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Workplace Learning through Structured Interactions

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This dissertation is submitted in partial fulfilment of the academic requirements
for the degree of
Master of Philosophy in Engineering Management
in the Faculty of Engineering and The Built Environment
University of Cape Town
14 April 2009

Declaration

I declare that this dissertation is my own, unaided work. It is being submitted for the degree of Master of Philosophy in Engineering Management in the University of Cape Town. It has not been submitted before for any degree or examination in any other university.

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Abstract

The past decade has seen a shift in the conceptualization of organisations from *simply places of work* to environments of innovation, performance, and continuous improvement. Learning in the workplace has never been more important than it is today. With the increasingly competitive economy and occupational mobility of individuals, the nature of the workplace is itself changing. Individuals need to keep learning to stay employable and compete in today's job market, and organisations need to keep learning in order to maintain a competitive advantage in the economy.

The workplace is thus being recognised as a legitimate environment for learning new skills and knowledge, through participation in everyday work activities. This recognition has led to numerous studies that connect learning and the workplace, giving rise concepts such as 'the learning organisation', 'organisational learning', 'workplace learning' and 'informal learning'. All of which have created confusion, uncertainty and complexity in understanding how learning takes place. In order to understand how individuals learn in the workplace, and thus understand how organisations can enhance such learning, this study investigates individuals' perceptions of their workplace as a learning environment and their experiences of learning through participation in work activities.

The study adopted an iterative research strategy in which grounded theory perspectives guided data collection and analysis. Research observations were conducted and a total of nineteen participants with varying years of work experience were interviewed. Interviews were composed of two parts: a semi-structured component and a focused component (adopting the repertory grid technique).

From a grounded theory analysis of data, Structured Interactions emerged as the core category in understanding how individuals learn in the workplace, along with six super categories: Recognition, Feedback, Planning, Support, Understanding of Work Context and, Taking Initiative to Interact. Participation in Structured Interactions answers how individuals learn through every-day work activities. Four key workplace learning mechanisms (Recognition, Feedback, Planning, and Support) emerged as enablers of Structured Interactions. This study found that the four workplace learning mechanisms not only enable Structured Interactions to take place, but also result in individuals taking initiative to interact with each other in Structured Interactions and improve their understanding of each other's work context. Using the qualities of Structured Interactions that emerged from the investigation, this study links participation in work activities with concepts of conversation and learning.

The results from this investigation not only contribute to the research community in the area of learning in the workplace, but also offer practical insight into establishing a learning system for the workplace.

Acknowledgements

Completion of this dissertation would not have been possible without a number of people that I am blessed to have around me.

First and foremost I would like to thank my family for their endless love and support. A special thanks to my sister, who stood by me and took the responsibility of financing this master's degree. Mishnah, I thank you for your all your love and support throughout my studies at the University of Cape Town.

I was most fortunate in this study to have Corrinne Shaw and Brandon Collier-Reed as my supervisors, who took the time to engage with my work over the past year. I have treasured your support throughout my journey as a newcomer to the world of qualitative research. You provided me with opportunities to test my ideas, make mistakes, and allowed me the freedom to develop my own research style. For all this, I thank you both sincerely.

I would like to thank all my friends for their support and encouragement. My fellow engineer and friend Priya deserves a special mention. Thank you for the ongoing support that you have always expressed in thought and deed.

Finally, I would like to acknowledge the various professional engineers that participated in this study. I thank you for giving so generously of your time and sharing your understandings and experiences about learning within workplace environments.

Table of Contents

DECLARATION	I
ABSTRACT	II
ACKNOWLEDGEMENTS.....	III
TABLE OF CONTENTS	IV
LIST OF FIGURES	VII
LIST OF TABLES	VIII
1 INTRODUCTION	1
1.1 The need for Learning in the Workplace.....	1
1.2 Learning, Work and the Workplace	2
1.3 The Focus and Objectives of this Research	4
1.4 The structure of the dissertation	5
2 LITERATURE REVIEW.....	7
2.1 Introduction.....	7
2.2 Organisational Learning, Learning Organisations and Workplace Learning.....	8
2.2.1 <i>Organisational Learning vs. the Learning Organisation</i>	8
2.2.2 <i>Connecting Workplace Learning to Organisational Learning</i>	9
2.3 Importance of Learning in the Workplace	10
2.4 Types of Learning in the Workplace.....	12
2.4.1 <i>Formal vs. Informal Learning</i>	12
2.4.2 <i>Informal Learning: Concerns and consequences</i>	15
2.5 The Learning Process.....	16
2.5.1 <i>The Acquisition Metaphor and Standard Paradigm of Learning</i>	17
2.5.2 <i>The Participation Metaphor and Emerging Paradigm of learning</i>	18
2.5.3 <i>The Inquiry Metaphor and the ‘third way’ of Workplace Learning</i>	21
2.6 Chapter Summary.....	28
3 METHODOLOGY.....	29
3.1 Introduction.....	29
3.2 Addressing questions of strategy	29
3.3 Research and the question of paradigm	31
3.4 Qualitative Research: Characteristics and Assumptions.....	32

3.5	Grounded Theory Principles.....	33
3.6	Gathering Rich Data	35
3.6.1	<i>Research Interviews</i>	35
3.6.2	<i>Observation</i>	38
3.7	Data Analysis: Drawing on Grounded Theory Principles	38
3.7.1	<i>Coding in Grounded Theory Practice</i>	39
3.7.2	<i>Theoretical Memos</i>	41
3.7.3	<i>Theoretical Sampling</i>	42
3.7.4	<i>Theoretical Saturation</i>	42
3.7.5	<i>Theoretical Sorting and Integration</i>	42
3.8	Framework to ensure the Study's Rigour	42
3.8.1	<i>Framework for Trustworthiness</i>	43
3.9	Chapter Summary.....	44
4	METHODS.....	45
4.1	Introduction.....	45
4.2	Research Strategy.....	45
4.3	Approach to Data Collection	45
4.3.1	<i>Sampling: site and participant selection</i>	47
4.3.2	<i>The Research Interview</i>	49
4.3.3	<i>Research Observation Strategy</i>	58
4.4	Approach to Data Analysis	59
4.5	Ensuring Trustworthiness.....	62
4.5.1	<i>Credibility of findings and interpretation</i>	63
4.5.2	<i>Transferability of the inquiry's findings</i>	64
4.5.3	<i>Dependability and Confirmability</i>	64
4.6	Chapter Summary.....	64
5	RESULTS	65
5.1	Introduction.....	65
5.2	The Research Context	65
5.2.1	<i>Team Work</i>	66
5.2.2	<i>Goal Driven Environment</i>	67
5.2.3	<i>Continuous Improvement and Innovation</i>	67

5.3	Presenting Findings of the Grounded Theory Analysis	68
5.4	Introduction of Categories	70
5.5	Super Categories	71
5.5.1	<i>Factors that Influence Learning</i>	71
5.5.2	<i>Nature of the Workplace</i>	78
5.5.3	<i>Summary of Super Categories</i>	82
5.6	Core Category – Structured Interaction.....	83
5.6.1	<i>Qualities of a Structured Interaction</i>	83
5.6.2	<i>Relationships and Interactions</i>	90
5.7	Grounded Workplace Learning Theory	91
5.7.1	<i>Definition of Categories</i>	91
5.7.2	<i>Model for Workplace Learning</i>	92
5.8	Chapter Summary.....	93
6	DISCUSSION AND CONCLUDING REMARKS.....	94
6.1	Introduction.....	94
6.2	Relating the Research Questions to the Emerging Theory	94
6.3	Learning through Structured Interactions	95
6.3.1	<i>Introducing Progressive Learning</i>	95
6.3.2	<i>Structured Interactions and Strategic Conversations</i>	98
6.4	Possibilities for Further Research.....	100
6.5	Concluding Remarks.....	101
	REFERENCES	102
	APPENDIX A	115
	A 1: Invitation to Participate in Research Study	115
	A 2: Sample Interview Transcript	116
	A3: Transcriber Service Contract.....	144
	APPENDIX B.....	145
	<i>B1: Understanding the Viable System Model</i>	145
	<i>B2: Variety and the Viable System Model</i>	146
	<i>B3: Recursion and the Viable System Model</i>	146
	<i>B4: Presenting the Viable WPL System</i>	147

List of Figures

Figure 2.1: Thematic Structure of Chapter 2.	7
Figure 2.2: Examples of WPL Studies.	11
Figure 2.3: Types of Workplace Learning - Adapted from Stern & Sommerlad, 1999, p. 2. ...	12
Figure 2.4: Standard Paradigm of Learning.	17
Figure 2.5: Emerging Paradigm of Learning.	19
Figure 2.6: The 'third way' of Learning.	26
Figure 2.7: Learning through 'inquiry' and 'experience'.	27
Figure 3.1: Research Considerations - Adapted from Mason, 2002, pp. 14-21.	29
Figure 3.2: Main Features of Qualitative Research - Adapted from Woods, 1999, p. 3.	33
Figure 3.3: Relationship between Data Gathering and Analysis.	39
Figure 3.4: Five key principles of Grounded Theory.	39
Figure 4.1: Iterative Research Design.	46
Figure 4.2: Research Study Phases.	47
Figure 4.3: Research Interview Process.	51
Figure 4.4: Example of element card.	54
Figure 4.5: Laddering Technique.	55
Figure 4.6: Example of construct card.	56
Figure 4.7: Example of construct card used during rating.	57
Figure 4.8: Theory building process.	59
Figure 5.1: Overview of Findings.	70
Figure 5.2: Factors that Influence Learning.	71
Figure 5.3: Relation between Taking Initiative to Interact and other categories.	76
Figure 5.4: Relation between Understanding of Work Context and other categories.	77
Figure 5.5: Nature of the workplace.	79
Figure 5.6: Qualities of Structured Interaction.	83
Figure 5.7: Interrelation between Core Category & Super Categories.	90
Figure 5.8: Relationships and Structured Interactions.	90
Figure 5.9: Workplace Learning Theory Emerging from this Study.	93
Figure 6.1: Research Questions and Answers.	94
Figure 6.2: Qualities of Structured Interaction.	99
Figure B.1: Components of VSM - Adapted from Bustard, Sterritt, & Taleb-Bendiab, 2006; Walker, 2006.	145
Figure B.2: Triple recursion with System-in-Focus.	147
Figure B.3: Viable Workplace Learning System.	148
Figure B.4: Strategic and operational functionality of four WPL mechanisms.	149
Figure B.5: Operational Unit S1.	149

List of Tables

Table 2.1: Informal Workplace Learning vs. On-the-job Training - From Hager, 1998, p. 40.	13
Table 2.2: Typology of Informal Learning - Adapted from Eraut, 2000, p. 116.....	14
Table 2.3: Difference between the 'first way' and 'second way' - Adapted from Elkjaer, 2004a, p. 430.	22
Table 2.4: The 'third way' - Adapted from Elkjaer, 2004a, p. 430.	26
Table 3.1: Key Assumptions of Personal Construct Theory.	36
Table 4.1: Research Participant Information.	49
Table 4.2: Overview of Key Areas for Semi-structured Interview Component.	52
Table 4.3: Example of key-point coding.....	60
Table 4.4: Demonstrating Trustworthiness.	63
Table 5.1: Key to read Concept Diagrams.....	69
Table 5.2: Key to read Colour Coded Data.....	69
Table 5.3: Explanation of how to read 4D Definition.	69
Table 5.4: Emergence of Super Categories.....	82
Table 5.5: Table of Definitions of Core Category and Super Categories.	91

1 Introduction

"In times of change, learners will inherit the earth, while the learned will find themselves beautifully equipped to deal with a world that no longer exists"

Eric Hoffer (1902–1983) American social philosopher and writer

Learning in the workplace has never been more important than it is today. With the increasingly competitive economy and occupational mobility of individuals, the nature of the workplace is itself changing. Work activities are continually challenging employees to expand their knowledge and skills. Individuals need to keep learning to stay employable and compete in today's job market; and organisations need to keep learning in order to maintain a competitive advantage in the economy.

The work presented in this dissertation seeks to understand how individuals learn in the workplace and how organisations facilitate such learning. This chapter presents the background to the research. It discusses the concerns that lead to the investigation, and describes the focus and research questions of the study. It concludes by presenting an outline of the chapters that follow.

1.1 The need for Learning in the Workplace

The past decade has seen a remarkable shift in the conceptualization of organisations from *simply places of work* to environments of innovation, performance, and continuous improvement. The concept of lifelong learning and facilitating learning at work has been established as central to this shift in conceptualization and has received interest from many quarters, including organisations, researchers, and workers themselves (see for example Collin, 2006).

According to Illeris (2003), the background to these changes is found in international and societal developments, which are associated with terms such as 'the knowledge society' and 'globalization'. Lee et al. (2004) support this claim and argue that advances in technology and the growth of service sector industries have contributed to the changes in the meaning of the 'workplace'. With the workplace now being acknowledged as a site for learning, its effectiveness as a learning environment is also receiving great interest in the literature (Boud, 1998; Billet, 2000; Bryson, Pajo, Ward, & Mallon, 2006; Coetzer, 2007; Collin, 2006; Geertshuis, Holmes, Geertshuis, Clancy, & Bristol, 2002). Learning has been widely recognised as a force behind sustaining and renewing modern enterprises (Boud, 1998). Many commentators agree with this line of thought and in fact suggest that learning within the workplace is directly linked to the survival of organisations (Coetzer, 2007; De Geus, 1988; Garratt, 1999; Pedler, Burgoyne, & Boydell, 1991; Senge, 1990). Schein (1993) suggests that in order to avoid the "economic evolutionary weeding out process" (p. 85),

organisations need the capability to adapt quickly to change, which is achieved by learning faster.

As global economic pressures rise, so do organisations' benchmarks. Achieving performance targets in one year will not suffice for the next year. These factors place tremendous pressure on workers to continually improve their work performance, and thus learn more effectively in work situations. Consequently, there is now more to learn and less time in which to learn it. This backdrop of continual change gives importance to understanding how learning takes place in the context of the workplace, in order to alleviate demands on both worker and organisation.

1.2 Learning, Work and the Workplace

The context of this study is based on the increasing recognition that organisations need to make the workplace an effective learning environment (Billet, 2000; Coetzer, 2007; Collin, 2006; Hong, 1999; Paloniemi, 2006; Smith, 2003), to ensure survival in the competitive and changing economy. This recognition has seen concepts such as 'the learning organisation', 'organisational learning', and 'workplace learning' emerge as distinct areas of inquiry. Although these research areas connect the *workplace* and *learning*, each are driven by different disciplinary backgrounds and commitments (Engestrom & Kerosuo, 2007). As a result, the increasing number of studies in each area has created uncertainty in understanding learning in the workplace and made it difficult to differentiate between *management fads* and *sustainable learning strategies*. For example, Wang and Ahmed (2003) claim that the flood of information and varying perspectives of organisational learning and learning organisations has created confusion about the concepts. Mirvis (1999) even suggests that there is no agreement on how organisations learn and on what learning organisations are. Similarly, Boud (1998) asserts that literature on workplace learning has generated confusion due to differing research intents and focuses. Lindell and Stenstrom (2005) add to this by suggesting that the global use and varying associations of workplace learning adds to this confusion. Furthermore, "even the concepts and language used to discuss and describe workplace learning have undergone considerable contestation and transformation" (Candy & Matthews, 1998, p. 13).

The above factors have created a sense of uncertainty among both practitioners and academics operating within the field of work and learning. Nonetheless, learning in the workplace can take three broad forms: planned learning out of the workplace, planned learning within the workplace, and learning and working as inextricably related (Stern & Sommerlad, 1999). The first two forms are referred to as *formal learning*. The third form involves everyday learning through work activities and accounts for most of the learning associated with workplace settings (Eraut, 2004; Livingstone & Sawchuk, 2005; Murphy & Young, 1995). Marsick and Watkins (1990) suggest that "people learn in the workplace through interactions with others in their daily work environments" (p. 4). However, there is

little research on how workers learn in this context and how organisations can enhance such learning (Solomon, Boud, & Rooney, 2006). Cross (2007) advocates learning through activities at work and refers to it as 'natural learning'. He suggests:

"Workers learn more in the coffee room than in the classroom. They discover how to do their jobs through informal learning: asking the person in the next cubicle, trial and error, calling the help desk, working with people in the know, and joining the conversation. This is natural learning—learning from others when you feel the need to do so" (p. xix).

Zuboff (1988) adds that at the foundation of today's workforce is its ability to learn. She argues:

"Learning is no longer a separate activity that occurs either before one enters the work-place or in remote classroom settings. Nor is it an activity preserved for a managerial group. The behaviors that define learning and the behaviors that define being productive are one and the same. Learning is not something that requires time out from being engaged in productive activity; learning is the hearth of productive activity. To put it simply, learning is the new form of labor" (p. 395).

If learning is central to work practice and if workers learn more through daily work activities than planned training activities and workshops, then organisations need to pay greater attention to learning in these types of situations. Consequently, a clear understanding of how learning takes place through daily work activities is required. This type of learning is often referred to as *informal learning* in literature and faces challenges similar to those experienced by the concepts of organisational learning, learning organisations, and workplace learning. In Marsick and Watkins (1990) discussion of informal learning, they introduce the concept of *incidental* learning, which is a by-product of daily work activities and interactions. It is considered to be unintentional, while informal learning involves intentional and unintentional learning. On the other hand, Billett (2004) argues against referring to learning in the workplace as incidental. He suggests that learning is fundamental to activities in the workplace, thus it is intentional and structured. In contrast Eraut (2000), who prefers the term 'non-formal' learning, suggests there are three levels of intentionality associated with non-formal learning; 'deliberative learning' which is considered conscious and planned learning, 'implicit learning' in which there is no learning intention and awareness during the learning, and 'reactive learning' which is on the spot unplanned learning with varying level of intentionality (2000, p. 115).

