoring tools and equipment. Nonpayment by customers is a

challenge which is exacerbated by inefficient customer management system. Tariff rates were said to be lower than the required rates for full cost recovery. These highlighted challenges have been added to high debt burden due to outstanding loans and accrued unpaid debts, high interest rates and high exchange rate losses (EIB, LWB and BWB, 2008).

4.2 The Lilongwe Water and Sanitation Project (LWSP)

The project was necessitated by the challenges faced by LWB as mentioned in the preceding section. Extending services to unplanned settlements, high population growth in peri urban areas as well as operational inefficiencies of the water board have limited the board's ability to provide water supply and sanitation to fast growing low income areas (EIB, LWB and BWB, 2008). Funding sourced from EIB and EU and a partner VEI was engaged resulting in a service contract signed between LWB and VEI. The funding is in the tune of 16million euros loan from EIB and 14.9 million euros grant which will be shared with Blantyre water board. As indicated in the introduction LWB will contribute 1.6% of its project budget share.

The service contract is such that the service contractor (VEI), works as an integral part of LWB identifying areas that need attention and improvement in the board as a whole. Vitens Evides International (VEI) is expected to bring new methods to enable sufficient and sustainable supply of drinking water. A number of tasks have been planned for accomplishment eight which I have selected on the basis of having some organisational learning orientation.

4.2.1 Tasks to be accomplished by the LWSP.

Task A: Reviewing the organisational structure of the water board

Sharing ideas, the service contractor (VEI) and the board are to assess the current organisational structure and come up with possible adjustment to it by adding, merging or removing some units. Optimum staffing will be proposed and relevant qualifications for the staff. Asked what the structure and manpower had to do with learning all the top management interviewees and the VEI resident project manager were in agreement that the structure influenced communication along and across organisational levels and therefore influencing information flow. The manpower's attitudes toward continuous learning were important in the review.

Task B: Financial and commercial management efficiency drive

This task involves reviewing of accounting software for appropriateness and procuring integrated accounting software, installing it and training the users. Under this there would be learning by the relevant employees on tariff calculation model, optimisation of meter reading and improvement of revenue collection.

Task C: Management information systems

This will involve developing an integrated MIS which can produce reports automatically and strengthening or establishing units responsible for preparation of reports.

Task D: Reduction of non-revenue water (NRW)

This will involve reduction of real losses by procurement of leak detection and measurement devices, tools and machinery for repairs and leakage repair material. Together with this a learning programme will be attached, concerning GIS mapping of distribution system and loss reduction (in transmission and pumping lines, reservoirs leak detection and leak repair). Also involved in reduction of NRW will be reduction of apparent or commercial losses which will involve programmes such as customer metering, identification of illegal connections and quantification of unbilled authorised consumption (VEI 2009).

Task E: Preparation and implementation of operation and maintenance plans

This will involve designing of plans for the operation of the complete water supply system of LWB and implement the plans through on job training. The plan will include an operation manual for all water works, a manual for maintenance works and a routine plan for maintenance.

Task F: Reduction of costs by keeping pumping regimes to the optimum

Possibility to save energy cost will be studied and any saving potentials will be implemented, if possible with minimum investments.

Task G: Public relations (PR) works

There will be collaboration in efforts to provide good services to customers through public relations works. Information campaigns will be included and training as well as information dissemination programmes for water kiosk operators and water meter readers.

Task H: Implementation of investment programmes

The investment programmes will involve rehabilitation of water production facilities, network rehabilitation (pipes, booster pumping, stations and reservoirs), reduction of non-revenue water and water supply to low income areas. It will also include review of designs, completing of bidding documents, bidding, supervision of construction and on the job training in operations and maintenance.

4.3 Conclusion

This chapter has provided insight on the background information on general state of affairs at LWB and issues as viewed by the board and VEI. With the information, planned interventions by VEI and findings from the case study comparisons and conclusions were made then recommendations so as to enhance organisational learning in LWB.

CHAPTER FIVE RESULTS LEARNING IN LILONGWE WATER BOARD

5.1 Introduction

The findings that follow in this chapter were obtained through interviewing four members of the top management, ten members of the middle management and five members of the operating core. I used the topic list as outlined in annex A. Informal discussions also provided information from eleven operating core employees. I also interviewed two VEI staff working in the project and was involved in a lot of informal discussion during my period at LWB. I also made observations some learning going on in form of meetings which were held during my stay at LWB, such as telephone conversations and internet connections indicating platform for knowledge sharing. I had access to documents such as minutes of meetings, training plan, reports (monthly and annual) and a report by the previous consultant.

5.2 The state of learning at LWB

This section contains views of four members of top management and ten members of the middle management. They outlined what is being learnt at LWB, who is learning, who initiates the learning, the learning routes, the learning frequency, and venues where the learning occurs. The summary of the state of learning in LWB is summarised in a table in annex B.

Learning in LWB is initiated by the top management in consultation with divisional managers (middle managers). The management (top and middle) decide who learns where, when and how, the interviewees indicated. The interviewees recognised the following learning routes: meetings, memorandums, workshops, training courses, on-job training, peer sharing and training. They also identified reporting and performance appraisals as learning facilitator with telephone and internet as important mediums for learning. They however indicated that internet was still limited at LWB and therefore limited to the management. From the interviews entries were made of learning routes and type of learning (formal, non-formal and informal). I found out that workshops dominated learning in LWB, followed by on-job training, then training. The whole ranking of the training routes is shown in figure 5.1. The learning routes were classified into formal, non-formal and informal. The information indicated that 50 % of the learning at LWB is Informal, while 34 % is non-formal and 16% formal. From the same information I found out that there is about 35% emphasis on tacit knowledge.

Managers (both top and middle) learn mainly through meetings and workshops with their main content of their learning being policy issues, general management issues, functional management issues and enhancing of supervisory skills. Their major venues of learning are boardrooms at the workplace where they frequently meet up to three times per month depending on need. In hotels they also meet mainly for workshops or seminars in Lilongwe or outside in holiday resort. The frequency for workshops could not be ascertained because they depend on need and availability of financial resources. Most of the learning by managers is non-

formal and explicit knowledge is emphasised. In some circumstances workshops are done at training institutions in Malawi. Some technical middle managers (supervisors) such as engineers also learn through training courses at a rate of about one person every three years. Examples of where the training is done are ESAMI in Tanzania, Polytechnic in Lilongwe and University of Malawi among others. When the budget allows more people are sent for training.

In the operating core, on-job training dominates according to respondents. On-job training is common for office employees and those working in the technical divisions especially technicians or artisans and their assistants or 'hands'. On-job training is informal learning and emphasises on tacit knowledge. Workshops are also done for clerical employees and technicians. Workshops are done at LWB or at training institutions in Malawi. Formal training of clerical staff and technicians is done at institutions such as the polytechnic, New Horizon, Chigweje institute and Quantum Solutions training institute. Peer sharing is a learning route common for operations workers such as plumbers, workshop employees, network staff (GIS) and the ICT employees. It is informal emphasising on tacit knowledge and the learning is continuous.

New employees are exposed to learning through induction courses which are done as workshops or on-job training emphasising non-formal and informal learning both tacit and explicit in nature. The frequency of inductions is influenced by the recruitment of new employees. Employees at all levels can learn through committees. Committees are created to look at specific issues for example the workers committee is responsible for deliberating on labour issues. Another example of a committee at LWB is the environment committee which also comprises stockholders outside the organisation. It looks at issues like catchment degradation, working with communities to reduce siltation of water sources.

'Performance appraisals are done as quality assurance measure and they assist learners to learn as they strive to reach agreed targets', one of the interviewed top managers said. The same manager conceded that some of the recommendations that come from performance appraisals are not followed due to limited resources. The respondents also informed me that LWB has also been using consultants to institute learning for all employees. The last time a consultant did an assignment in LWB was in 2008. From time to time consultants are engaged depending on need and availability of resources, the respondents indicated.

Figure 5.1 Routes to learning in LWB

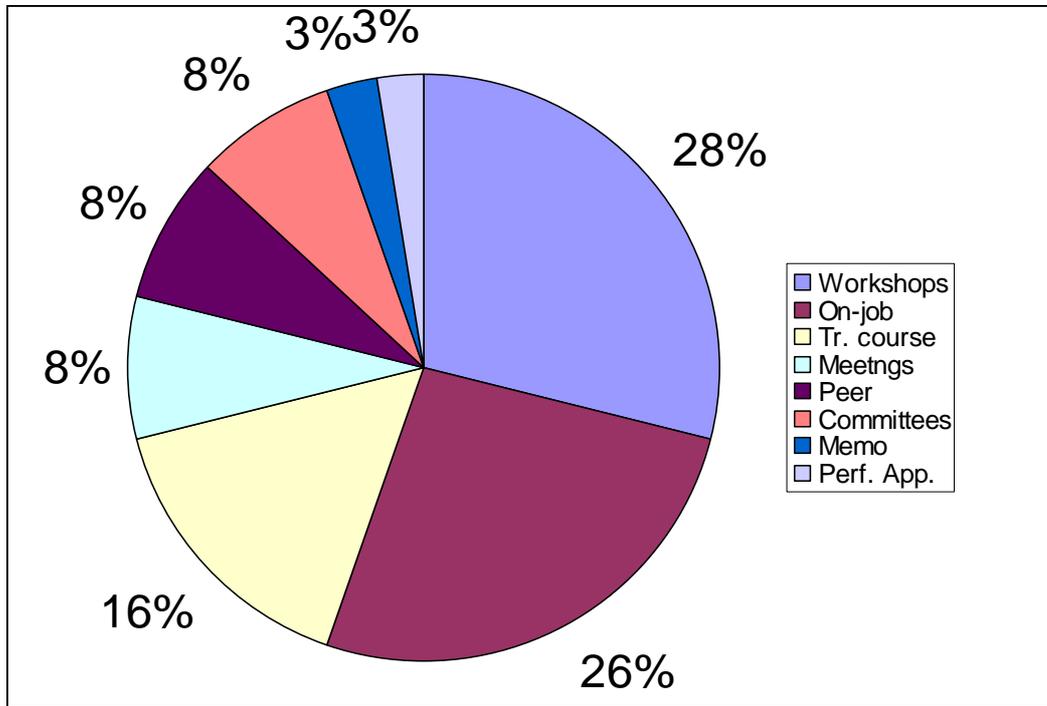
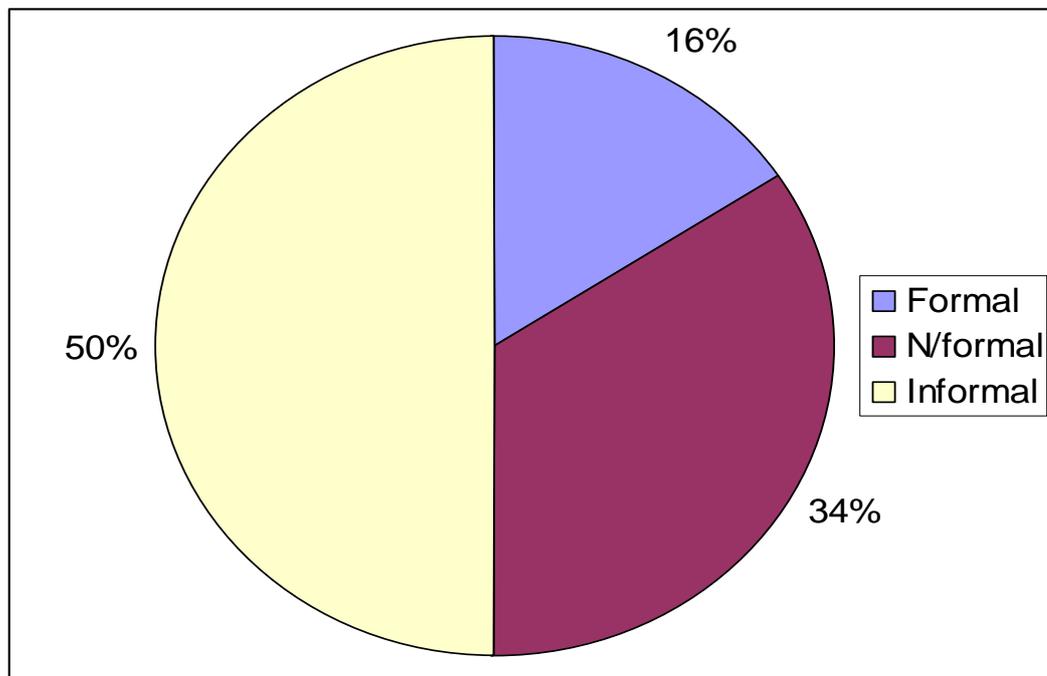