While some commentators use terms such as formal, informal, non-formal and unintentional, others reject such vocabulary (Billett, 2002; Colley, Hodkinson, & Malcolm, 2003). Defining informal learning "by what it is not – formal" (Colley, Hodkinson, & Malcolm, 2002, p. 2) is problematic and does not assist in understanding the phenomenon (Billett, 2002). Even when the concept of informal learning is accepted, there is disagreement over its value in workplace settings. Rainbird et al. (2004) suggest far too much privilege has been given to informal learning. In contrast, Beckett and Hager (2002) argue that informal

learning plays a more important role in workers' learning than its counterpart, formal learning.

Another important perspective to learning is Lave and Wenger's (1991) conceptualisation of learning as the normal outcome of social practice. Reynolds et al. (2002) support this conceptualisation and suggest that it is particularly important in workplace situations. This is because the majority of the tasks and activities in organisational settings take place by interacting with colleagues, team members, clients, consultants and suppliers. Even individual tasks involve social interaction, since people communicate with others to elicit instructions, share ideas and implement solutions, all of which shape the individual's action and learning. However, understanding how learning takes place through participation in activities at work poses constraints for researchers, as it gives rise to unique methodological challenges.

The factors presented above have created confusion, uncertainty and complexity in understanding how learning takes place through daily work activities. A failure to achieve this understanding raises concerns about the organisation's ability to enhance such learning. This concern is central to the research conducted in this study, and leads to a discussion on the focus and objectives of this dissertation.

1.3 The Focus and Objectives of this Research

The primary objective of this research is to better understand how organisations can enhance workers learning. This chapter has highlighted the considerable literature on how organisations and workers learn. However, it has also drawn attention to the confusion surrounding these areas. One thing is clear and that is work activities involve interaction among co-workers. Therefore, there is a need to understand the learning experiences of workers as they go about their daily work activities.

Given the objective of the research, the investigation serves to answer the following research questions:

RQ 1: How do individuals learn in the workplace?

RQ 2: How can the organisation facilitate workplace learning?

To address these questions, this dissertation focuses on understanding individuals' experiences of learning within the context of their workplace and work activities. In particular, it focuses on:

- ❖ Individuals' perception of their workplace as a learning environment; and
- ❖ Individuals' perception of their learning experiences in participating in work activities and interacting with co-workers.

The above points of focus help to answer RQ 1, which in turn helps to answer RQ 2. The research questions enabled the investigation of the experiences of 19 workers about how they learn through interaction. The researcher elected to concentrate the investigation on the learning of professional engineers. The reason for this is twofold: firstly, being an engineer, the researcher was especially interested in how engineers learn in the workplace and how such learning can be fostered. Secondly, this study was conducted in South Africa, where there is a substantial shortage of skills in the engineering sector (Department of Labour, 2008). This concern has been described by the South Africa Department of Labour as “one of the worst capacity and scarce skills crises in years” (p. 1). The researcher felt that focusing on engineering participants in this study would not only serve to satisfy her curiosity on how engineers learn in the workplace, but further the discussion in addressing South Africa’s engineering skills crisis.

The results from the empirical investigation of the research questions not only contribute to the research community in the area of learning in the workplace, but also serve to inform practice in the field.

1.4 The structure of the dissertation

This chapter introduces the dissertation and provides the motivation for answering the proposed research questions. An outline of the structure of this dissertation is presented below.

Chapter 2 presents a review of areas of literature that provide the background to this research. These are the literature related to workplace learning, informal learning, and the learning process which draws on three main paradigms for learning. First, it positions workplace learning amongst the concepts of learning organisation and organisational learning. Secondly, it describes the importance of learning within the workplace for both individual and organisation. The following section describes the types of workplace learning, focusing on informal learning through participation in work activities. The final section examines the learning process, that is, how learning takes place in the workplace.

Chapter 3 outlines the methodological approach of this study and highlights the research paradigm considerations guiding the research process. It presents the rationale for using a qualitative approach and more specifically, grounded theory principles. Particular attention is given to the issues of rigour surrounding the overall research process and role of evaluative criteria to resolve concerns of quality and trustworthiness of this study.

Chapter 4 links the methodology to the research strategy of this study. It first highlights the overall research strategy. This is followed by a description of the approach to data collection, describing the sampling and observation strategy employed, and the use of Repertory Grid principles for research interviews. Next, it illustrates how the researcher conducted data analysis using the grounded theory perspectives introduced in Chapter 3.

The final section discusses how rigour was ensured throughout the investigation and provides an audit trail to demonstrate trustworthiness of the study.

Chapter 5 presents the results of the grounded theory analysis of data collected using the methods developed in the previous chapter. The first section describes the context of this inquiry. Next, keys for reading the results in the chapter are presented. This is followed by an introduction of the categories that emerged from data analysis, which serves to provide an overview of all the results generated in this study. The next two sections provide detailed discussions of the emerging super categories and core category, respectively. Lastly, the grounded theory of workplace learning within the particular context is described, combining the super categories and core category in this study. The theory is presented in the form of a causal model.

Chapter 6 is the final chapter in this dissertation. It begins by relating the research questions to the emerging theory in this study. The following two sections discuss the results presented in Chapter 5 in the context of the literature discussed in Chapter 2 and other relevant literature. The chapter concludes by presenting possibilities for further research, followed by concluding remarks.

2 Literature Review

2.1 Introduction

This study investigates *how individuals learn in the workplace* and *how organisations facilitate workplace learning* and therefore requires a clear understanding of *what* workplace learning is and *how* it takes place. Chapter 2 builds this understanding by first positioning workplace learning in relation to the concepts of learning organisation and organisational learning. Next, it discusses the various motives for learning within the workplace, from both the individual and organisation perspective. This is followed by a description of the types of workplace learning. Finally, the learning process, that is, how learning takes place in the workplace is discussed. Figure 2.1 illustrates the thematic structure of Chapter 2.

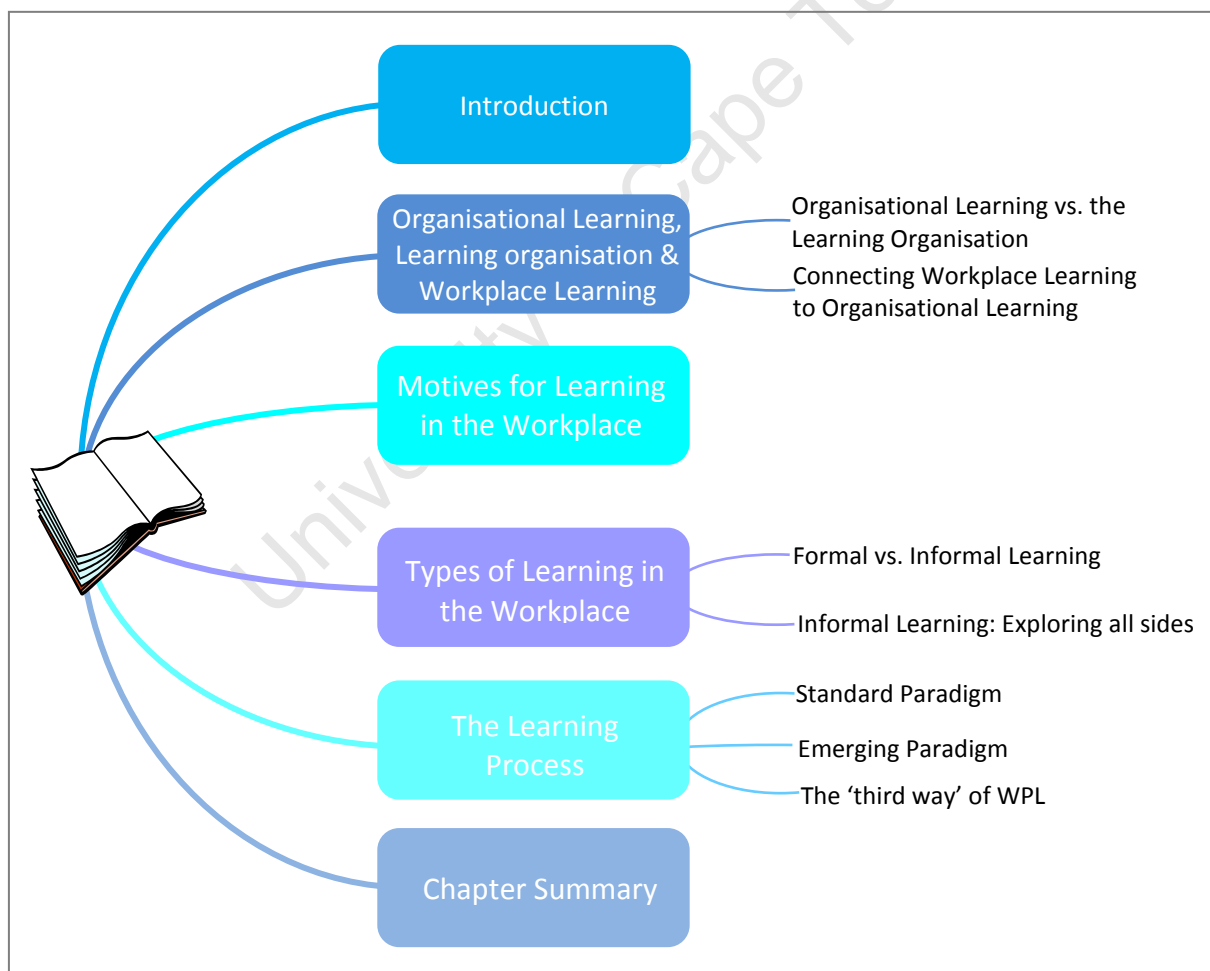


Figure 2.1: Thematic Structure of Chapter 2.

2.2 Organisational Learning, Learning Organisations and Workplace Learning

This dissertation focuses on learning in the workplace. The terms workplace *learning*, organisational *learning* and *the learning* organisation, have all been used in relation to this context and thus the connection between the three must be developed. Furthermore, the multiple ways that these terms have been used requires that their differences be clarified. This section will briefly differentiate between the three terms and illustrate the relationships between them.

2.2.1 Organisational Learning vs. the Learning Organisation

According to Garratt (1999) the concepts of Organisational Learning (OL) and the Learning Organisation (LO) can be traced back to specific perspectives of management research, prior to their rise in popularity in the 1980s. Since then, numerous authors have used the terms LO and OL interchangeably (see for example Fulmer, Gibbs, & Keys, 1998; Hawkins, 1994; Levitt & March, 1988; Nevis, DiBella, & Gould, 1995; Preskill & Torres, 1999), making them difficult to understand.

Argyris (1977) described OL as the "detection and correction of errors", where errors are "any feature of knowledge and knowing that inhibits learning" (p.116). Senge (1990) describes the LO as an environment in which "people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p. 3). Besides the above definitions, many others can be found in literature (for OL see Bechtel, 1993; Dodgson, 1993; Fiol & Lyles, 1985; Lyles, 1988; Lyles, 1994 and for LO see Mayo & Lank, 1994; Pedler, Burgoyne, & Boydell, 1991; Tsang, 1997; Watkins & Marsick, 1992). With the array of descriptions and definitions of OL and LO, some commentators have attempted to clarify the terms by summarizing key aspects of varying definitions (see for example Huysman, 1999).

Matlay (2000) argues that whilst many definitions exist, they are not conceptually different. Instead, he suggests that the majority appear to be complementary. Ortenblad (2001) describes literature differentiating between OL and LO as being mutually exclusive. He adds that one of the most common ways to distinguish between the two is that OL refers to activities or a process of learning within organisations, whilst LO is a form of an organisation. This view is supported by Armstrong and Foley (2003), with the quote, "OL is the means, and LO is the end" (p. 74). OL therefore encompasses the processes and activities taking place within the LO (Jones & Hendry, 1994) and the LO is a type of organisation in which learning activities and processes are regarded as being important (Easterby-Smith, 1997; Ortenblad, 2001). Tsang (1997) adds to the debate by suggesting OL is a descriptive approach, whilst LO is a prescriptive approach. It is believed that the concept of a LO should

not be understood as a specific structure, but instead a metaphor (Drew & Smith, 1995). This idea is supported by Tsang (1997), who labels the LO as an “ideal” (p. 81).

It is clear that the existing literature on OL and LO presents a multiplicity of perspectives (Garavan, 1997), caused by varying motives and contexts of different authors and their research studies. Easterby-Smith and Araujo (1999) suggest that commentators of OL are interested in “understanding the nature and processes of learning (and unlearning) within organisations” (p. 8). While those concerned with LO focus on “the development of normative models and methodologies for creating change in the direction of improved learning processes” (p. 8).

It is argued that the view of *means* (OL) *to an ends* (LO), as suggested by Armstrong and Foley (2003), encapsulates the most useful definition of these two constructs and will form the basis for further development below.

2.2.2 Connecting Workplace Learning to Organisational Learning

The concept of ‘workplace learning’, hereafter referred to as WPL, is regarded as a “complex and multifaceted” research area (Boud, 1998, p. 6). Boud describes it as an area of “intersecting interests, contested ideas, multiple forms of writing and rapidly evolving practice” (1998, p. 11). Such conditions have led to numerous descriptions and understandings of the concept (see for example Cunningham, 1998; Levy, 1987; Mansfield, 1991; Marsick, 1987; Wakins & Marsiel, 1993; Sutherland, 1998). Like the concepts of OL and LO, WPL has been investigated and interpreted in many ways, by many authors and thus has no singular definition. However, Smith (2003) suggests that having a variety of descriptions is constructive, as they provide valuable information into how commentators have explored the field of WPL.

Despite the variety in the work undertaken in the area, it is clear that studies on WPL and OL share a fundamental overarching goal: to better understand and develop the LO. For example, studies on WPL have focused on: developing a holistic model for WPL (Illeris, 2004); accelerating team learning in new product development teams (Lynn, Akgun, & Keskin, 2003); examining WPL strategies, learning facilitators and barriers (Hicks, Bagg, Doyle, & Young, 2007); investigating learning through the various individual and social processes which take place in the workplace (Collin, 2006); how employees perceive their workplaces as learning environments (Coetzer, 2007); designing the workplace for learning and innovation (Van der Sluis, 2004); and exploring individual and collective workplace learning in the contemporary industrial work (Kira & Frieling, 2005) . Each of these studies aims to develop the workplace as a site for learning, for outcomes such as increased competitiveness, innovative capacity and professional development.

If both WPL and OL serve as the *means to an end* (in developing a LO), then what are their differences? Moreover, why do some authors focus on WPL, whilst others on OL? Engestrom and Kerosuo (2007) argue that WPL and OL have emerged from different

“disciplinary backgrounds” and “commitments” (p. 336). They suggest that WPL branched from the area of educational research, which historically focused on institutionalized learning - whereas OL has its origin rooted in organisational and management research, which focuses on issues of organisational renewal, competitiveness and knowledge formation. Such differences in origin have obvious implications for the motives and commitment of research in WPL and OL. On the one hand, studies on WPL generally intend to improve learning practices and conditions in the workplace, while OL research intends to satisfy management interests of improving work performance.

Engestrom and Kerosuo (2007) present the difference between WPL and OL with an insightful analogy, “the divide between workplace learning and organisational learning has resemblances to the classic divides between micro and macro, between agency and structure” (p. 336). However, such differences in intent are not exclusive to each area of inquiry. A reason for this could be the flexibility with which each term is used, understood and interchanged in discussion. Nonetheless, it is clear that these two motives appear to be the most common for research exploring ‘learning’ within ‘work settings’ (here implying the workplace or organisation). Additionally, the emphasis on each varies from one study to another, depending on the author’s perspective, interest, and vocabulary.

The next section discusses varying motives for workplace learning and addresses both questions of ‘why organisations learn’ and ‘why individuals learn’ in workplace settings.

2.3 Importance of Learning in the Workplace

Thus far, an overview of the importance of improving learning within the workplace has been presented. However, considerable variation in literature investigating the phenomenon of learning within the workplace has also surfaced. Studies on WPL have been directed towards a variety of sectors and professions and are approached from vastly different disciplinary backgrounds (see Figure 2.2). Additionally, WPL has been explored using various conceptual frameworks including, behaviourist, cognitive and social learning. As a result, WPL has acquired a number of definitions and thus understandings and models.

The reasons for the interest in learning within workplace and organisational settings are often categorised according to the benefactors of such learning, namely the *individual* and the *organisation*. Lee et al. (2004) report that WPL is generally viewed and promoted as being positive for all parties. The individual employee benefits from learning through advancement of their knowledge and skills, which are needed for their work role (Collin, 2006) and it is hoped that improving employee learning opportunities will yield increased productivity (see for example Khandeka & Sharma, 2006) and innovation (see for example Van der Sluis, 2004). As indicated previously, notions of survival and competitive advantage (De Geus, 1998) are additional reasons for advancing employee learning from the organisation’s point of view i.e. Senge (1990) asserts that organisations must continuously learn in order to benefit from emerging opportunities. Some go as far as to suggest that the

ability to learn faster than competitors is crucial not only for the organisation's success, but also its survival (De Geus, 1998).