Figure 5.2 Types of Learning LWB.



5.3 Other views to organisational learning

This section indicates views from workers in the operating core whose perspective were obtained through face to face interviews and informal discussions. All five of the interviewed and all eleven informally discussed with indicated that they were not aware of any learning occurring besides a few training given to employees in the management. They could not ascertain what courses the management employees were trained in neither they could give the duration. When further questioned 2 of the employees interviewed and three discussed with, from the technical services department agreed that one time they were put under somebody to understudy. One of these employees who were informally discussed with also revealed that he was in the environment committee. All the 16 employees agreed that information flow was in one direction (from management to workers) and that they rarely are included in decision making meetings. In the meetings they attend they mostly given instructions on how to conduct their duties. They all agreed that they submit reports to their supervisors with their recommendations periodically but did not recognise any learning from the practice. They indicated that in some cases their recommendations were responded to, but in some they were not. All the sixteen agreed that they periodically attend meetings chaired by supervisors but they also all indicated that they did not see any changes as a result of those meetings. In such meeting the respondents indicated that among others the following were discussed: work delivery, punctuality, sticking to laid out plans and organisational goals, avoiding losses, handling customers, organisational procedures, work relations and discipline. Two of the five who were interviewed in this category and two of those informally discussed with have access to telephone, computers and internet but indicated that none of them had received formal training in computers except learning by themselves. All the employees involved agreed that their performance is appraised every three months but five out of the sixteen realized that performance appraisals facilitate learning.

5.4 Conditions for learning at LWB

Out of the total thirty two employees whom I interacted with, seven agreed that the conditions at LWB were conducive for learning using the following means: meetings, memoranda, reports, telephone conversations, peer sharing, on-job training and performance appraisals. They indicated that workshops or seminars, training courses, consultancy, websites and e-mails were limited by lack of financial resources to fund such methods and therefore limited to a few employees. They pointed out that if funding was available; all other conditions were suitable for learning. However the other twenty five who included two VEI employees and seven middle managers thought there was more to the conditions which required improvement. Their views were that for conditions to improve employees needed to be motivated, resources needed to be availed, there should be unity of purpose among departments, obsolete equipment need to be replaced and the management has to be initiative. To emphasize on the need for management to be proactive and act upon advice given from any angle three interviewees in the middle management lamented the failure of LWB to act upon functional review recommendations which were given by consultants in 2008.

5.5 What is done with what is learnt?

All of the four interviewees in the top management indicated that there was a follow-up mechanism to ensure that if any new information was shared through any route recognised by the organisation and was approved by the top management as new knowledge then it had to be implemented. The methods of ensuring this as indicated by the top management were through memoranda, reports and performance appraisals. They indicated that if some knew knowledge was approved to be useful in transforming the organisation then they would incorporate that on the key performance areas of the relevant employees. While six of the middle managers agreed to the assertions of the top management, four of them thought otherwise. The four middle managers argued that there was no proper monitoring to ensure that what was generated as new knowledge in the organisation was used to transform operations. They indicated that a lot of resolutions were passed in meetings, reports written by consultants, workshops and seminars, but no proper follow-up to ensure the new knowledge was utilised. One example they gave was the issue of non-revenue water (water which is produced but not billed), which water is lost through leakages, unauthorised water connections and authorised consumers not billed. They indicated that despite meetings, workshops and trainings to reduce non-revenue water, it has instead increased. This view was shared by all the five workers interviewed from the operating core together with their counterparts whom I discussed with.

5.6 Opportunities and barriers to learning

The two tables (5.1 and 5.2) that follow show what people interviewed and discussed with regarded as opportunities and barriers to learning. The tables also show from which category the respondents with that view were and how many had that view and their proportion in the category.