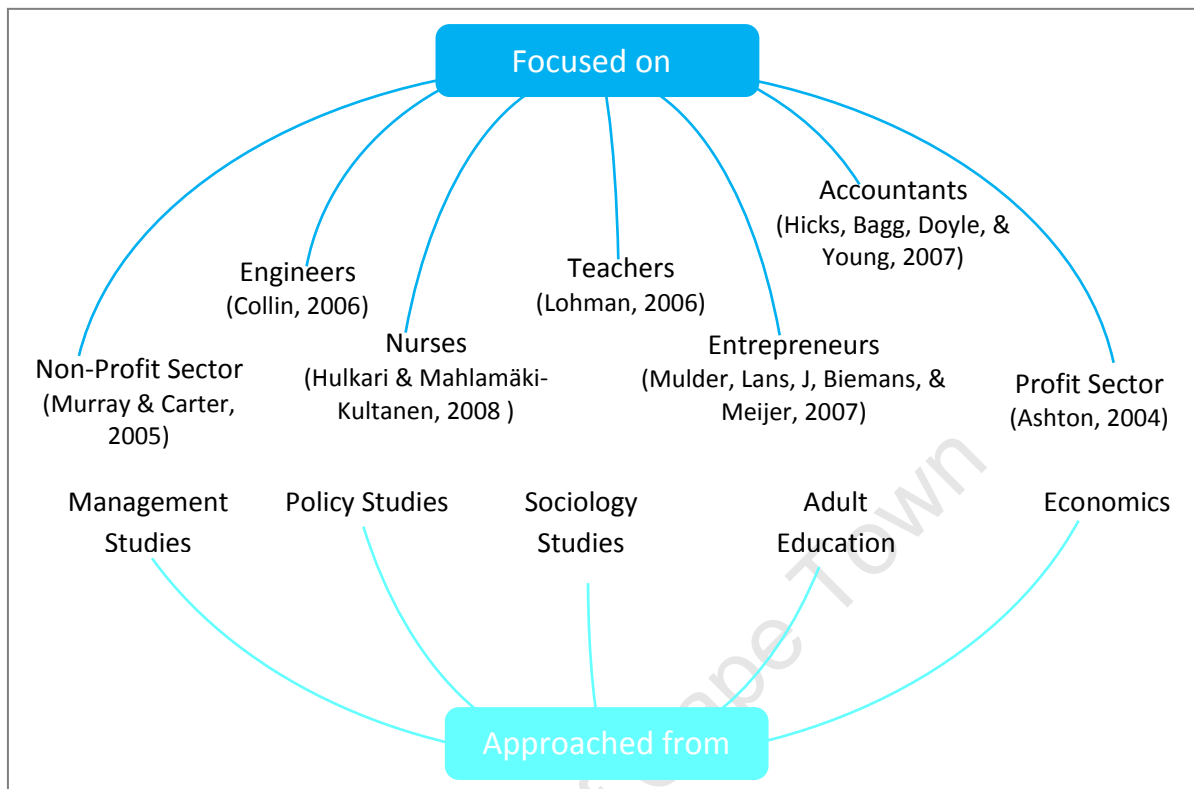


Figure 2.2: Examples of WPL Studies.

From the individual's point of view, learning is associated with personal fulfilment, and career progression (Collin, 2006). Matthews (1999) suggests that employees' in search of increased job satisfaction are generally eager to get involved in activities in the workplace that lead to learning. She adds that an increase in job satisfaction can in turn increase job commitment and performance. However, she warns that the organisation must remain sensitive to the pressures associated with WPL; otherwise it could become a source of dissatisfaction instead of fulfilment. Learning within the workplace promotes lifelong learning for the individual (Boud, 1998; Lindell & Stenstrom, 2005) and increases their chance of staying within the organisation (Mitchell, Holtom, Lee, Sablinski, & Erez, 2001).

In summary, there are clearly a variety of motives for WPL. To make workplaces successful learning environments, the interests of each party need to be fulfilled. That is, such interests need to be seen as complementary, rather than fundamentally different. Furthermore, just because learning opportunities are made available does not mean that employees will engage or make use of them. The organisation needs to foster an environment in which individuals feel that it is advantageous to participate in learning related activities. That is perhaps the only way for organisations to ensure their sustainability in today's competitive marketplace.

2.4 Types of Learning in the Workplace

There are a great number of lenses through which WPL has been viewed and understood. Stern and Sommerlad (1999) suggest that this has created 'elasticity' in the use of the term WPL and the types of WPL. However, they argue that WPL takes place in three broad forms (see Figure 2.3).

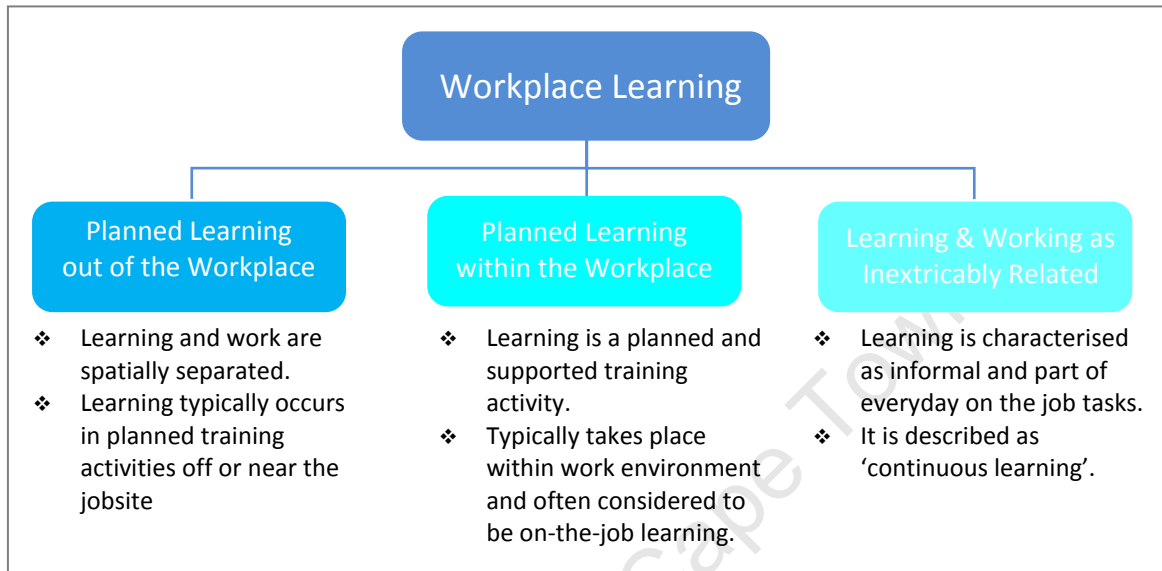


Figure 2.3: Types of Workplace Learning - Adapted from Stern & Sommerlad, 1999, p. 2.

The third form of learning encapsulates the concept of 'informal' learning, which is considered to constitute most of the learning associated with workplace settings (Eraut, 2004; Livingstone & Sawchuk, 2005; Murphy & Young, 1995). Informal learning encompasses approaches such as career development and planning (Cofer, 2000), team work (Macneil, 2001), observation (Lohman, 2006) and learning by practice (Hara, 2001).

2.4.1 Formal vs. Informal Learning

Marsick and Watkins (1990) offer a theory of *informal learning*, where the concepts of experience and reflection play a major role. *Formal* learning is learning that is planned, structured under the instructor's control and associated with terms such as education and training (Wexley & Baldwin, 1986). In contrast, *informal* learning is under the learner's control and generally doesn't take place within classroom type environments. It can however be planned or unplanned. In their analysis, Marsick and Watkins (1990) not only discuss general aspects of informal learning, but introduce *incidental* learning, which they argue is a secondary result or by-product of general work activities and interactions. It is considered to be unintentional learning, while informal learning involves intentional and unintentional learning. Both informal and incidental learning encompass "learning from experience, learning by doing, continuous learning for continuous improvement, accidental learning, self-managed learning or the learning organisation" (p. 287).

Hager (1998) presents principles for distinguishing between informal workplace learning and its counterpart, formal on-the-job learning. Table 2.1 presents the contrasts between the two.

Table 2.1: Informal Workplace Learning vs. On-the-job Training - From Hager, 1998, p. 40.

Informal workplace learning	On-the-job training
learners in control	trainers in control
often unplanned	planned
no formal curriculum	formal curriculum
no prescribed outcomes	prescribed outcomes
learning outcomes unpredictable	learning outcomes predictable
learning often implicit or tacit	learning largely explicit
emphasis on learning and the content of training	emphasis on training and the learner
learning often collaborative and/or collegial	focus on individual learning
learning is highly contextualised	training is partly contextualised
learning as seamless know how	learning as knowledge to be applied in practice
learning as development of competence or capability with no knowledge/skills distinction	learning knowledge seen as more difficult than learning skills

Hager presents these principles as discrete, for example, he suggests that informal WPL has “no prescribed outcomes”. This does not take into consideration the possibility of how conscious the employee is about his/her learning. Being more conscious about ones learning would imply more active strategies for learning, including setting personal learning outcomes. Hager’s principles also do not consider the influence of the nature of the work context. With workplaces placing more importance on informal learning (Bryson, Pajo, Ward, & Mallon, 2006) greater provisions are being made to structure employee activities such that they have greater access to informal learning opportunities. This logic also extends to other principles listed in Table 2.1, such as informal learning being “unpredictable”, since workplaces are becoming more sensitive to the importance of informal learning, and thus employing strategies to make their work practices more conducive to it.

Eraut (2000) takes issue with the term ‘informal’, noting that “it is associated with so many other features of a situation – dress, discourse, behavior, dimension of social differences, etc. – thus its colloquial application as a descriptor of learning contexts may have little to do with learning per se” (p. 114). Instead he prefers to use the term ‘non-formal’. Like Watkins and Marsick, he distinguishes the types of informal or non-formal learning in the workplace according to the degree of the learner’s *intention* to learn. However, unlike Watkins and Marsick’s two level (informal and incidental) distinction, he offers a three level classification of intentionality. These are:

- ❖ ‘Deliberative learning’ – considered conscious and planned learning.

- ❖ 'Implicit learning' – where there is no learning intention and awareness during the learning.
 - ❖ 'Reactive learning' – on the spot unplanned learning with varying level of intentionality.
- (Eraut, 2000, p. 115)

The third dimension added by Eraut, reactive learning, resides between deliberative and implicit learning. It addresses learning that occurs in response to unplanned circumstances as they arise (Eraut, 2000). Here the *time* of the event (which leads to learning) is explored and combined with the level of the learner's intention to develop a 'typology' of informal learning. This typology as developed by Eraut is shown in Table 2.2:

Table 2.2: Typology of Informal Learning - Adapted from Eraut, 2000, p. 116.

Time of Stimulus:	Implicit Learning	Reactive Learning	Deliberative Learning
Past Episode(s)	Implicit linkage of past memories with current experience.	Brief near-spontaneous reflection on past episodes communications, events, experiences.	Review of past actions, communications, events, experiences. More systematic reflection.
Current Experience	A selection from experience enters the memory.	Incidental noting of facts, opinions, impressions, ideas Recognition of learning opportunities	Engagement in decision-making, problem-solving, planned informal learning.
Future Behaviour	Unconscious effects of previous experiences.	Being prepared for emergent learning opportunities.	'Planned learning goals and opportunities.

Eraut's typology is useful as it provides a more detailed view of informal learning. According to Eraut both planned activities and participation in analytical-type activities constitute deliberative learning. He makes an interesting point that even if an "emergent strategy" is used in setting learning objectives, it does not prevent the learning from being deliberative, rather than reactive (p. 116). This is particularly significant, as it further clarifies three related concepts; the recognition of learning opportunities, the actual learning activity, and the employee's intention to learn. That is, the employee's recognition of learning can be reactive, while intention to learn and learning activity can be deliberative.

From the above table it would appear that Eraut utilizes a 'learning as acquisition' approach. Lee et al. (2004) offer a sociological interpretation of reactive learning. They suggest that this type of learning (which they refer to as mode) is about more than just the timing of a learning stimulus. Instead, it involves "narrative work where learning in that mode may be 'retrospective' or 'hypothetical' learning, achieved through a series of interwoven narratives concerning: the self, biographical history, and work experiences and practices" (p. 17-18).

Despite the differing terms used, there appears to be agreement that the degree of intentionality helps to differentiate between the types of learning taking place in the work environment. Marsick and Watkins (1990) suggest that whilst some learning takes place in formal and structured settings such as on-the-job and off-the-job, most of it is incidental learning which occurs during everyday productive activity. In contrast, Billett (2004) argues that most WPL is not incidental. Instead, it is fundamental to activities in an organisation and as a result, intentional and structured. It is important to point out that while most commentators use terms such as formal, informal, non-formal and unintentional to describe WPL, others reject the notion of using such vocabulary (Billett, 2001; Billett, 2002; Colley, Hodkinson, & Malcolm, 2003). Defining informal learning “by what it is not – formal” (Colley, Hodkinson, & Malcolm, 2002, p. 2) is problematic and does not assist in understanding the phenomenon (Billett, 2002). Billett goes as far as to suggest “describing workplaces as ‘informal’ learning environments is negative, inaccurate and ill-focused” (2002, p. 57).

Considering informal and formal learning as “fundamentally separate” produces “stereotyping and a tendency for the advocates of one to see only the weaknesses of the other” (Colley, Hodkinson, & Malcolm, 2002, p. 1). Instead, Colley et al. suggest that learning should be described using attributes of ‘informality’ and ‘formality’. In addition, Billett argues against describing WPL experiences as ‘unstructured’ or ‘informal’. He succinctly states “rather than being without structure, and without intent, workplace activities are often highly structured” and “rather than being unintentional, the activities of participants in social practices and their learning are often central to their continuity” (Billett, 2002, p. 59). Instead, Billett suggests that focus should be placed on how the ‘norms’, ‘values’, ‘structures’ and ‘practices’ present in the workplace structure opportunities for learning.

It is clear that many arguments have been made for and against categorising WPL as ‘formal’, ‘informal’, ‘non-formal’, ‘incidental’, ‘unstructured’ and ‘without intent’. In addition to this, even in cases where ‘formal’ and ‘informal’ descriptors are accepted, there is disagreement over which has greater value in workplace settings. Beckett and Hager (2002) argue that formal learning should not be considered superior to informal learning, whilst Rainbird et al. (2004) suggest far too much privilege has been given to informal learning. In contrast, Malcolm et al. (2003) contend that neither informal nor formal learning should be privileged or deemed superior over the other.

2.4.2 Informal Learning: Concerns and consequences

Although most literature presents informal learning in the workplace in a positive light, another side has been suggested. One criticism is that by placing too much importance on informal learning, the number of formal training opportunities available for employees could be jeopardized (Fuller, Ashton, Felsted, Unwin, Walters, & Quinn, 2003). Another problem is that it raises questions of what constitutes valid knowledge and whose interests it serves (Lee, et al., 2004). Dale and Bell (1999) observe that if the learner does not realize that learning is taking place, it won’t help build their confidence, and incorrect lessons or

habits can unknowingly be learnt. Lee et al. (2004) draw attention to an interesting consequence of informal learning that has been highlighted by other authors (see for example Garrick & Usher, 2000; Solomon, 1999; Usher, 1999). They suggested that informal learning may have an intensifying effect on employees work, as the issue of *constraints imposed on workers* emerge. The processes of informal learning raise matters of “surveillance”, “control” and “governmentality” within workplace contexts. In turn, they influence workers identities and surface power and control dynamics that can create negative work constraints (Lee, et al., 2004, p. 21).

In addition to the above, Lee et al. (2004) summarise other negative associations that have been presented in literature, such as Fenwick’s (2001) assertion that workers lives are turning into “a human resource development project” (p. 12). Based on their analysis of informal learning in the workplace, Lee et al. claim that two significant themes exist:

- ❖ “Workplace contexts may shape individual learning and their opportunities for learning.”
- ❖ “Individual learners are active participants within learning processes at work.”

(Lee, et al., 2004, pp. 22-23)

The above claims suggest that work environments and culture play a major role in shaping employees’ ability to learn at work. Additionally, the second theme leans towards a participatory approach to learning. It is important to note that the negative associations of informal learning are presented here not to discourage its validity as an approach to achieving WPL, but instead to develop a more thorough understanding of the concept. Moreover, by identifying positive and negative views of the phenomenon, a better informed model of WPL can be developed. That is, a model that takes in to consideration and is sensitive to the potential problematic aspects of informal learning can be developed.

From the broad and varying propositions about the nature of informal learning presented in this section, the reasons for the ambiguity surrounding WPL are becoming clearer. However, even though there is no singular accepted term to describe the attributes of informal (or non-formal) learning, the existence of its characteristics and value is acknowledged through the work of many commentators in the field. Although different labels are used to describe the phenomenon, the findings of most studies overlap and suggest that it is an important part of WPL.

The next section presents the learning process involved in WPL. It discusses how learning takes place at an individual level and describes the relationship between the individual and the organisation.

2.5 The Learning Process

Metaphors are defined as “understanding and experiencing one kind of thing in terms of another” (Lakoff & Johnson, 2005, p. 104). When reviewing literature on the learning process, it is not uncommon to find a variety of metaphors to describe the phenomenon.

This section attempts to make sense of *how* learning takes place. The discussion is structured using some of the more dominant *metaphors for learning* present in literature. Sfard (1998) presents the acquisition metaphor and the participation metaphor, which Hager (2004a) refers to as ‘learning as acquisition’ and ‘learning as participation’. Similarly, Beckett and Hager (2002) and Hager (2004b) offer two understandings of learning: the ‘standard paradigm of learning’ and the ‘emerging paradigm of learning’. The following section discusses these two paradigms and their shortcomings, and introduces a third paradigm which may be regarded as a more appropriate way forward.