Table 5.1 Opportunities to learning in LWB

Category of respondents	Top Management	Middle management	Operating core	VEI
Available training institutions in Malawi	4 (100%)	10 (100%)	16(100%)	2(100%)
Support from international organisations	4 (100%)	10(100%)	16(100%)	2(100%)
Loyal employees	4 (100%)	10 (100%)	16(100%)	2(100%)
Developing ICT (internet)	4 (100%)	8 (80%)	3(18.75%)	2(100%)
Management ready to learn	4 (100%)	7 (70%)	0 (0%)	0 (0%)
Government support (free environment to interact)	4 (100%)	10 (100%)	16(100%)	2(100%)
Stakeholder support	4 (100%)	6 (60%)	1 (6.25%)	0 (0%)

Source: Author, 2010.

There was general agreement among respondents on most of the opportunities for learning at LWB, but no respondent in the operating core agreed that the management was ready to learn. This was contrary to the management respondents who had

indicated their readiness to learn as an opportunity to learn. VEI respondents indicated that there was need for management to be 'more flexible'. Fifteen out of the sixteen operating core respondents said they were not aware of the level of stakeholder support to LWB to warrant it an opportunity. VEI respondents also suggested that stakeholder support needed to be scaled up since most of the learning interventions needed support from outside LWB, for example issues of non-revenue water and catchment degradation.

Table 5.2 Barriers to learning in LWB

Category of respondents	Top Management	Middle management	Operating core	VEI
Lack of motivation	2 (50%)	7 (70%)	14 (87.5%)	1 (50%)
Management not flexible	0 (0%)	4 (40%)	16 (100%)	1 (50%)
Lack of management initiative	1 (25%)	6 (60%)	10 (62.5%)	2 (100%)
Low computer literacy	4 (100%)	10 (100)	16 (100%)	2 (100%)
Top down, one way communication	0 (0%)	4 (40%)	16 (100%)	0 (0%)
Obsolete infrastructure	4 (100)	10 (100%)	16 (100%)	2 (100%)
Resistance to change: among management	0 (0%)	5 (50%)	8 (50%)	2 (100%)
among other workers	2 (50%)	6 (60%)	7 (43.75%)	0 (0%)
Selection of candidates for workshops and training not objective	0 (0%)	4 (40%)	11 (68.75%)	0 (0%)
Lack of coordination among departments	0 (0%)	7 (70%)	9 (56.25)	1 (50%)
No learning policy	0 (0%)	2 (20%)	5 (31.25)	2 (100%)
Organisational performance not analysed	0 (0%)	4 (40%)	0 (0%)	1 (50%)

Source: Author, 2010

There were a lot of disparities among respondents in their views about barriers to learning in LWB. The top management did not indicate that they could be barriers themselves to organisational learning as was indicated by the operating core respondents and some middle managers. However one out the four interviewed top managers conceded that there was need for them to be initiative. There was unanimity on barriers such as low computer literacy and obsolete infrastructure as barriers to organisational learning. VEI respondents observed some signs of resistance to change among the management which was supported by half of the interviewed middle managers and 50% of the operating core respondents. One out of the two VEI interviewees pointed out that LWB was not analysing its data so that everybody would understand and make sense out of it. The data included water production, water loss, revenue, leakages, new connections, disconnections etc. Such data was kept as raw data. He said such data needed to be analysed into tables, charts and trends so that performance could easily be accessed and understood by everybody. Majority of operating core employees indicated that selection of candidates for workshops and training courses was not done transparently which was echoed by 40% of the middle managers interviewed. The operating core respondents were unanimous in pointing out that the management was top down, not accommodative to knowledge sharing and

change. VEI respondents said that there was no learning policy which was supported by 31% of the operating core respondents and 20% of the middle managers.

5.7 Sustaining OL in LWB

There was consensus among all interviewed and those informally discussed with that OL can be sustained if the existing barriers were removed. Their difference on what they perceive as barriers is indicated in table 5.2. One of the interviewees in the middle management said OL can only be sustained if “attitudes of staff were changed toward their job, staff turn-over was reduced, revenue collection was increased and expenditure was reduced in outsourcing some services since some internal staff have ability but are not recognised”. Five interviewees in the middle management and three in the operating core indicated that, to sustain any learning there was need to remove hostilities among departments, disproportionate sharing of resources and increase flexibility in the management. Two top management employees and four middle managers pointed out that there was need to strengthen the monitoring and evaluation and feedback mechanisms to ensure that learning that occurs, result in positive changes in the organisation.

CHAPTER SIX DISCUSSION

6.1 Introduction

Though in practice gaps in OL were identified, the understanding of the concept exists among LWB management because when asked during interviews, they identified the aspect of OL in the organisation. This section analyses the extent of OL in LWB based on responses of staffers in interviews, informal discussions, and information obtained from documents availed during the data collection process. OL learning practices that are applied acknowledged and gaps are identified. The gaps identified are the basis for recommendations in the following chapter 6.

6.2 The Learning routes

Responses from the operating core respondents indicated that they only understood learning as training because they referred to training only when asked about OL. They also gave importance to learning that end up in acquiring a certificate than learning that results in transformation in the organisation without necessarily getting certificates. This was a source of discord between the management and low level workers because the workers thought learning that results in certification was a preserve of the management. Even some respondents in the middle management acknowledged this indicating that formal learning concentrated to the management. The managers who undergo training come back to their work and confine themselves to their offices and their acquired knowledge is not utilised to transform operations of the organisation.