2.5.1 The Acquisition Metaphor and Standard Paradigm of Learning

The standard paradigm of learning is often referred to as the “common sense” account and describes the “mind as a container” and “knowledge as a type of substance” (Hager, 2004a, p. 24). As a result, the learner is considered as the *object* that will be *taught* and thus *acquire* knowledge. Hager (2004b) suggests that the standard paradigm has three main characteristics: “Focus on mind”, “interiority” and “transparency” (p. 243-244). Figure 2.4 depicts key aspects of this paradigm.

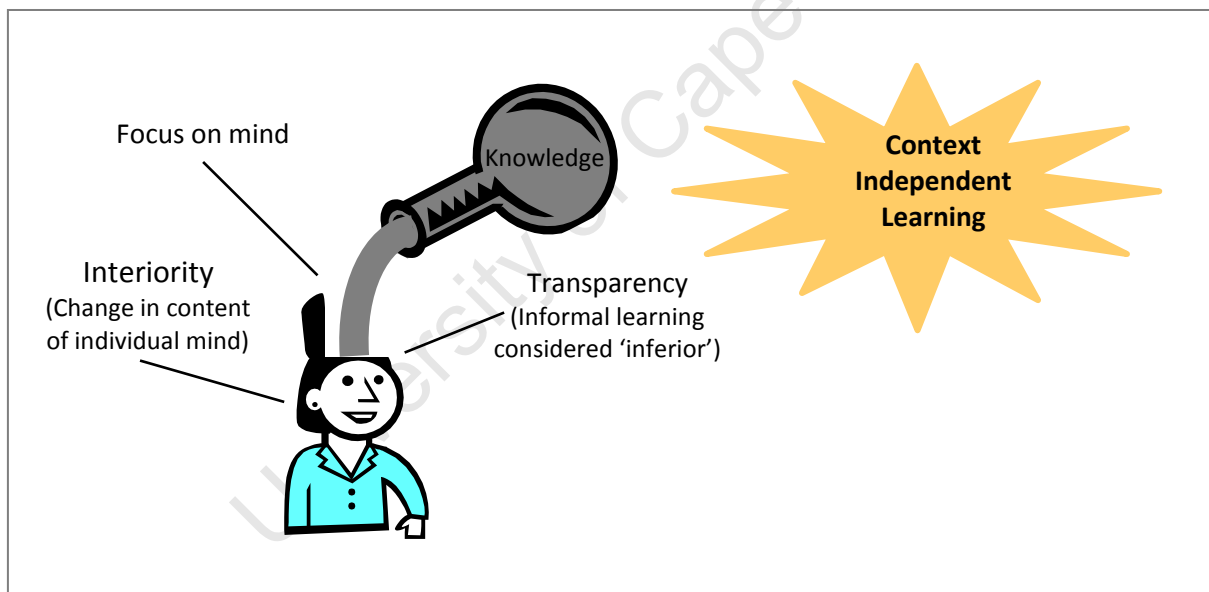


Figure 2.4: Standard Paradigm of Learning.

These three characteristics suggest that learning is unaffected by the context in which it occurs. Knowledge is considered as a “commodity”, that can be “applied” and “transferred (to a different context)” once it has been acquired by the individual (Sfard, 1998, p. 6). This places skills, context dependent learning, and tacit knowledge as “inferior types of learning” under this learning paradigm (Hager, 2004b, p. 250). This means formal learning is considered superior to *informal* or *non-formal* learning (which is a major part of WPL). This approach of learning identifies the individual as the basic unit of analysis (Hakkarainen, Palonen, Paavola, & Lehtinen, 2004; Paavola & Hakkarainen, 2005). Organisations are viewed as *systems* and individuals learn *on behalf* of the system (see for example Senge,

1990). Elkjaer (2003a) suggests that learning within organisations under this paradigm is identical to the enrichment of the individuals' mental models, which is hoped to result in better decision making in organisations. Here, mental models refer to "deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action" (Senge, 1990, p. 6).

Following this paradigm, learning is about changing cognitive structures and is considered to be a 'specific activity' that is initiated by 'discontinuity' (Elkjaer, 2003b). If the 'learning as acquisition' perspective is accepted, then the issue of individual learning turning *into* organisational learning becomes challenging to understand and describe. Elkjaer (2003b) points out that it first disconnects the individual from the organisation, with regards to learning. It then requires separate ways to understand each and finally unites the two, again with regards to this learning. Elkjaer refers to this as the individual-organisation split and adds that it raises the question of how exactly does individual learning become organisational learning.

2.5.2 The Participation Metaphor and Emerging Paradigm of learning

Whilst 'learning as acquisition' is seen as the dominant paradigm for understanding learning, another paradigm has gained favour. This paradigm of learning encompasses social perspectives and has positioned itself as being fundamentally different from the 'standard paradigm' of learning. In this understanding of learning, greater importance is given to "participation in certain kinds of activities rather than in accumulating private possessions" (Sfard, 1998, p. 6).

Social Participation and Learning

Learning is viewed as an interactive process, where participation is almost synonymous with learning. Paavola and Hakkarainen (2005) suggest that this participation takes place in "various cultural practices and shared learning activities" (p. 538). This implies that learning is largely context dependent, and cannot be separated from the context in which participatory learning activities occur (Sfard, 1998). In contrast to the acquisition metaphor, learning is taken out of the mind of the individual and considered to be embedded in 'cultural practices' and 'shared activities' (Paavola & Hakkarainen, 2005). That is, the focus here is on relations between individuals and those with whom they interact, within specific environments.

The positive effect of social interaction on an individual's learning is not a new concept; Rylatt (1994) reports that Vygotsky discovered that social interaction enhances an individual's ability to learn and published it in his book "Thought and Language" in 1962. This concept has been further developed by numerous researchers, each utilising and expanding social learning theory in different settings (see for example Senge, 1990). Sfard (1998) explains learning in the participation metaphor as a process of positioning oneself as a member of a 'community'. Where an individual starts as a newcomer and develops in to

an integral part of the community, Lave and Wenger (1991) refer to such individuals as 'knowledgeable practitioners'. Learning is entrenched in everyday processes, practices, actions and conversations (Fenwick, 2008). Knowledge exists within participation in cultural practices, and not in minds of individuals (Paavola & Hakkarainen, 2005). In order to achieve full membership within communities, individuals must be able to communicate in the community's language and behave according to its socially negotiated norms (Sfard, 1998). Language is not just a means to transmit knowledge; it is a "medium of culture" and plays a central role in the process of learning (Elkjaer, 2003a, p. 44). Figure 2.5 depicts key aspects of this paradigm.

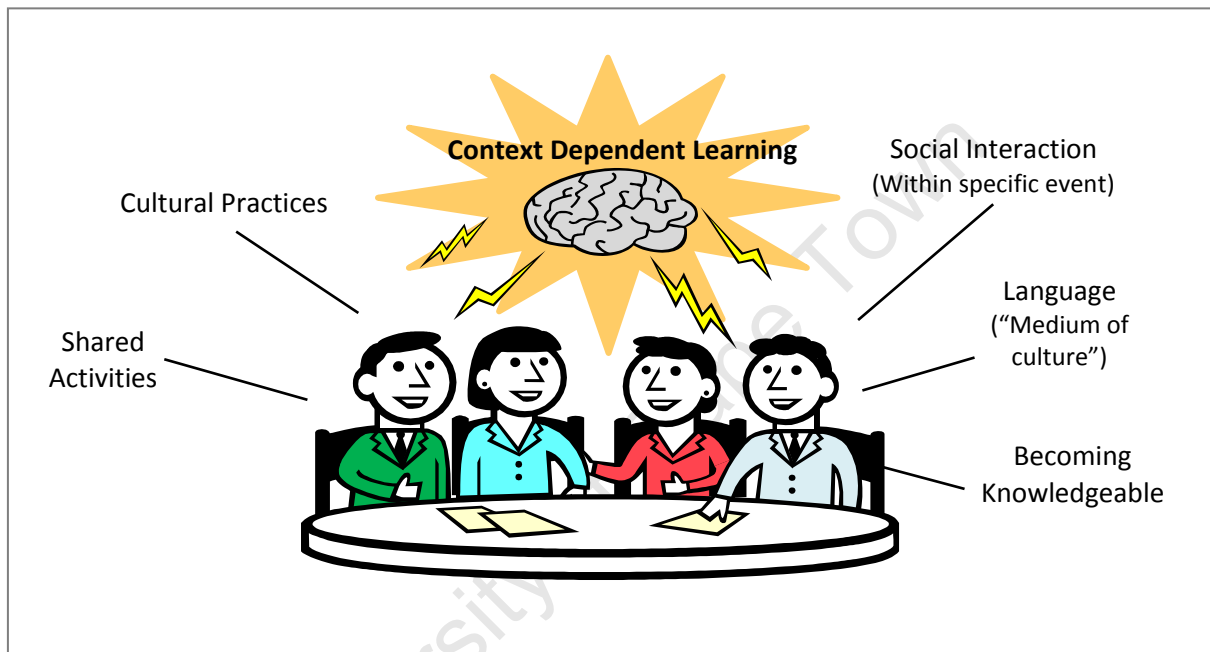


Figure 2.5: Emerging Paradigm of Learning.

Reynolds et al. (2002) state that conceptualising learning as social participation is important in workplace situations. This is because the majority of the tasks and activities in organisational settings take place by interacting with colleagues, team members, clients, consultants and suppliers. Even individual tasks involve social interaction, since people communicate with others to elicit instructions, share ideas and implement solutions, all of which shape the individual's action and learning. Reynolds et al. (2002) build an understanding of 'learning as social practice' by locating its role "for work", "at work" and "through work" (p. 15). In their research:

- ❖ *For work* is described as the learning that takes place outside the workplace, intended to prepare or complement work practice. For example, through professional bodies, interest groups and work related committees.
- ❖ *At work* refers to learning opportunities provided by the organisation and entails work activities that simulate work tasks (and not the actual tasks themselves).
- ❖ *Through work* entails learning through actual work experience, covering both the individual and collective groups.

They continue to suggest that learning lies within the processes of co-operation. Complementary to this, learning is viewed as an outcome of social interaction or inextricably joined to social practice (Engestrom & Middleton, 1996; Lave & Wenger, 1991). Learning *through work* appears to point towards the concept of informal learning (described in Section 2.4). Whilst *for work* and *at work* refer to institutionalised learning (e.g. universities), job training courses, and on the job training activities respectively.

Social Learning Theories

Social theories of learning are drawn from a broad range of differing notions, principles and beliefs, however, each acknowledge the role that context plays in learning with terms such as “situatedness”, “contextuality”, “cultural embeddedness”, and “social mediation” (Sfard, 1998, p. 6). Lave and Wenger (1991) conceptualise learning as the normal outcome of social practice. They developed a situated theory of learning, where the process of how individuals’ participate in the workplace is emphasised for the development of skills and knowledge needed to become ‘knowledgeable practitioners’. This emphasis gives rise to two main theoretical constructs: ‘communities of practice’ and ‘legitimate peripheral participation’. Both of these constructs place great value on the term participation. In a later study, Wenger provides an apt description of participation. He claims “participation here refers not just to local events of engagement in certain activities with certain people, but to a more encompassing processes of being active participants in the practices of social communities and constructing identities in relation to these communities. Participating in a playground clique or in a work team, for instance, is both a kind of action and a form of belonging. Such participation shapes not only what we do, but also who we are and how we interpret what we do” (Wenger, 1998, p. 4).

Lave and Wenger’s study of legitimate peripheral participation examines a series of case studies involving midwives, tailors, quartermasters, meat cutters, and non-drinking alcoholics. They examine how ‘newcomers’ *become* full members of each community that the case study examines. Emphasis is placed on the term ‘become’, this is because becoming an integral member of the community requires continual negotiation between social structure and meaning through participation implies legitimacy in practice. Lave and Wenger connect learning, meaning, and identity as composite factors of participation. For them, “learning is not merely a condition for membership, but is itself an evolving form of membership” (Lave & Wenger, 1991, p. 53).

When first introduced, a community of practice was defined as “a set of relations among persons, activity, and world, over time and in relation to other tangential and overlapping communities of practice” (Lave & Wenger, 1991, p. 98). Later Wenger (1998) published a book providing an extended discussion of the concept of community of practice and how it might be approached. Following a series of work, an extended definition of the concept was presented; communities of practice are “groups of people who share a concern, a set of

problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott, & Snyder, 2002, p. 4).

Within organisational and workplace settings, Elkjaer (2004a) suggests that learning is conceptualised as participation in communities of practice, which are related to organisational practices. Additionally, Elkjaer asserts that it is about becoming a “practitioner” and integral member of the “social worlds” that comprise an organisation (2003a, p. 43).

Elkjaer (2003a) argues the learning content in this approach is shifted from “knowledge acquisition” to “identity formation” (p. 43). This implies that the notion of knowledge itself has changed. Knowledge is now “situated knowledge”, it is “an active process of knowing – or getting to know” (Elkjaer, 2003a, p. 44). Knowledge is no longer individually retained, it is distributed and each individual gives meaning to it and transforms it into practice through everyday interaction (Huzzard, 2004). A consequence of this conceptualisation of learning is that issues of power relations now come into play. Legitimate peripheral participation can either be an “empowering” or “disempowering” learning experience, based on the manner in which power is applied (Lave & Wenger, 1991, p. 36). This suggests that power relations influence learners’ access to learning opportunities. In addition, attention must be given to the environments in which participatory learning activities take place.

By suggesting that learning occurs through interaction in shared practices, the question of how such environments facilitate or impede social participation needs to be explored. Learning requires access to participatory learning activities, which Billett refers to as ‘participatory practices’. Billett’s (2001) study on workplace affordances and individual engagement explored how workplaces can support and guide learning for employees and helped to develop an understanding of the workplace as a learning environment. Such environments have social structures, power relations and conditions for legitimacy that influence learning opportunities (Elkjaer, 2003a).

2.5.3 The Inquiry Metaphor and the ‘third way’ of Workplace Learning

Sfard (1998) argues that neither the acquisition metaphor, nor the participation metaphor alone can adequately help us understand the complexities of learning. Škerlavaj and Dimovski (2007) agree that both ‘learning as acquisition’ and ‘learning as participation’ are inadequate for achieving a thorough understanding of learning within workplace contexts. Elkjaer, as a researcher in the field of organisational and workplace learning, offers ‘inquiry’ as a third metaphor (2003b) and develops an approach to organisational learning, which she calls ‘the third way’ (2004a). Elkjaer introduces what she terms ‘the first way’ and ‘the second way’, referring to the *standard paradigm* and *emerging paradigm*, respectively. Table 2.3 illustrates the key differences between the two. Hager (2004a) adds that viewing learning under the ‘standard paradigm’ creates negative connotations for other types of

learning. Thus, types of learning such as WPL, which are largely based on participatory processes, are viewed as inferior under the standard paradigm.

Table 2.3: Difference between the 'first way' and 'second way' - Adapted from Elkjaer, 2004a, p. 430.

	The 'first way'	The 'second way'
Learning content	To be skilled and knowledgeable about organisations.	To become a skilful practitioner in organisations.
Learning method	Acquisition of skills and knowledge.	Participation in communities of Practice.
Relation between individual and organisation	Traits and possible to separate in analysis and practice.	Individuals as part of communities of practice.
Organisation	System	Communities of practice.

Elkjaer suggests that the fundamental difference between these two is the “unit of learning” and “unit of analysis” (2004b, p. 2). She suggests that the first way considers the individuals' as the unit of learning, whilst the second way considers the patterns of collective participation and relationships as the unit of learning. Elkjaer (2004a) points out that the second way does not address the *how* and *what* questions of learning, specifically “how is learning taking place and what is learned by way of participating in communities of practice?” (p. 420). Elkjaer turns to the work John Dewey to develop an answer to these questions. Elkjaer uses Dewey's concepts of ‘inquiry’ and ‘experience’ to resolve these questions and synthesises the ‘first way’ and ‘the second way’ into what she terms ‘third way’.

Understanding Organisations as Social Worlds

In the ‘third way’, organisations are considered as ‘social worlds’. Social worlds are “groups with shared commitments to certain activities, sharing resources of many kinds to achieve their goals, and building shared ideologies about how to go about their business” (Clarke, 1991, p. 131 in Elkjaer, 2004a, p. 428).

This understanding of organisations serves as a foundation for Elkjaer's proposed ‘third way’. If organisations are considered as social worlds, organisational learning becomes a “social activity” (Elkjaer, 2003b, p. 488). Elkjaer suggests that embracing organisations as social worlds serves to improve the existing conceptualisation of communities of practice, as they encompass individual intentionality, “commitments”, “goals” and “ideologies” (Elkjaer, 2004b, p. 6). Additionally, social worlds facilitate “realization of what participation in communities of practice involves, that is commitment, action and transaction” (Elkjaer, 2004a, p. 428). Using the social world perspective, organisational learning is influenced by two main factors (Elkjaer, 2004b):

- ❖ The ‘possibilities for action’: access to participatory opportunities shapes organisational learning. Patterns of action and participation in the organisational social world are considered to *shape the course* of organisational learning over time.
- ❖ The ‘organisational conditions’: the state of the social world influences the level of commitment and engagement within it. The potential uncertainties that initiate inquiry and possible learning set the *course* of organisational learning.

The remainder of this section answers *how learning takes place* and *what is learned*.

Drawing on Elkjaer’s interpretation and understanding of Dewey’s concepts of ‘experience’ and ‘inquiry’ (Elkjaer, 2003a; Elkjaer, 2003b; Elkjaer, 2004a; Elkjaer, 2004b; Elkjaer, 2005), the following arguments are presented.

Learning is “a continuous reorganisation and reconstruction of experience” (Elkjaer, 2000, p. 352). The process of learning happens all the time and everywhere as individuals act, interact, reflect and think. Whenever an individual is in a problematic situation (confused or in doubt), the process of learning starts through inquiry. Inquiry for Dewey (in Elkjaer, 2003), is the way in which one has experiences and is the way in which one ‘becomes knowledgeable’. This process includes action, reflection, thinking and cognition. Knowledge is a matter of reflective construction, and not an abstract or concrete issue. That is, when individuals experience a new situation of uncertainty, they reflect on previous experiences and use their ability to reconstruct those experiences in this situation. Thus, knowledge is constructed through inquiry; it is not developed through “abstract propositions” (Elkjaer, 2000, p. 352).

Learning and Experience

Experience encompasses the concept of becoming knowledgeable through participation (Elkjaer, 2004a).

“Experience is the transaction between individual(s) and environment; it is the continuous and mutual formation of the two, and as such experience is both a process and a product. Experience includes more than thinking and knowledge as emotion; intuition and body are also part of experience and the triggers of inquiry” (Elkjaer, 2004a, p. 420).

Elkjaer argues that experience is situated in and dependent on the environment in which it occurs. Therefore, “sensation, thinking and motor response ... together make up a unity – a situation or an event” (Elkjaer, 2004a, p. 424). For example, consider the experience of hearing a noise - “If one is reading a book, if one is hunting, if one is watching in a dark place on a lonely night, if one is performing a chemical experiment, in each case, the noise has a very different psychical value; it is a different experience” (Dewey, 1896[1972], p. 100 in Elkjaer, 2004a, p. 424). Thus, the meaning given to hearing the sound is dependent on the conditions and situation in which the sound is heard. Which implies that context plays a major role in the interpretation. Elkjaer adds that the response is not a separate event that

simply follows the stimulus. Instead, it is considered to be a reaction *in* the event, and not *to* the event. The response is made up of the stimulus, as it gives meaning to the entire experience and in turn the reaction.

If learning is “a continuous reorganisation and reconstruction of experience” (Elkjaer, 2000, p. 352), what instigates this process? Furthermore, if experience encompasses the process of becoming knowledgeable through participation, then how exactly is knowledge constructed? The following section explains the concept of ‘inquiry’ and connects it to that of ‘experience’.

Learning and Inquiry

As noted earlier, (Elkjaer, 2004a) draws of the pragmatist view that learning begins with the process of inquiry. This process starts when an individual senses uncertainty about a situation. This implies that inquiry does not necessarily start within the sphere of intellect, but instead can be initiated by the senses (sensory sphere). Once the individual begins to define and articulate the situation, the learning process moves in to the intellectual sphere, as experience is now used. Learning is described as engagement in the process of inquiry, in which thinking and reflection serve as tools to the process.

Knowledge refers “directly to individual and collective human experience (the process and the result)” (Elkjaer, 2004a, p. 424). Thus, actions and thinking are always situated. Elkjaer refers to such actions as ‘reflective actions’, as they are “created in relation to a particular situation or problem” (2004a, p. 425). Inquiry takes place all the time, even if the individual is not conscious of it (Elkjaer, 2004a). Inquiry enables individuals to learn and become knowledgeable. By inquiring into problematic situations, new experiences are gained. However, in order for *inquiry to result in knowledge* the initial sense of uncertainty needs to be resolved. Elkjaer explains that Dewey uses the process of reflection to establish a relation between the problem’s definition and its solution. An individual’s ability to perform such reflections results in the construction of new knowledge. Reflecting and thinking are intentional processes that connect actions and their consequences. Therefore, when individuals act, they have an end in sight or a purpose in mind. Elkjaer suggests that learning begins by thinking (about a specific aim) and produces more thinking, as new aims begin to unfold. This implies that action is a component of thinking. Additionally, reflecting on previous actions enables anticipation of consequences and new aims.

Experiences have the potential to construct knowledge through the processes of thinking and reflecting, which are instigated by inquiry. However, in order to learn, experiences must move in to the intellectual sphere. That is, they must be made conscious and verbally describable. This implies that language is a component of thinking. Individuals need language to generalize, communicate, reorganise and reconstruct experiences to both themselves and to others. Elkjaer states that “the separation between cognition and practice is replaced by a continuity of knowing and acting” (2000, p. 253). However, simply

participating does not mean learning. “Only a person who is able to reflect upon her/his own actions and reorganise as well as reconstruct experience by continuously employing reflection – thinking – as a means of action is *learning*” (Elkjaer, 2000, p. 353). The next section describes the relation between the individual and the workplace, when learning is involved.

Transactional Relation between the Individual and the Workplace

Elkjaer introduces a ‘transactional’ relation between the individual and the organisation in her ‘third way’ to organisational learning. Using Dewey and Bentley’s (1949[1991]) understanding of how the individual and environment are related, Elkjaer incorporates their concept of *transaction* into her ‘third way’. The following is a description of Elkjaer’s transactional relation:

Understanding the relation between individuals and organisations as transactional makes the learning situation (or event) the unit of analysis. Elkjaer points out that when this situation is studied, it cannot be broken down to its parts; instead it must be examined as a whole. Therefore, learning in workplace settings can be studied without separating the individual from its organisational context. The situation or event can be studied “as unfolding in time and context and together creates a pattern of organisational commitment” (2004a, p. 427). Time is central to the individual’s relation with his/her environment and context is a fundamental aspect.

Understanding organisations as social worlds enables the transactional relation between individuals and the organisation. By making the situation the unit of analysis, learning is investigated by focusing on: the actual course of the learning phenomenon, and the actions and interactions that shape this course over time (Elkjaer, 2004b).

Based on Elkjaer’s (2004b) interpretation of the social world perspective, she identified that organisational learning is influenced by two main factors: the ‘possibilities for action’ and the ‘organisational conditions’. These two factors coupled with a transactional relation between the individual and the organisation suggests that the following areas can be examined when studying learning in the workplace:

- ❖ Access to participatory opportunities.
- ❖ Patterns of action and participation.
- ❖ The level of commitment and engagement.
- ❖ The potential for uncertainties that initiate inquiry and potential learning.

Summary of Elkjaer’s ‘third way’

In Elkjaer’s proposed ‘third way’, learning is explained by Dewey’s concepts of inquiry and experience, and by viewing organisations as social worlds. Elkjaer incorporates both ‘learning as acquisition’ and ‘learning as participation’ in to her model for learning. Table 2.4 summarises key aspects of the ‘third way’.

Table 2.4: The 'third way' - Adapted from Elkjaer, 2004a, p. 430.

	The 'third way'
Learning content	To develop experience as part of a continuous transaction between individuals and organisation.
Learning method	Individual and joint inquiry or reflective thinking – begins with body, emotion and intuition.
Relation between individual and organisation	Transactional – mutual formation of individuals and organisation.
Organisation	Social worlds.

Organisations are viewed as social worlds, where individuals participate in communities of practice. Within such environments, individuals continuously experience situations of uncertainty (problems, confusion). These events act as the learning stimulus, that is, they instigate the process of inquiry. Often this process starts within the sphere of the senses, but once the individual begins to define the problem or uncertainty (using language and thus thinking involved) in the situation, the experience moves towards an area of intellect. Through reflection on previous experiences, the individual tries to make sense of the new experience. The individual reorganises and reconstructs previous experiences, in order to formulate a response to this new experience. The reflective response in the experience results in the construction of new knowledge. Figure 2.6 depicts the key aspects of the 'third way'. It can be conceptualised using the interaction between three *conceptual cycles*: internal interaction, external interaction, and learning process.

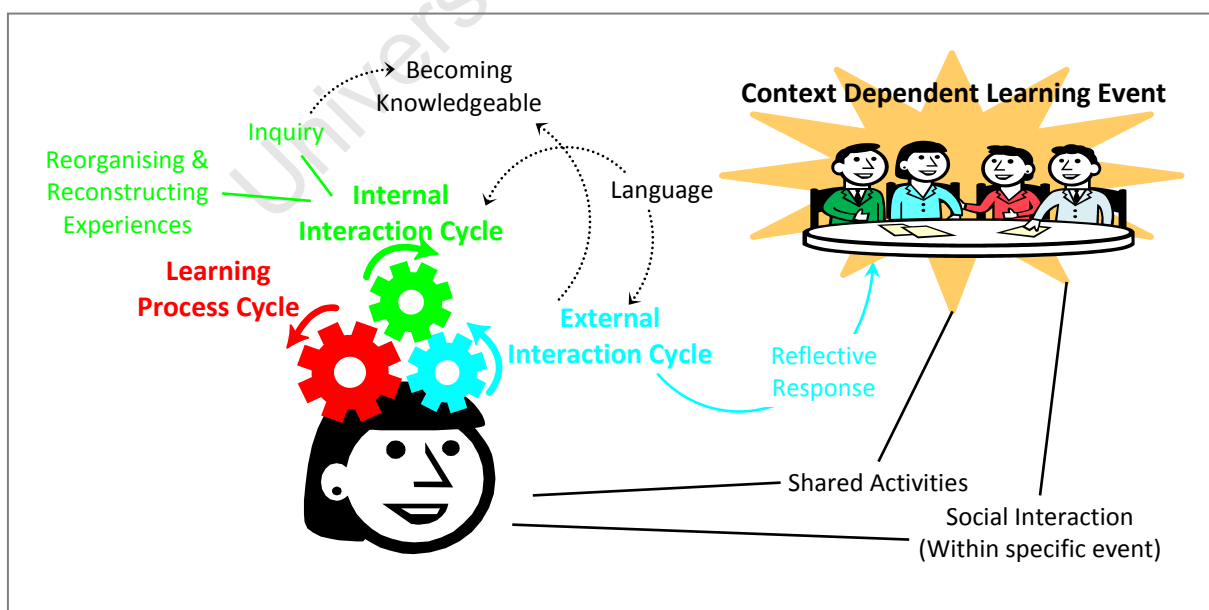


Figure 2.6: The 'third way' of Learning.

Internal interaction refers to the ‘internal’ processes involved in learning. It encompasses the process of inquiry, and the reorganisation and restructuring of experiences. This cycle is initiated at the point when inquiry moves towards an area of intellect - the individual defines the problem and reflects on previous experiences (see Figure 2.7). The figure represents the experience initiated by inquiry through the senses. As the individual thinks and reflects, the experience moves towards the intellectual sphere. Previous experiences are reorganised and reconstructed to create new experience (new knowledge).

The *external interaction* cycle encompasses the reflective response to the event or stimulus. It is the action taken by the individual. This cycle includes the participatory aspects of learning, where the individual interacts with others (for example, to communicate the problem situation).

Both these cycles take place continuously, everywhere, all the time and represent the mechanisms of individual experience.

The *learning process* cycle is therefore a continuous one, which is propelled by the internal and external interaction cycles. It encompasses the learning that takes place at an individual level. Each time an individual experiences a situation, these cycles are at work and the processes within the internal and external cycles (thinking, reflection, action, participation) all occur within that specific experience and event.

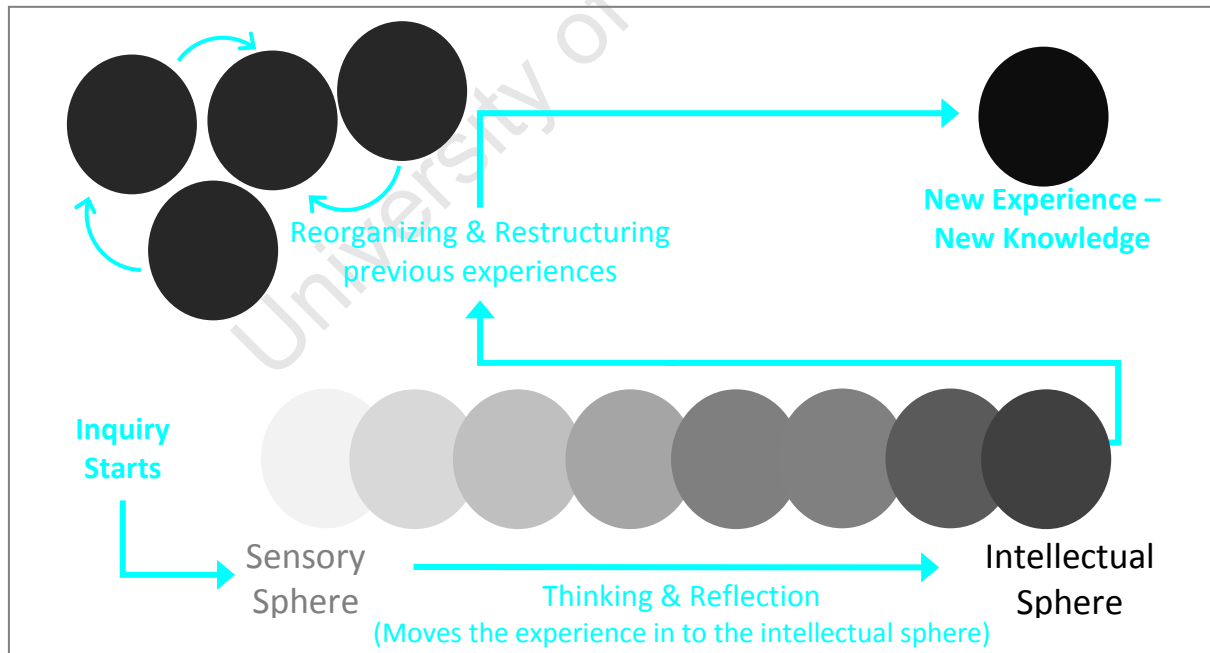


Figure 2.7: Learning through ‘inquiry’ and ‘experience’.

Like most theories of learning, the ‘third way’ too has received criticism. For example Škerlavaj and Dimovski (2007) argue that it slants more towards participation perspectives and overlooks features of learning as acquisition, which they deem *vital* to understanding learning. Instead, they offer an intra-organisational learning network perspective, and argue

that it explains “organisational learning better than its predecessors” (2007, p. 44). Another approach that has received attention is Illeris’s (2004) learning model for working life, which was developed based on his earlier work on a general model for learning. Illeris too believed that learning cannot be explained by either acquisition or participation perspectives alone, consequently his model incorporated the two. On the other hand, Hager (2004a) argues for ‘construction’ as the third metaphor for learning. Hager contends that the ‘construction metaphor’, which focuses on construction ‘of learning’, ‘of learners’, and ‘of the environments in which they operate’ is better suited to explain the learning process.

Although there is no agreement on which perspective of learning is most appropriate to understanding learning within the workplace, from the above it is clear that each perspective is valuable in its own right and has assisted in furthering the discourse and understanding of WPL. In general, each theory builds on, gains insights from and improves on the perspectives of its predecessor. Regardless of whether it follows a similar path or diverges to a new direction, each plays its role in the development of our understanding of learning within the workplace. For example, the dominance of acquisition perspectives of learning in literature led to the critical examination and the realisation that the issue of context was not accounted for, thus for giving birth to the notion of learning as participation. This in turn led to a plethora of studies for and against each perspective. Such studies further refined both acquisition and participatory perspectives, and has also led to the development of new theories which includes synthesise of the two perspectives.

2.6 Chapter Summary

This chapter presented key insights to understanding learning within the workplace. It positioned workplace learning amongst the concepts of learning organisation and organisational learning. The various motives for workplace learning were discussed and aspects of both formal and informal learning were highlighted. Lastly, it described the learning process and how it takes place in the workplace. Armed with the above insights and direction, the next chapter describes the research methodology used to address the questions posed in Chapter 1.

3 Methodology

3.1 Introduction

It is an exciting and challenging time to be a researcher in the field of workplace learning. Studies examining learning within the workplace are increasing in number, each bringing new insight to the phenomenon. To successfully add to this body of literature, an organised and systemic method of inquiry is required. This chapter discusses the methodological approach adopted for this study and research paradigm considerations guiding the research process are outlined. The rationale for using a qualitative approach and more specifically, grounded theory principles are also presented.

The role of evaluative criteria in qualitative research is examined in order to resolve concerns of quality and trustworthiness of this study. Particular emphasis is placed on issues of rigour surrounding the overall research process. Such issues include the justification of data sites and sources, data gathering mechanisms, and the framework developed for data analysis.

3.2 Addressing questions of strategy

Designing a research project is all about making decisions. These range from broad, general decisions about what approach to adopt in order to tackle a particular topic, to narrow, more specific decisions about what specific data to obtain, from where and how.

(Thomas, 2003, p. 20)

In order to design a research project that is “clear, relevant and intellectually worthwhile” some challenging research areas need to be considered (Mason, 2002, p. 13). Figure 3.1 below illustrates these research areas.