Learning on-the job was the most common route for low level workers such as plumbers, workshop hands and office clerks. Many according to my observations had gained experience through on-job training and through peer learning. The aspect of positive attitude to work seemed to lack showing the essence of formalised training to beef-up their theoretical knowledge and improve professionalism. Low level workers did not realise that learning was also their responsibility but a responsibility of their leadership. This is a negative aspect because it stifles garden variety creativity (Mayfield 2009) among the workers. Though the concept of communities of practice was never mentioned by all respondents, my observations detected some level of such a community in the technical services department where engineers and technicians have platforms to share knowledge and best practices such as seminars and meetings.

Though performance appraisals are done there seem to lack follow-ups to deal with any observed deficiencies among workers and reinforcing strengths among workers. To be effective, I feel performance appraisals should be associated with rewards such as worker of the year or performance bonuses. In the case of LWB reward such as annual bonus (or 13th check) are given, but not related to performance, therefore learning is not reinforced. An indication from the middle management and the operating core is that the feedback system if there is not effective to follow up on any form of learning. Story telling (Faul and Kemly 2004 cited in Ling et al 2009) as indicated earlier in my review of literature, has been found to be effective in cases where individuals attend courses, training workshops or any event, to share with other workers. Retrospect was also not mentioned as a trajectory to learning which Faul and Kemly (2004 cited in Ling et al 2009) indicated that it is work centred, contextualised and emphasises socialisation and platform for collaborative knowledge creation”(Chatenier et al 2009). I however observed

the use of retrospect in the LWSP with the VEI project manager being involved and with top management middle managers involved in steering the project. If this could be adopted and utilised throughout the organisation OL would improve.

Problem based learning (PBL) was never mentioned though unaware the organisation could be utilising especially according to my observations, in the technical services department. Table 6.1 shows a comparison of what I identified as possible learning routes (some of the learning and context factors in table 2.2 are also routes to learning) and findings in LWB.

Table 6.1 Possible gaps in learning routes at LWB

Learning route	Comments on its presence or absence at LWB
Formal education	This not the responsibility of LWB since they employ people who have attained a certain level of formal education. However situation exist in LWB when employees go to colleges or universities to get diplomas and degrees.
Training	There periodic training of staff job related issues either within the organisation or at training institutions.
Feedback	Some respondents indicated that no feedback mechanisms existed. However the feedback could there but weak or not taken seriously.
Evaluation	Evaluation is incorporated in reporting but respondents did not recognise it as a learning trajectory.
Reflection on results	This could be present but was not mentioned. One respondent indicated that information at LWB was not fully processed or analysed into graphs, tables or trends etc. This could make reflection on result possible.
Research/documentation	There is no formalised research at LWB. This important for collecting information, soliciting for ideas, views or concerns, analysing perceptions, speech or inputs.
Supervision/mentoring	This is present in LWB within the on-job training. More mentoring is expected through the LWSP.
Coaching	This is present within on-job training.
Performance appraisals	Performance appraisals are utilised in LWB. However their effectiveness was challenged by some respondents.
Meetings	Meetings are at all levels of LWB, however issues discussed in such meetings may have an influence on learning of specific levels of employees.
Collegial consultation	Collegial consultation exists, but recognised as peer sharing. It was recognised by majority as a source much of the learning in LWB.
Job rotation	Job rotation was not identified in LWB.
Communities of practice	Signs of communities of practice were observed.
Story telling	Story telling was not recognised as a route to learning.
Knowledge networks	No formal structures were identified in LWB, neither was there any recognition of knowledge networks.
Retrospect	Retrospect was identified in activities of the LWSP.
Problem based learning	PBL was not mentioned by respondents
Workshops or seminars	Workshops and seminars are carried out, but are limited higher level employees.
Consultancy	A consultant was last engaged in 2008 but views were generally that the recommendations were never implemented.

Source: Author, 2010

6.3 The learners

Learning at LWB seems to be biased towards the management on the expense of workers on the lower levels. This especially the case when the learning is formalised like training out of the organisations and workshops or seminars. Also most of the meetings do not involve low level workers. Low level workers are then instructed through memoranda or their supervisors to follow the laid down operation procedures. This may have a contribution to the workers' negative attitudes because they may feel that their views are not accommodated. Giving low level workers responsibilities for organisational performance create a sense of ownership among workers. Recognising workers' contributions in the organisation creates a culture for learning. Leeuwis (2004) supported this when he indicated that for organisations to be learning organisations they should recognise that learning emanates from all levels and parts of the organisation. Contradictions in views between management and lower level workers portrayed that collaboration may not exist among different levels of employees in LWB and therefore absence of mutual ownership of knowledge. Not involving other sections of the organisation in the creation and sharing of new knowledge may stifle the transforming process thus failure to adopt innovations due to resistance from some sections of the organisation.

6.4 Learning frequency

There was less recognition among majority respondents of learning as an on-going process. Majority in the operating core seemed to view that learning happens at training and stops when someone starts working. This view follows that one learns, get certificated and is employed as a 'learned' person. If more learning is required the person goes back to school. There is need for LWB employees to recognise that the beginning of working life is the beginning of more lifelong learning. This view is supported by Leeuwis (2004); therefore LWB should recognise and create opportunities for lifelong learning through staff development policies. Such policies were not evident because no documentation was available on request. Organisations are communities of practice which as long as they are operating, learning continues and therefore they have to be aware of it.