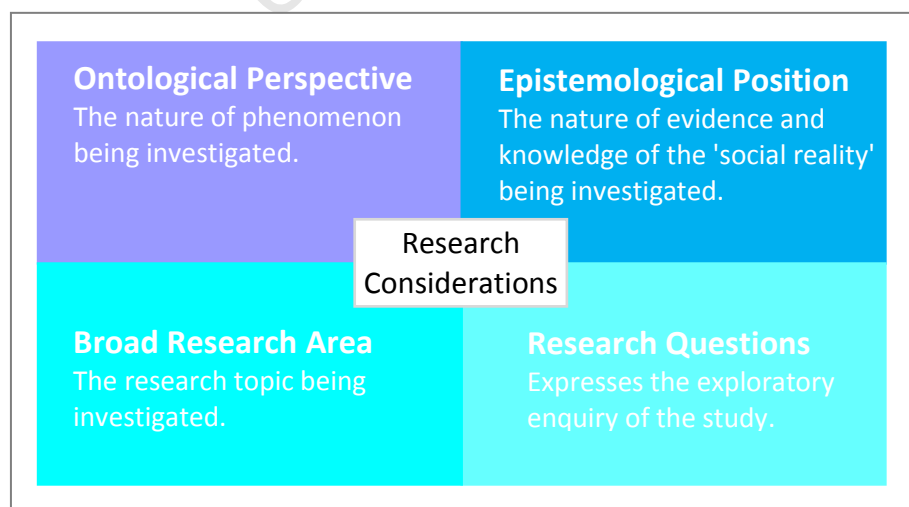


Figure 3.1: Research Considerations - Adapted from Mason, 2002, pp. 14-21.

Mason (2002) suggests that addressing these four areas establishes rigour in understanding what the research study is about and helps researchers understand the true “essence of their enquiry” (p. 13). However, she points out that these parameters should not create rigidity in the research process. Instead, they should be actively examined as the study progresses and as perspectives change. The aim is for this initial process of enquiry to form part of the researcher’s reflexive practice. As such, this study has used the above questions to “interrogate” the researcher’s assumptions, “synthesize” them, and “transform” them as appropriate (p. 13). The combination of these four areas serves to create clarity, whilst still maintaining flexibility in the research process.

Ontology examines the ‘social reality’ that the researcher investigates and *epistemology* encompasses the nature of the relationship between that ‘social reality’ and the researcher. Methodology connects these two areas and covers how the researcher investigates that ‘social reality’. This dissertation examines employee learning within workplace environments, specifically it is interested in learning that takes place on an everyday basis through the employees’ participation in everyday work activities. From an ontological perspective, the social reality explored by this study examines people as social actors, their understanding and perceptions, their relations with others, their involvement in social processes, and their actions and behaviours associated with learning in the workplace. Individuals learn within the workplace by participating in everyday work activities, and such participation is a meaningful component of the ‘social world’ being examined. The social world is an outcome of the interactions between individuals over time, constructing social structures which influence these interactions. The researcher believes that although some aspects of the social world exist independently of her knowledge of them, they do not exist independently of people. Due to the nature of social interactions, not all aspects of the social world are necessarily visible and are considered as being conceptual.

The epistemological considerations of this study encompass the issue of how social phenomenon can be known and how knowledge is established. Such considerations help the researcher to construct knowledge and explanations for the ontological elements mentioned above. Employee participation (or the individual’s perception of their participation) is knowable, and therefore it is possible to generate knowledge about the evidence of such participation and it’s relation to the individual’s learning. To construct such knowledge about the social world, the researcher believes some aspects of the evidence can be observed (by observing activities, behaviours, and environments) while other aspects can be interpreted (through participants’ beliefs and perceptions of their learning in workplace environments). These two areas lead towards the issue of paradigm that guides this study and are discussed in Section 3.3. The *research area* of this study has been addressed in detail in Chapter 2.

This leads the discussion to the *research questions* investigated in this study. These questions express the exploratory enquiry of this study and address the research interest of

the researcher. The focus of this inquiry is to understand workplace learning. This research interest unfolds into two parts:

RQ 1: How do individuals learn in the workplace?

RQ 2: How can the organisation facilitate workplace learning?

The above areas locate the research process. Specifically, they assist in identifying appropriate methods for data generation and analysis. This implies that such questions also influence the examination of issues of rigour surrounding the research process and are central to the research study. Mason recommends that the researcher should reflect “on the quality of your methods in relation to your research questions, and on how well they produce relevant data which can be used in constructing your explanation” when arguing issues of rigour (2002, p. 189).

The research questions investigated in this dissertation are exploratory in nature as they attempt to determine how employees learn within workplace settings, and how the organisations can facilitate learning. Such an endeavour requires access to the perceptions of the employees’ regarding their learning experiences and preferences. Thus, this study adopts an inductive theory building approach in that the data collected should help develop a model for organisational learning systems. The following sections discuss the study’s research paradigm, methodology and issues of rigour.

3.3 Research and the question of paradigm

In order to commit to an appropriate research methodology, Guba and Lincoln (1998) recommend that the issue of research paradigm be considered first. They argue that “questions of method are secondary to questions of paradigm, which we define as the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways” (p. 195).

Deshpande (1983) describes a paradigm as “a set of linked assumptions about the world which is shared by a community of scientists investigating that world” (p. 110). He adds that paradigms serve as the overarching conceptual framework guiding the study and enable the researcher to ascertain what problems are “worthy of exploration” and decide on which methods should be used to tackle them (p. 102). Guba and Lincoln (1998) differentiate between the competing paradigms of inquiry adopted by researchers. They assemble these into four main categories: positivism, realism, critical theory, and constructivism. Each consisting of three broad elements: ontology, epistemology, and methodology.

Constructivism is deemed most appropriate for this study, since it embraces the varying and context specific concepts related to individual learning that this study examines. Here, the researcher plays a participatory role and is ‘interactively linked’ to the participants. As a result, the findings are constructed as the investigation progresses. Constructivism offers a

valuable way to examine how individuals' learning in workplace settings. The participants' varying constructions (about their learning experiences) can be compared and contrasted through active participatory exchange between the researcher and the participants. It enables the researcher to "distil a consensus construction that is more informed and sophisticated than any of the predecessor constructions" (Guba & Lincoln, 1998, p. 135).

Based on the above discussion concerning the research paradigm guiding this study, a qualitative research methodology offer a good fit for this investigation. The next section discusses the methodological considerations for this study.

3.4 Qualitative Research: Characteristics and Assumptions

Qualitative research describes real world settings according to the point of view of the people that participate in them (Flick, Kardorff, & Steinke, 2004). It employs a 'naturalistic' approach to describe situation specific phenomenon (Golafshani, 2003). Denzin and Lincoln offer the following definition for qualitative research:

"Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them."

(Denzin & Lincoln, 2000, p. 3)

This understanding draws attention to key perspectives surrounding qualitative research. Namely, it is a situated activity, applies interpretive approaches, and involves the use of data gathering mechanisms such as interviews, field notes and memos to self. Flick, Kardorff, and Steinke (2004) suggest that qualitative research is an umbrella term that encompasses a variety of diverse methods. They continue to suggest that although such methods have differing qualities, they share some basic theoretical assumptions. Namely, "social reality is understood as a shared product and attribution of meanings", "processual nature and reflexivity of social reality are assumed", "objective life circumstances are made relevant to a life-world through subjective meanings", and "the communicative nature of social reality permits the reconstruction of constructions of social reality to become the starting point for research" (p. 7).

Woods (1999) suggests four similar perspectives, which he terms 'main features' of qualitative research. These features expand on the understanding of qualitative research presented above and are presented in Figure 3.2.

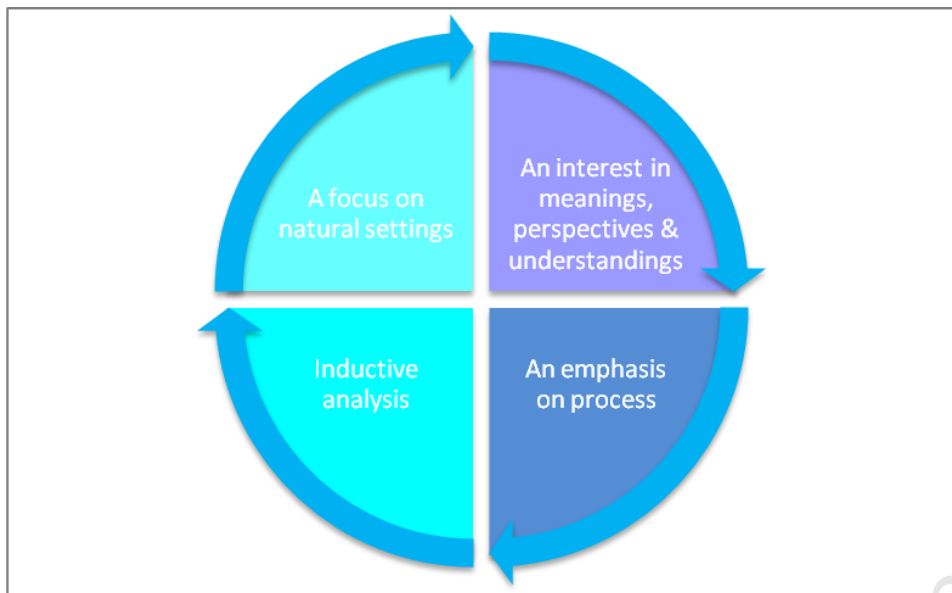


Figure 3.2: Main Features of Qualitative Research - Adapted from Woods, 1999, p. 3.

Woods (1999) adds that the qualitative researcher is the primary research instrument. And this has ramifications for assessing the credibility of the research (Golafshani, 2003). In quantitative research, credibility discussions encompass issues of validity, reliability, and generalisability. In contrast, qualitative research tends to reject such 'conventional' criteria for credibility assessment and instead focus on issues of 'rigour' (Finlay, 2006). Based on the features described above, a qualitative research approach is deemed appropriate for this study since characteristics of employee learning experiences are being examined. In particular, the researcher has drawn on some of principles from grounded theory as espoused by Glaser and Strauss (1967) to guide the methodological aspects of the inquiry, which are described in the next section.

3.5 Grounded Theory Principles

Grounded Theory is a theory generating approach in research studies. The Grounded Theory (GT) approach was first described in Glaser and Strauss's (1967) book, *The Discovery of Grounded Theory: Strategies for Qualitative Research* and has its roots in social science research. Glaser and Strauss developed GT to address their discontentment with social science research at the time. The primary issue being the inappropriate view of using data for "testing of pre-formulated theory", as opposed to generating theory from the data (Bloor & Wood, 2006, p. 96). Fischer and Otnes (2006) add that the main goal of GT was to challenge the existing notion that "qualitative research could produce only description and not theory" (p. 19). Since then, GT has guided researchers in a wide range of disciplines and countries, establishing itself as a "global phenomenon" (Cutcliffe, 2005, p. 421).

Quite simply, GT is "the discovery of theory from data" (Glaser & Strauss, 1967, p. 1). GT refers to "both the method of inquiry and to the product of inquiry" (Charmaz, 2005, p. 507) and involves "continual interplay between data collection and analysis to produce a theory

during the research process” (Bowen, 2006, p. 2). That is, both data collection and analysis inform and guide each other throughout the GT research study (Charmaz, 2005). However, J. Bell (2005) advises that is not a straightforward process.

“The process of conducting grounded theory research isn’t just a matter of looking at the data and developing a theory from it. Instead, it is what researchers call an iterative process – that is, a cyclical process in which theoretical insights emerge or are discovered in the data, those insights are then tested to see how they can make sense of other parts of the data, which in turn produce their own theoretical insights, which are then tested again against the data, and so on” (Hayes, 2000, p.184 as cited in Bell J., 2005, p. 19).

Fernández (2004) identifies two critical tenants of GT:

1. The research must not start with a theory to prove, disprove or extend. When unavoidable, deep-rooted beliefs can be captured as text and then analysed with other text as just another incident in data.
2. Grounded theory is discovered through constant comparison between incidents and properties of a category. Trying to observe as many underlying uniformities and diversities as possible is the essence of grounded theory. (p. 84)

Thus, GT investigations begin with research questions and not with a hypothesis to prove or disprove. Additionally, there is no “thorough review of literature” at the beginning of the inquiry (Bell J., 2005, p. 19). GT is used when the inquiry requires understanding “phenomena involving social processes underlying human experiences and behaviour” (Sousa, Driessnack, & Mendes, 2007, p. 686). The principal foundations of GT methods are: theoretical sampling and constant comparison (Sousa, Driessnack, & Mendes, 2007). In theoretical sampling, the data collection process is extended and directed by the emerging theory (Bloor & Wood, 2006). That is, new data is collected on the basis of previous data and analysis. Thus, as the theory emerges, the selective sampling process becomes more and more focused. Constant comparison guides theoretical sampling. It involves continuous coding, categorisation, and comparison of data (Bloor & Wood, 2006). Theoretical sampling continues “new data are not showing any new theoretical elements, but rather confirming what has already been found” (Bell J., 2005, p. 19).

Since their initial introduction of GT, Glaser and Strauss’s views on the matter diverged. Subsequently, two different approaches to GT emerged: “the Straussian and the Glaserian” (Hunter, Hari, Egbu, & Kelly, 2005, p. 58). The Straussian approach is regarded as being “significantly more prescriptive in specifying the steps to be taken by a researcher in coding and analysing phenomena”, which Glaser argues as “forcing”, instead of “allowing emergence of theory” (Douglas, 2003, p. 48). On the other hand, Charmaz (2006) suggests that researchers can adopt and adapt basic GT guidelines in their study. She points to Glaser and Strauss’s (1967) original invitation for researchers to “use grounded theory strategies flexibly in their own way” (Charmaz, 2006, p. 9). For Charmaz, the GT method encompasses an array of “principles and practices”, rather than “methodological rules” and

“prescriptions” (p. 9). She describes the craft of using GT in research by addressing constructivist concerns and reflexivity in practice.

This dissertation adopts GT perspectives to guide the methodological aspects of the study. GT encompasses not only issues of data analysis, but also data gathering strategy, as these two occur simultaneously, each providing support and focus to the other. The data gathering and data analysis aspects of this study are described in the next sections.

3.6 Gathering Rich Data

Grounded Theory studies can utilise a variety of data collection strategies. Gathering “rich-detailed and full data” is vital GT inquiry (Charmaz, 2006, p. 10) and “diversity in data collection methods is often required to ensure that the theory is in fact 'grounded' in the data” (Duffy, Ferguson, & Watson, 2004, p. 74). This study employed the following data gathering methods: field observations, in-depth focused interviews (with the use of the repertory grid technique), theoretical and purposeful sampling, review of on-site documentations, reflective journaling, memo writing, and review of relevant literature. Discussions surrounding participant selection, interviews, and observation are presented below. The other data gathering methods mentioned above have been integrated into the discussion on grounded theory analysis principles (Section 3.7).

3.6.1 Research Interviews

Schostak and Barbour (2005) suggest that the “interview is much more than just a tool”; it gives the researcher access to “discursive structures that frame the worlds of ‘subjects’” (p. 43). Qualitative researchers have a wide range of interview techniques available to them. These include structured, semi-structured, formal, informal, focused, in-depth, closed, and open ended, to name a few. This study adopted an in-depth interview strategy. The interviews were composed of two parts: a semi-structured component and a focused component, where each served to add richness to the data collected. Additionally, the focused component of this study’s interviews adopted repertory grid technique.

Semi-Structured Interview Component

Semi-structured interviews enable the researcher to gather more focused data by asking specific questions. Such questions serve as ‘prompts’ for the interviewee during the interview discussion. Duffy, Ferguson, and Watson (2004) suggest that such an interview strategy is consistent with grounded theory approach, as it still allows for flexibility during the interview session. Semi-structured interviews “permit the interviewer to pursue issues of particular significance that relate to the research question” (Duffy, Ferguson, & Watson, 2004, p. 70). In this study, semi-structured interviews not only enabled the interviewer to ask key questions regarding the interviewees’ workplace related learning experiences, but also allowed “flexibility in the sequencing of questions and in the depth of exploration” (p. 70).

Focused Repertory Grid Interview Component

Laws and McLeod (2004) describe the focused interview as one which involves some stimulus material that is used to trigger discussion. Additionally, they point out that focused interviews add “range”, “depth”, and “specificity” to grounded theory approaches (p. 14). The focused interview element of this study adopted a combination of the repertory grid technique and laddering technique.

The repertory grid technique (repgrid) serves as a mechanism “to aid the elicitation and evaluation of individuals’ personal constructs” and is congenial with grounded theory approach (Edwards, McDonald, & Young, 2008, p. 2). This mechanism was developed in 1955 by George Kelly, as a psychology-based research technique (Song & Gale, 2008). Since then, it has branched out and established its utility in areas such as management research (Easterby-Smith, Thorpe, & Holman, 1996) and consumer research (Marsden & Little, 2000). Easterby-Smith et al. (1996) explain that an individual’s behaviour depends on their understanding of others and situations, thus the repgrid “provides an excellent means of uncovering and representing that understanding” (p. 3). They go on to add that it “offers a powerful way of quantifying people’s attitudes, feeling and perceptions” (p. 3). In order to fully understand the repgrid and its practical application in this study, an understanding of its basic assumptions and the theory that underpins it is required.

Basic Assumptions

The repgrid is derived from George Kelly’s Personal Construct Theory. His theory is founded on the notion that “a person’s processes are psychologically channelized by the ways in which he anticipates events” (Bell R. C., 2005, p. 67). Easterby-Smith et al. (1996, pp. 7-8) highlight key assumptions underlying Personal Construct Theory that they describe as being central to the application of the repgrid (see Table 3.1).

Table 3.1: Key Assumptions of Personal Construct Theory.

Key Assumptions of PCT	Explanation
The individual is viewed as a scientist and his/her understanding of the world is the product of “an active constructive process” (Marsden & Little, 2000, p. 818).	The individual is an active user of knowledge in an organisation rather than being a passive recipient. The repgrid serves as a psychological mirror, which helps the individual understand his/her world (Easterby-Smith, Thorpe, & Holman, 1996).
Individuals construct systems differ from one another.	Individuals perceive the same situation (and react to it) in different ways from each other. Knowledge held is not objectively true or false, instead it is meaningful to the individual who holds it (Easterby-Smith, Thorpe, & Holman, 1996).
Individuals cannot have identical experiences.	However they may construe their experiences in a similar way (Marsden & Little, 2000, p. 820).
The individual’s construct	The individual’s constructs can be core or peripheral. Where

system develops and modifies as he/she continually construes new (and replicated) events in the world (Easterby-Smith, Thorpe, & Holman, 1996).	core constructs “govern a person’s maintenance process” and peripheral constructs “are constructs that can be altered without serious modification of the core structure” (Fransella, 2005, p. 255).
The individual’s view of the world is constructed using bipolar constructs (Marsden & Little, 2000).	All personal constructs have opposites (Fransella & Neimeyer, 2005). Additionally, their constructs are hierarchically arranged into a “system of superordinate (most important) and subordinate (least important)” (Marsden & Little, 2000, p. 819).

Based on the above, individuals develop a representational model of the world, which becomes increasingly complex as that model develops (Stewart, Stewart, & Fonda, 1981). This is the individual’s construct system, their personality. Personal constructs characterise the individual’s constructed views and perceptions of the world as they have experienced it, and they help to understand how the individual will continue to construe their experiences world (Stewart, Stewart, & Fonda, 1981).

Principles of Repertory Grid

The repgrid is a structured interview mechanism, where the interviewer attempts to elicit the interviewee’s personal constructs. It has three main focus areas: elements, constructs, and the connection between the two. Looking back at R.C Bell’s quote above, the *ways* refer to constructs of the repgrid and the *events* refer to the elements (Bell R. C., 2005). Thus, the structured mechanism “involves defining a set of elements, eliciting a set of constructs that distinguish among these elements, and relating elements to constructs” (p. 67).

Focus of repgrid: In this study, the focus of the repgrid is how the interviewee learns in the workplace (on a daily basis) by interacting with other people and organisational systems.

Elements are people or objects that interviewees are trying to understand.

Constructs are the ideas that the interviewee holds about the elements. They are essentially the “qualities which the person uses to describe and differentiate between the elements” (Easterby-Smith, Thorpe, & Holman, 1996, p. 4) and are viewed as being bipolar (having a negative and positive pole) in nature.

Relating elements to constructs shows how elements are linked to constructs and is usually done by rating the elements against constructs.

Laddering Technique

To understand the interviewees’ personal constructs about their learning experiences within the workplace, this study uses the repgrid in conjunction with the Laddering techniques. Laddering is mainly used to elicit superordinate constructs from interviewees. Subordinate constructs are regarded as being more concrete for the interviewee. Fransella suggests that

interviewees' tend to have difficulty in describing their superordinate constructs in words, and the Laddering technique assists in understanding the "meaning that lies behind the words" (Fransella, 2005, p. 49).

This study uses this technique as it provides a valuable way of understanding the superordinate-subordinate relationship between the interviewee's constructs. In Laddering, this relationship is "described by seeking ever-more specific ways of expressing constructs" (Jankowicz, 2004, p. 66).

3.6.2 Observation

Observation in research involves mindful data gathering in a specific situation. The observer acts as the research instrument who records all sensory data, which is stored for analysis. There are a range of observation techniques available to researchers, each varying in their degree of structure and the role of the researcher.

Rowley (2004) groups observation into two main categories: participant and non-participant, and overt and covert, where each can be structured or unstructured (Jones & Somekh, 2005). This study adopts an unstructured, participant-as-observer approach, where the researcher's presence is known to those in the site. Patton (2002) points out that this strategy provides the researcher with an opportunity to conduct informal conversational interviews with participants in the situation. All observations in this study were direct in nature. Direct observations are helpful to the researcher in examining research settings and identifying problem situations (Rowley, 2004). An unstructured approach to observation was selected because it offers flexibility in gathering and recording techniques. In this type of observation, the researcher is guided by the focus of the study and has a broad understanding of the types of things that are to be recorded (Jones & Somekh, 2005).

An implication of this approach to observation is the concern of researcher bias. Jones and Somekh (2005) states that the researcher is guided by a "unique lens of her own socio-culturally constructed values dependent upon life history and factors such as gender, ethnicity, social class and disciplinary and professional background" (p. 15). Patton (2002) points out that such factors may result in selective perception and thus influence the data. Clearly, the researcher needs to make a conscious and constant attempt at managing his/her own observation bias. Patton (2002) recommends researcher reflexivity to minimise the effects of observation bias on data.

3.7 Data Analysis: Drawing on Grounded Theory Principles

This section describes the analytical processes used to generate grounded theory in this study which explores *how individuals learn in the workplace on a daily basis*. Data analysis occurs simultaneously with data gathering, see Figure 3.3.

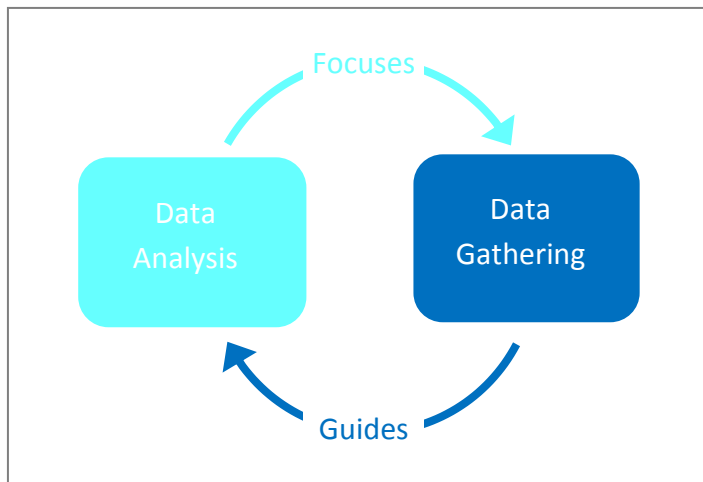


Figure 3.3: Relationship between Data Gathering and Analysis.

The data gathered encompasses how the research participants make sense of their learning experiences. This section discusses how the researcher makes “analytical sense” of the participants meanings and actions (Charmaz, 2006, p. 11). In this study, analytical sense making is guided by Charmaz’s (2006) description of the craft of using GT in research, which is anchored in Glaser and Strauss’s original GT principles. Figure 3.4 illustrates the five key principles in GT analysis.

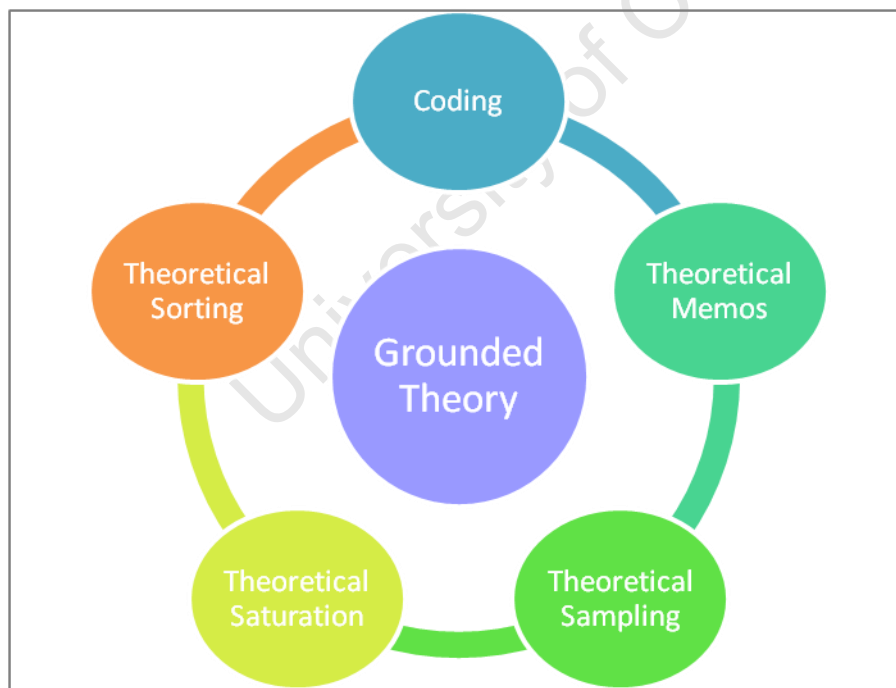


Figure 3.4: Five key principles of Grounded Theory.

3.7.1 Coding in Grounded Theory Practice

At the heart of GT analysis lie constant comparative practices which ensure that emerging theory is indeed grounded in the data (Glaser & Strauss, 1967). There are four key parts of

constant comparative analysis: open coding, theoretical coding, selective coding, and finalising the emergent theory.

Charmaz (2006) describes coding as “naming segments of data with a label that simultaneously categorizes summarizes, and accounts for each piece of data” (p. 43). She adds that this is the point where the researcher begins to make analytical interpretations. Thus, it “shapes an analytical frame” for data analysis (p. 45) and creates a crucial link between data gathering and development of the emergent theory.

Open Coding

Open coding usually occurs in the first stage of GT coding and the researcher stays *open* to discovering any theoretical possibilities that are discerned in the data (e.g. interview transcripts, observation data) (Charmaz, 2006). The aim of open coding is to “extract a set of categories and their properties” (Fernández, 2004, p. 86). It can involve coding the textual data word-by-word or line-by-line with codes that stay close to the data being examined, which Allen (2003) refers to as micro-analysis coding. This type of coding provides correctives on the GT method, as it helps to prevent the researcher from simply imposing preconceived ideas on to the data (Charmaz, 2006). However, micro-analysis coding can be somewhat perplexing (Allen, 2003). For example, coding word-for-word can result in confusion to a point where focus is lost, especially in research situations where there are numerous pages of textual data. Instead, Allen suggests key-point coding where more focus is placed on *what is going on in the data*, rather than the “words used to describe incidents” (Fernández, 2004, p. 86). This style of coding is similar to line-by-line coding. Here, all data is carefully and thoroughly read through numerous passes. Important points in textual data are identified and marked as key-points, which are then used to establish codes from the data.

Focused Coding

Focused coding initiates the second stage of GT coding, and generates codes that are “more directed, selective and conceptual” than those in open coding (Charmaz, 2006, p. 57). It involves working with the most significant and frequent initial codes to work through large amounts of data (Charmaz, 2006). Focused coding enables the researcher to “move across interviews and observations and compare people’s experiences, actions, and interpretations” (Charmaz, 2006, p. 59). In effect, this coding process helps to examine, expand, refine and improve the adequacy of initial codes and iteratively develop categories.

Theoretical Coding

Theoretical coding integrates previously accumulated codes. Theoretical coding assists the researcher to “specify possible relationships between categories developed in focus coding” (Charmaz, 2006, p. 63). This is done by “generating hypotheses for integration into a theory” and is a flexible activity that gives rise to fresh perspectives and broader pictures (Fernández, 2004, p. 86). He adds that “flexibility implies theoretical sensitivity to a number

of possible coding paradigms, or coding families, consciously avoiding over-focusing on one possible explanation” (p. 86). Open coding focused on taking data segments apart and coding them, while in theoretical coding “the fractured story is weaved back together again” (Glaser, 1978, p. 78 as cited in Charmaz, 2006, p. 63).

Selective Coding

Selective coding starts when patterns begin to emerge in data (Fernández, 2004). This process requires the selection of a core variable which is the “central phenomenon that has emerged” from GT coding (Douglas, 2003, p. 50). Böhm (2004) suggests that by this point in the analysis, the researcher has actively generated a substantial amount of categories, memos and diagrams. He recommends that the researcher repeatedly asks “which phenomena are central” to the inquiry and thus generates appropriate theoretical memos (p. 273). Additionally, all other focused codes relate directly or indirectly to the core variable and usually characterize “context, conditions, actions, interactions and outcomes”, that is, they represent relationships to the core variable (Douglas, 2003, p. 50).

3.7.2 Theoretical Memos

Theoretical memos are the researcher’s written thoughts about the data and can take the form of theoretical questions, ideas about codes and their relationships, and hypotheses (Douglas, 2003) which help to clarify and direct subsequent coding (Charmaz, 2006). They serve as a “basis for theory integration and ultimately generation” (Douglas, 2003, p. 51) and keep the researcher aware about their “potential effects on the data” (McGhee, Marland, & Atkinson, 2007, p. 335). Theoretical memo writing occurs throughout the entire research process, and starts almost simultaneously with open coding (Fernández, 2004). Böhm (2004) adds that this process helps researchers to distance themselves from other activities and engage with their thoughts and ideas on specific codes and categories. Additionally, it helps researchers “go beyond purely descriptive work” and can serve as a starting point for the manuscript’s write-up (Böhm, 2004, p. 271). The researcher continues to write memos right up to the study’s closure. Memos “provide freedom, flexibility, and enhance creativity” and “raise the theoretical level via a continuous process of comparison and conceptualisation” (Fernández, 2004, p. 86).

Visual Memos (Diagrams)

Diagrams offer visual representations of the relationships between the various codes and categories that emerge from ongoing data analysis. Charmaz (2006) recommends the use of diagrams (such as clustering) for theory building. Rodon and Pastor (2007) point out that there is no “systematic way of presenting diagrams and integrating them in GT” (p. 77). The researcher needs to identify their own style that is relevant to the inquiry and together with memos, diagrams can offer a “vehicle” for researcher creativity (Rodon & Pastor, 2007, p. 80).

3.7.3 Theoretical Sampling

In GT, sampling is not random nor is it pre-planned. Instead, sampling is driven by the emerging theory (Fernández, 2004). Researchers use theoretical sampling to “sample events that are indicative of categories, their properties and dimensions, so that they can be developed and conceptually related” (Douglas, 2003, p. 51). As data analysis progresses, concepts and theory starts to emerge. The researcher uses theoretical sampling by selecting subsequent individuals, situations and places in order to further develop the emerging theory (Goulding, 1999). Theoretical memo writing helps the researcher identify incomplete concepts and categories and leads to theoretical sampling (Charmaz, 2006). Thus, theoretical sampling is emergent and gets more focused as the theory being developed gets focused (Charmaz, 2006). Additionally, it takes place throughout the duration of the study (Fernández, 2004).

3.7.4 Theoretical Saturation

Theoretical sampling ends when theoretical saturation is reached. Fernández (2004) suggests that this occurs when additional sampling fails to add “significant value to the study (i.e. new categories or properties)” (p. 87). However, Charmaz (2006) warns researchers not to confuse saturation with repetition of events and descriptions. She points to the following quote by Glaser: “Saturation is not seeing the same pattern over and over again. It is the conceptualization of comparisons of these incidents which yield different properties of the pattern, until no new properties of the pattern emerge. This yields the conceptual density that when integrated into hypotheses make up the body of the generated grounded theory with theoretical completeness” (Glaser, 2001, p. 191 as cited in Charmaz, 2006, p. 113).

3.7.5 Theoretical Sorting and Integration

Like the other GT processes mentioned above, theoretical sorting and integration are inter-related processes that take place throughout the study (Charmaz, 2006). Theoretical memos create the content of the dissertation; therefore sorting and integration help the researcher to make conceptual sense of the analysis. However, sorting goes beyond just sorting paper, it assists the research with the emerging theory. In GT, “sorting gives you a logic for organising your analysis and a way of creating and refining theoretical links that prompts you to make comparisons between categories” (p. 115). Whilst integration “makes the relationships [emerging from sorting and constant comparisons] intelligible” (p. 120). Additionally, diagramming sharpens such relationships and adds to the analytical frame of the study (Charmaz, 2006).

3.8 Framework to ensure the Study’s Rigour

Finlay (2006) suggests that a major concern challenging qualitative research is the issue of quality and trustworthiness. There has been considerable debate over how the quality of

qualitative research can be determined and which criteria should be used satisfy it. According to Rolfe (2006), focus must be placed on “individual judgements of individual studies”, and the researcher’s exercise of reflexivity (p. 309). Furthermore, the “actual course of the research process” must be presented rather than an “idealized version” (p. 309).

This assertion complements Mason’s (2002) view on the quality of research. That is, researchers must reflect “on the quality of your methods in relation to your research questions, and on how well they produce relevant data which can be used in constructing your explanation” (p. 189). Mason suggests that the foundation of quality assurance lies in “thorough, careful, honest and accurate” (p. 188) research questions and the researcher’s ability to demonstrate data generation and analysis processes appropriate to such questions. In light of the arguments made above, this section discusses the quality considerations of the study. Certain quality criteria that are deemed appropriate are identified and described in relation to their utility in this study. Justification for the relevance of *data generation and analysis processes* to the research questions are made through the discussion of decisions made by the researcher (see Chapter 4).

Guba and Lincoln offer criteria for the constructivism paradigm to assess both the data and its interpretation. The criteria encompass *trustworthiness* of a qualitative study and parallels criteria used in ‘conventional’ positivist evaluation (Guba & Lincoln, 1989). Demonstrating rigour in positivist evaluation involves satisfying four main criteria: internal validity, external validity, reliability, and objectivity. These four served as the basis of Guba and Lincoln’s evaluation category of trustworthiness. By “substituting constructivist for positivist ontology and epistemology” (p. 236), they developed the following trustworthiness criteria for judging the rigour: credibility, transferability, dependability, and confirmability.