6.5 Learning matters

From the interviews it seemed as though some matters for learning were limited to some sections or level of the organisation. This could be a source of discord among different levels of LWB employees as lower level employees or even middle manager might think some issues do not belong to them. This was witnessed in responses like, "that one is a policy issue" or "that one can only be answered by management". It seemed the so called 'policy' issues were not known to low level employees even to some extent middle managers or it might be that only top management were authorised to discuss issues.

There was an indication that importance of tacit knowledge sharing is recognised in LWB though there was no direct mention of the concept. This was evident from the use peer sharing and on-job training as learning routes for some learning matters.

6.6 Conditions for learning

Conditions that can influence learning in an organization were listed by Kyndt et al (2009) (table 2). Clanwaert and Van Bree (2008 cited in Kyndt et al 2009) defined learning conditions as situation created in the social, material or informational environment and work environment itself by prominent figures, agents of labour organisations and employees themselves so that others learn. Generally there was agreement among the respondents that conditions at LWB were not optimal for learning though there was no consensus on the causes of these limiting conditions. The lower level workers view management as responsible while the managers indicated inadequacy of resources as major cause. Low level workers and to some extent the middle managers perceived management as responsible for motivating employees, taking initiatives and uniting all employees towards one goal of transforming the organisation. They also argue that the management at LWB should be receptive of their ideas and create a free environment for learning. However, low level employees did not recognise that they also share the responsibility to creating an environment conducive for learning.

6.7 The results of OL in LWB

OL is manifested in innovations, increased, effective and efficient production resulting customer satisfaction. It was not within the scope of this research to find out customer perceptions on the operations of LWB. According to Aydin and Ceylan (2009) when an organisation learns, employees' behaviour is transformed towards strengthening the organisation in achieving improved results and ensuring adaptability to change. What would be expected from LWB if OL is leading to positive changes are, employee satisfaction, financial growth and improved performance. Interviews showed that these changes do not exist, and all respondents were in agreement although they differed on the causes. Documents show low performance for the previous three years. The issue of high non-revenue water (NRW) is a key indicator for sub-optimal performance. This means, if efforts are put to promote OL in LWB like some respondents indicated, the results are still not desirable. There is therefore need for all organisational members to unite towards improving the organisational learning capacity (OLC) of LWB.

6.8 Opportunities and barriers to learning

There were variation among respondents, especially on barriers to learning and the views were dependent on the level of the respondent. The opportunities and barriers to learning have influence in determining the conditions for learning and also the results of learning. Though the management thought barriers had been placed by the deficient infrastructure and other non-human resources, the operating core thought otherwise. The low level workers argue that barriers are more to do with the way the organisation is managed. To some extent the workers may be correct because it is the responsibility of the management to create a learning environment. The problem could be that management in LWB seems to concentrate on trying to find strategic ways of bringing innovation which require large investments which are difficult to get. Creating an environment conducive to garden variety creativity (Mayfield 2009) can circumvent a lot of barriers for it is an excellent tool for fostering OL at all levels on a routine basis. Employees are then motivated to find better ways of performing daily tasks with available resources leading to incremental positive transformation. If opportunities for OL

identified by the informants are utilised it will create mutual agreement among all levels of employees in LWB. All informants were in agreement that the existence of the LWSP was the greatest opportunity for LWB to rebuild its OL system.

6.9 Sustaining OL in LWB

There was consensus among all respondents that if current barriers to OL were removed OL would be sustained. Consensus need to be built on identifying these barriers so that they can be removed. The need for monitoring and evaluation and feedback mechanisms as mentioned by some respondents will ensure that the organisation always checks progress, making relevant adjustments. High staff turn-over does not help the organisation because it means new employees are continuously coming in to replace those who leave. This gives the organisation a greater task of instilling a learning culture to new members which might be resisted. Sustaining under such conditions may be difficult. LWB therefore need to have mechanisms to retain staff to ensure continuity in learning. Positive organisational performance according to Aydin and Ceylan (2009) is a product of OL, while at the same time positive performance motivates employees to learn. Therefore sustaining organisational performance also results in sustained OL. Leeuwis (2004) indicated that organisations should recognise that opportunities for lifelong learning are offered through staff development policies. Continuous effort by an organisation in this case LWB should result in sustainable OL.

6.10 How LWSP will enhance OL

The LWSP should lead to more sustained OL in LWB since most of the barriers mentioned by the management respondents will be removed. This is because there will be investment in infrastructure, equipment and human resources development. However this may not be enough since respondents from the operating core mentioned some barriers which cannot be dealt with by the project. Such concerns need to be objectively considered and consensus built among all LWB employees to enhance cooperation, a pre-requisite for organisational learning. Since there is a large investment in infrastructure and equipment nurturing tacit knowledge sharing should be a priority. Janowicz-Panjaitan and Noorderhaven (2008) pointed out that exchange of knowledge should not be restricted to exchange of documents (such as operating manuals) etc, but face to face exchange of skills. The project should enhance LWB's being a community of practice (Karalis 2010), a venue for situated learning (Lave and Wenger, 1991 cited in Karalis 2010) and transformative learning (Mezirow, 1997 cited in Mathis 2010).

The project is an example of an international strategic alliance were according to Tsang (1999 cited in Lui 2009) the primary goal of LWB is to absorb and assimilate tacit knowledge from VEI's unique expertise store, while VEI need to access and use LWB's local experiences. This should instill a learning culture in LWB. While the project will lead to positive changes there is need to be aware of the need for lessons, information and knowledge to be shared with others throughout the organisation (Leeuwis 2004) to ensure support and sustainability. As it is the project emphasises training (on and out of, the job) necessitating the need for those involved to consider all possible learning trajectories. While it is recognised that respondents indicated some learning routes already in existence in LWB there is need to reinforce them together with efficient feedback mechanisms, to monitor their effectiveness. Review of the organisational structure through the project will have an influence how information will be

communicated in the organisation and this influence is expected to be positive. The investment may have a motivating influence which may trigger learning among employees. Investing in MIS could boost OL because the platform for knowledge sharing is created. MIS will improve reporting which is a way to learn together with the potential for efficient feedback system. The investment in reduction of non-revenue water should also enhance learning among all employees setting a platform for creativity.

CHAPTER SEVEN CONCLUSIONS AND RECOMMENDATIONS

Here I summarise my findings and reveal how LWB approaches OL as perceived by the management and workers at the lower levels. Areas of conflict among different levels of the organisation are also highlighted together with possible gaps, the LWSP and finally recommendations.

The purpose of this research was to examine the extent of OL through knowledge sharing and transformation in Lilongwe Water Board (LWB) so that through the Lilongwe water and Sanitation Project (LWSP) relevant interventions could be made. To accomplish this, a literature search was conducted leading a theoretical framework for research and research questions were developed leading to a topic list which was used to interview respondents. Views were obtained from three levels of the organisation, the top management, middle management and operating core using interviews, informal discussions and organisational documents. Views were also obtained from two VEI respondents who are working for the LWSP.

7.1 Findings

From the interviews and informal discussions carried out I found out that there some level of organisational learning happening and this was according to the majority of LWB management. The management gave the general outline of the learning routes existing, elaborated on the sections of employees who were learning, what they learnt, where the learning was happening and the frequency of learning. They also indicated who was responsible for making decision on learning, the opportunities and barriers to learning and the learning outcomes. The operating core employees were able to identify training as the only learning trajectory existing at LWB. They further indicated that they were not aware of any other form of learning at LWB. I however concluded that there were some unaware learning (Pokharel and Halt 2010) occurring among these lower level employees because learning routes like meetings, committees, access to internet and performance appraisals also involved them. They were only not aware that by being involved in such forums, learning would occur because there is sharing of views among those involved leading to collaborative knowledge creation (Chatenier et al 2009). There was general agreement that the top management (consulting middle management) was responsible for making learning decisions communicating messages to the operating core as instructions through memorandums.

Conditions for learning were found to be limiting mainly due to inadequate resources (financial and infrastructural). Some barriers were revealed which also limit the learning conditions, the major one being lack of common purpose among the different levels of employees in LWB. The low level workers claim that they are not included in most of the knowledge creating processes. This could lead to resistance among low level employees to some initiatives coming from the management. This is confirmed the statement by Leeuwis (2004) that for organisations to be learning organisations they need to recognise that learning emanates from every experience in the organisation, all levels and parts involved. On the other hand the low level workers seemed not aware that they were responsible for their own learning, not the management having sole responsibility. Studies carried out by Bonsall (2010) produced similar results.

Respondents concurred on most of the opportunities that exist for learning in LWB. This could be the starting point building up unity of purpose among all levels of the organisation. Another area of concurrence was that though indications were that some knowledge sharing platforms existed, there was hardly any positive transformation in LWB. This was confirmed by the revelation that there had been negative organisational performance for the previous three years. One major source of this negative performance was the very high non-revenue water which is the result of leakages, non-billing, illegal water connections and obsolete nonfunctional water consumption reading meters. High non-revenue water (about 36%) results in loss of revenue by the water utility. According to Aydin and Ceylan (2009) organisational learning should result in effectiveness, one of whose indicators is financial and growth performance. With this background, sustaining learning in LWB is a challenge without novel interventions especially external to the organisation.

The Lilongwe water and sanitation project seeks to invest in infrastructure, equipment and human resources development. As mentioned earlier this research should provide insight to VEI so that through the LWSP appropriate interventions with regard to organisational learning executed. While LWSP had already predetermined tasks to be fulfilled, knowledge about OL in LWB (provided by this research) should facilitate adjustment of appropriate task so that they fulfill the goal of OL.

7.2 Recommendations

The following recommendations are based on the findings from respondents, observations and documents which were availed during the research. They should contribute towards enhancement of organisational learning in LWB and any other organisation and particularly enhance the organisational learning component of the Lilongwe Water and Sanitation Project and any other related projects.

- Lilongwe Water Board should have a learning policy so that every employee is aware of any form of learning that occurs in the organisation. 'Aware learning' (Phokharel and Halt 2010) should be promoted with members being supported to learn (financially and other resources) and encouraged to help each other to learn. Regular appraisal of learning should be done to measure gaps in learning and identify appropriate learning methods.
- All staff members in the organisation regardless of levels (Leeuwis 2004) should be able to openly discuss issues and share information within organisational levels and across levels, within departments, divisions and sections, and across them. Employees should be rewarded for learning and encouraged to give open and honest feedback (Leeuwis 2004). Teamwork comprising all levels of employees can instill confidence among employees, sense of responsibility and ownership of successes and failures. LWB should have a two way communication system incorporating a suggesting system open meetings and informal discussions.
- Employees should be encouraged to question organisational practices regardless of rank to facilitate transformative learning (Mathis 2010) and

- management should also be able to listen to opposing views to encourage collaborative knowledge creation (Chatenier et al 2009). Employees should view problems in the work place as opportunities to learn than barriers.
- Instead of aiming for very high level innovations which might be very costly and risky LWB can emphasise on 'garden variety creativity' (Mayfield 2009) which is incremental but more affordable form of encouraging innovativeness among all employees.
 - There should be investment in communication infrastructure to enhance movement of messages throughout the organisation efficiently.
 - There is need for capacity to research, opening up for new knowledge, soliciting for ideas, views or concerns. Perceptions, inputs from a variety of sources inside or outside the organisation need to be explored, analysed and experimented upon to generate innovations. This is therefore makes the establishment of a research and development department pertinent.

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ANNEXES

Annex A

Topic List

Guide to investigation of Organisational learning at Lilongwe Water Board

1. The background to Lilongwe Water Board (LWB) and the Lilongwe Water and Sanitation Project (LWSP).
2. Learning entities in LWB
 - presence of learning
 - awareness that learning exists
 - the learners
 - the initiators
 - the monitors
 - responses
 - learning reasons.
3. Learning choices
 - learning resources
 - learning venues
 - learning time
 - learning routes
 - learning type
 - learning matters.
4. Learning conditions
 - learning resources
 - opportunities
 - barriers
5. Transformations
 - changes resulting from learning
 - experimentation or research taking place.
6. Learning results and feedback
 - Effectiveness
 - Efficiency
 - New product dimensions
 - improved services.

Annex B

The state of learning at Lilongwe Water Board.

Learning matter	Learners	Learning route	Learning location	Learning frequency	Type of learning	Knowledge Emphasised
Policy issues	SM, DM, S	Meetings, memorandums' Workshops	LWB Hotels	Monthly Workshops not fixed	Informal Non formal	Explicit
General Management	SM, DM	Workshops	Hotels Training institutes	Not fixed but at least one/month	Non formal	Explicit
Management development	SM,DM,S	Workshops	Hotels Training institutes	Not fixed	Non formal	Explicit
Functional management	DM, S	Meetings Workshops	LWB Hotels Training institutes	Monthly Not fixed, when necessary	Informal Non formal	Explicit
Project management	DM, Eng, Tec.	Training courses	University of Malawi ESAMI (Tanzania)	1 person every 3years	Formal	Explicit
GIS	Planning/ GIS staff	On-job training	LWB	Continuous	Informal	Tacit
Environmental Management	Water quality and zonal staff	Committees	LWB Zones and catchment	When necessary	Informal	Explicit
Water treatment plant operations	Operation and engineering staff (Technicians and assistants)	On-job	LWB	Continuous	Informal	Tacit
Supervisory skills	DM, S	Workshops	Hotels Training institutes	At least a workshop per year	Non formal	Explicit
Fault diagnosis and prognosis for engineering systems technologies	1 Eng,	Training course	Birch Cooper (Swaziland)	Once in 2009/2010	Formal	Explicit
	Tec.	On-job training	LWB	Continuous	Informal	Tacit
Customer service delivery (handling customers)	Revenue division staff, PR, zonal staff.	Workshops	Hotels Training institutes	At least once a year	Non formal	Explicit
Computer packages	All professional staff and office staff in all departments	Training	Polytechnic	1 person per year	Formal	Explicit
		Peer sharing	LWB	Continuous	Informal	Tacit
Zone office management	Zone office staff	Workshops	Hotels Training institutes	At least a workshop per year	Non formal	Explicit
Office skills	All clerical staff	Workshops	Hotels Training institutes	At least a workshop per year	Non formal	Explicit
HR issues, planning and organisational skills,	HR operational staff	Training course	Polytechnic	One person per year	Formal	Explicit
		Workshops	Hotels Training	At least a workshop	Non	

establishment management			institutes	per year	formal	
Conflict management and labour relations	HRM and workers' representatives	Committees	LWB	When necessary	Informal	Tacit
Software maintenance	Software technicians	Training course	Polytechnic Mpemba	1 technician every year	Formal	Explicit
Computer assisted financial management	Finance operation staff	On-job training	LWB	Continuous	Informal	Tacit
Quantum and Win payrolls up-date	Finance operation staff	On-job training	LWB	Continuous	Informal	Tacit
Laboratory Practices Health and safety	Water quality staff	Workshops	Hotels Training institutes	At least a workshop per year	Non formal	Explicit
Laboratory utensils management	Water quality staff	On-job training	LWB	Continuous	Informal	Tacit
Vehicle maintenance	Transport workshops' staff	On-job training	LWB	Continuous	Informal	Tacit
Defensive driving	Drivers	Drivers' training	National road safety	When necessary	Formal	Explicit and Tacit
Leakage detection	Planning, GIS/network staff, plumbers	On-job Peer sharing	LWB (zones)	Continuous	Non formal	Tacit
Basics of plumbing	Plumbers	On-job training	LWB (zones)	Continuous	Informal	Tacit
Work delivery and procedures.	All employees	Meetings, committees, peer sharing Performance appraisals,	LWB	Continuous	Informal Non formal	Explicit Tacit Explicit
Induction courses	New employees	Workshops On-job training	LWB	When necessary	Non formal Informal	Explicit Tacit

Key

SM: Senior Managers
DM: Divisional Managers
S : Supervisors
Eng: Engineers
Tech: Technicians
GIS : Geographical Information Systems
HR : Human Resources
HRM: Human Resources Managers

Notes

- Senior Managers are those who head departments in LWB and members of the board of directors.
- Middle Managers include divisional managers and section supervisors.
- The operating core includes, artisans, technicians, clerical staff, assistants, plumbers, drivers, workshop hands and general hands.