3.8.1 Framework for Trustworthiness

Credibility refers to activities that improve the likelihood of producing “credible findings and interpretations” (Lincoln & Guba, 1985, p. 301). Guba and Lincoln (1989) suggest six techniques for credibility: prolonged engagement, persistent observation, peer debriefing, negative case analysis progressive subjectivity, and member checks. These activities are explained using the work of Guba and Lincoln (1989, pp. 236 - 242) and discussed in relation to their use in this study.

Prolonged engagement: helps the researcher to “overcome the effects of misinformation” and establish “rapport” and “trust” with respondents, which is “necessary to uncover constructions” (p. 237).

Persistent observation: enables the researcher to “identify those characteristics and elements in the situation that are most relevant to the problem or issue being pursued and [to focus] on them in detail” (p. 237).

Peer debriefing: assists the researcher in “testing out” findings and helps the researcher to understand their “posture”, “values” and “role” in the inquiry (p. 237).

Progressive Subjectivity: provides the researcher with a way to “check” that the constructions produced by the inquiry are “joint” constructions (p. 238). Constructivist principles of qualitative research require that the researcher’s constructions do not have privilege over others. Progressive subjectivity allows the researcher to examine the level of privilege given to the researcher’s constructions.

Member checks: aim to ensure that participants’ original constructions have remained as they meant them to be. That is, member checking enables the researcher to check their data and interpretations with those who provided the original constructions (that served to establish the data and interpretations). Guba and Lincoln argue that this activity “is the single most critical technique for establishing credibility” (p. 239).

Transferability deals with the generalisability of the inquiry’s findings. It refers to the degree to which this study has relevance and applicability to other contexts and settings. Guba and Lincoln suggest that the main technique for establishing this is “thick descriptions” (p. 241).

Dependability refers to the reliability and stability of the data throughout the duration of the study. To demonstrate dependability, Guba and Lincoln recommend “documenting the logic of processes and method decisions” (p. 242), which they refer to as the dependability audit.

Confirmability is concerned with “assuring that data, interpretations, and outcomes of inquiries are rooted in contexts and persons apart from the evaluator” (p. 243). That is, it confirms that data and interpretations are not just invented by the researcher’s mind.

3.9 Chapter Summary

This chapter described the methodological approach adopted in this study. Research paradigm considerations guiding the research process were outlined and the rationale for using grounded theory perspectives was presented. The chapter concluded with a discussion on evaluative criteria in qualitative research to resolve concerns of quality and trustworthiness of this study. The next chapter presents how the researcher actually conducted the inquiry and discusses the data collection and analysis methods used.

4 Methods

4.1 Introduction

The previous chapter provided a methodological framework of this study. It described research paradigm considerations, issues of data collection and data analysis guided by grounded theory perspectives. In essence, it discussed the theory underpinning the strategy adopted in the conduct of this study.

This chapter serves to link the methodology to the research strategy. It illustrates how the researcher actually conducted the inquiry and discusses the data collection and analysis processes. The chapter concludes with a discussion on how trustworthiness of the results was established.

4.2 Research Strategy

This study adopted an iterative research process (as illustrated in Figure 4.1). The researcher started this study with a broad research interest in how people learn in workplace contexts. After a brief review of literature in the broad research area (open and unspecific) and engaging with supervisors, exploratory research questions were established and a research proposal developed. An in-depth review of literature on qualitative research methodologies provided guidance to the entire research process. The research then engaged in a series of data collection and data analysis cycles. This stage cultivated the theory emerging from data, and provided further guidance and focus to the iterative data collection and analysis cycles.

Once theoretical saturation had been reached, the researcher moved to the findings, interpretation and reporting stage. Here an extensive and focused literature analysis was conducted. This assisted the researcher to interpret the findings and to develop a model for Workplace Learning Systems. Throughout the iterative research process, the researcher made use of peer debriefing by engaging with supervisors (operating in the field of constructivist qualitative inquiry). Such engagements afforded the researcher with an opportunity to discuss methodological steps, findings, and field stresses associated with this research.

4.3 Approach to Data Collection

Grounded Theory methods facilitate the emergence of theory from data, therefore collecting both *good* data and *enough* data is vital to producing credible research outcomes. A description of how the researcher has enacted data collection in this study is now presented.

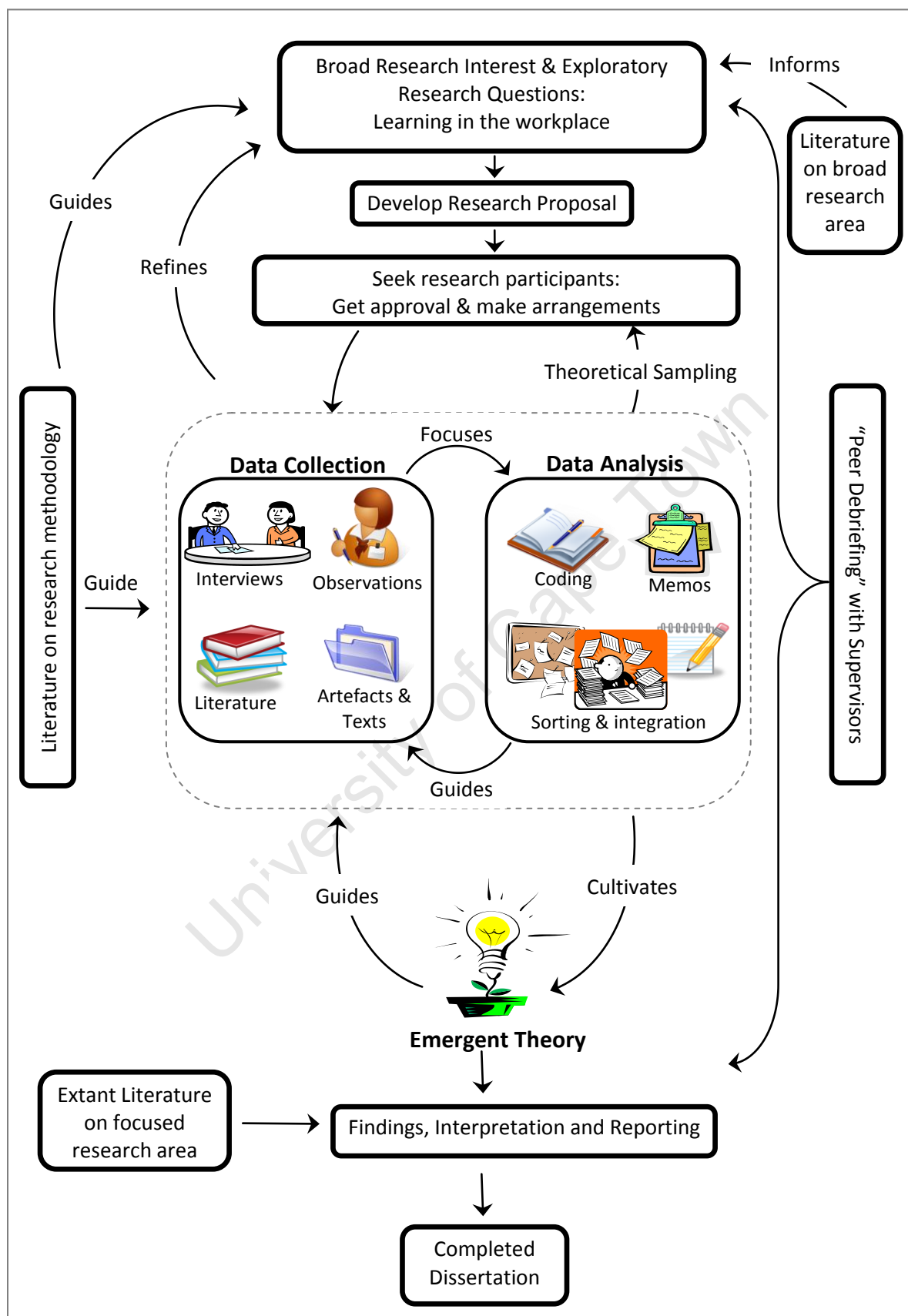


Figure 4.1: Iterative Research Design.

This study comprised of four phases, Figure 4.2 highlights their key aspects.

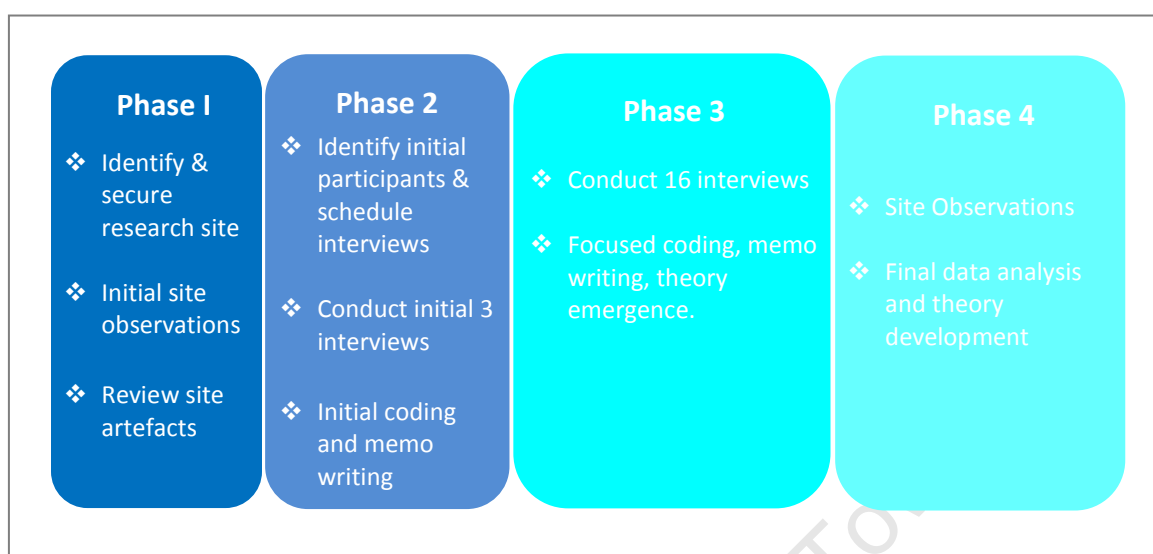


Figure 4.2: Research Study Phases.

4.3.1 Sampling: site and participant selection

Sampling decisions made in this study were largely based on one fundamental criterion: to obtain rich data in order to answer the research questions. Sampling decisions influenced all data source considerations, including participants, research site, and activities for data collection.

Sampling was a flexible process that took place throughout this research study and was informed by the iterative data analysis cycles. This study adopted a theoretical sampling approach, where data gathering was directed by three guiding principles:

- ❖ Sampling decisions were made based on emerging theory.
- ❖ Participants were selected on the basis of their knowledge and 'expertise' of the phenomenon being investigated. That does not mean the researcher sought expert learners. Instead, participants who have experienced and are experiencing learning within the workplace were selected.
- ❖ Sampling process took place throughout the study until theoretical saturation occurred, that is, no new themes emerged from data.

Site Selection

The outcome of this inquiry is to understand how individuals learn in the workplace and how organisations can facilitate such learning. Data gathering in practice commences with site selection, which consequently influences the potential participant pool and richness of data. Thus, selecting an appropriate research site was important in this study and the selection was purposive in nature. Initial review of literature on the broad research area

identified that an organisation's *learning culture* influences how *learning in the workplace* is manifested. To investigate how organisations can facilitate workplace learning, consideration must be given to their learning cultures.

In line with grounded theory principles, site considerations of this study remained flexible and the researcher was open to emerging insights from Phase 1 to guide Phase 2. In light of the research questions, a research site (organisation) with a strong learning culture¹ was sought during Phase 1. The rationale being that such a site would provide access to participants that are more aware of and sensitive to their learning within the site. This would, in turn, improve the likelihood of gathering in-depth information and characteristics of workplace learning. The researcher identified an organisation operating within the manufacturing sector that is regarded as a leader in their industry and has the reputation of having a strong learning culture.

A research proposal was developed and submitted to the organisation. Once access to the site was granted, participant selection could begin. From early data collection and analysis cycles in Phase 1 and Phase 2, the researcher found that the selected site provided rich data. Emerging theoretically relevant constructs led the researcher to conduct the subsequent phases within the same selected site. This allowed the researcher to delve deeper into emerging ideas and focus all her time and attention on one location.

Participant Selection

As with site selection, participant selection too was purposeful and theoretically based. Participant selection in the initial phase was based on insightful judgements made by the researcher, in relation to the research questions. Potential participants were grouped into four categories:

- ❖ Group 1: Individuals with 1 – 3 years of work experience as an engineer.
- ❖ Group 2: Individuals with 4 – 8 years of work experience as an engineer.
- ❖ Group 3: Individuals with 9+ years of work experience as an engineer.
- ❖ Group 4: Individuals with 5+ years of work experience in management.

Interview schedules with participants were based on participant availability. The nature of participants' line of work (24 hour operation of manufacturing plant, system breakdowns requiring immediate support, etc.) imposed constraints on interview schedules. The researcher allowed the data to serve as her guide. The first round of interviews conducted and analysed came from the following participants: one from Group 2, one from Group 3, and one from group 4. Data was analysed as it became available, that is, after each interview the researcher deployed coding methods. Early analysis indicated groups 3 and 4 as more informed data sources. This led the researcher to select two more participants from group 3, one from group 4 and one from group 1. As data analysis and collection progressed

¹ Organisations that have a culture which fosters and nurtures employee learning.

to Phase 2, participant selection became more discriminate and directed. Sampling focused on groups 3 and 4, with more concentration on the former. By the end of the research study (emerging category saturation reached), a total of 19 participants had been interviewed. Table 4.1 provides information about the study's sample.

Table 4.1: Research Participant Information.

Participant	Participant Category	Academic Qualifications	Role
1	Group 1	Bachelors Degree	Operations Line Team Leader
2	Group 1	Bachelors Degree	Trainee Engineer
3	Group 2	Masters Degree	Engineer
4	Group 2	Masters Degree	Engineer
5	Group 2	Masters Degree	Engineer
6	Group 3	Bachelors Degree	Engineer
7	Group 3	Bachelors Degree	Engineer
8	Group 3	Bachelors Degree	Engineer
9	Group 3	Bachelors Degree	Engineer
10	Group 3	Bachelors Degree	Operations Manager
11	Group 3	Bachelors Degree	Operations Manager
12	Group 3	Bachelors Degree	Operations Manager
13	Group 3	Masters Degree	Operations Manager
14	Group 3	Masters Degree	Operations Manager
15	Group 3	Masters Degree	Operations Manager
16	Group 4	Bachelors Degree	Head of Technical Division
17	Group 4	Doctor of Philosophy	Head of Technical Division
18	Group 4	Masters Degree	Executive Manager
19	Group 4	Masters Degree	Executive Manager

4.3.2 The Research Interview

This section provides an overview of the strategy used to conduct interviews for this study. Research interviews were composed of two parts: a semi-structured component and a focused component (using the repertory grid technique). Chapter 3 presented the theoretical principles guiding data collection methods. This section draws on these principles and describes the development of the interview procedure used to collect data from participants about their learning experiences within the workplace.

Interview preparation and environment

Potential interviewees from the groupings mentioned above were sent research participation invitations (see Appendix A1). They were provided with information on the researcher, the study's topic of interest, and participant confidentiality and identity protection. If they accepted the invitation to participate, interview schedules were

prepared and the actual interview sessions could begin. All interviews were one-on-one sessions between the researcher and participant and took place on site in a booked venue. The interview environment was an important consideration in data gathering. Since interviews took place during office hours, the researcher opted not to conduct them within the participants' office space. Utilizing a private venue within the building created a sense of ease for participants, with regard to other people watching and listening in. Additionally, it ensured that the interview disruptions were kept to a minimum (e.g. phone calls, colleague walk-ins). Interviews generally ran from 60 to 90 minutes. Each interview was recorded using a digital recorder, with the consent of each interviewee. During interviews, the interviewer sat adjacent to the interviewee, as opposed to sitting opposite the interviewee. This helped in creating more of an informal discussion style interview and ensured that neither party had to look at upside-down cards (during the repertory grid component of the interview).

Prior to entering the field, the researcher conducted trial interviews with colleagues to practice and improve her interviewing skills. This enabled the researcher to develop a research interview process (illustrated in Figure 4.3) discussed in detail in the next section.

Introduction of researcher and interview process

The researcher started each interview session by introducing herself, the study's topic, and provided a brief overview of the interview process. The researcher discussed the interviewee's rights regarding confidentiality, identity protection, and explained that they were at liberty to withdraw from the interview at anytime. Furthermore, interviewees' were informed that if they wished not to answer any specific questions during the interview, they could do so. These rights were subsequently reiterated during the interview session. All interviewees' were given an interview consent form and only after they signed did the interview begin. In this study, all 19 participants agreed to the interview terms and signed consent forms.

Semi-structured Interview Component

All data gathering procedures in this study have the explicit intention of understanding how participants learn whilst on the job and how their workplace can facilitate such learning, based on their experiences. The semi-structured component of the research interview provided the researcher with a focused yet flexible mechanism to understand the participants' learning experiences.

The semi-structured component generally centred around three key areas which varied in the depth of exploration. These areas served as 'prompts' and were not discussed in any rigid order or strict duration. They enabled and led to exploration of interviewee learning experiences as they were brought up. Table 4.2 provides an overview of the key areas, examples of questions used, and their utility in the interview.

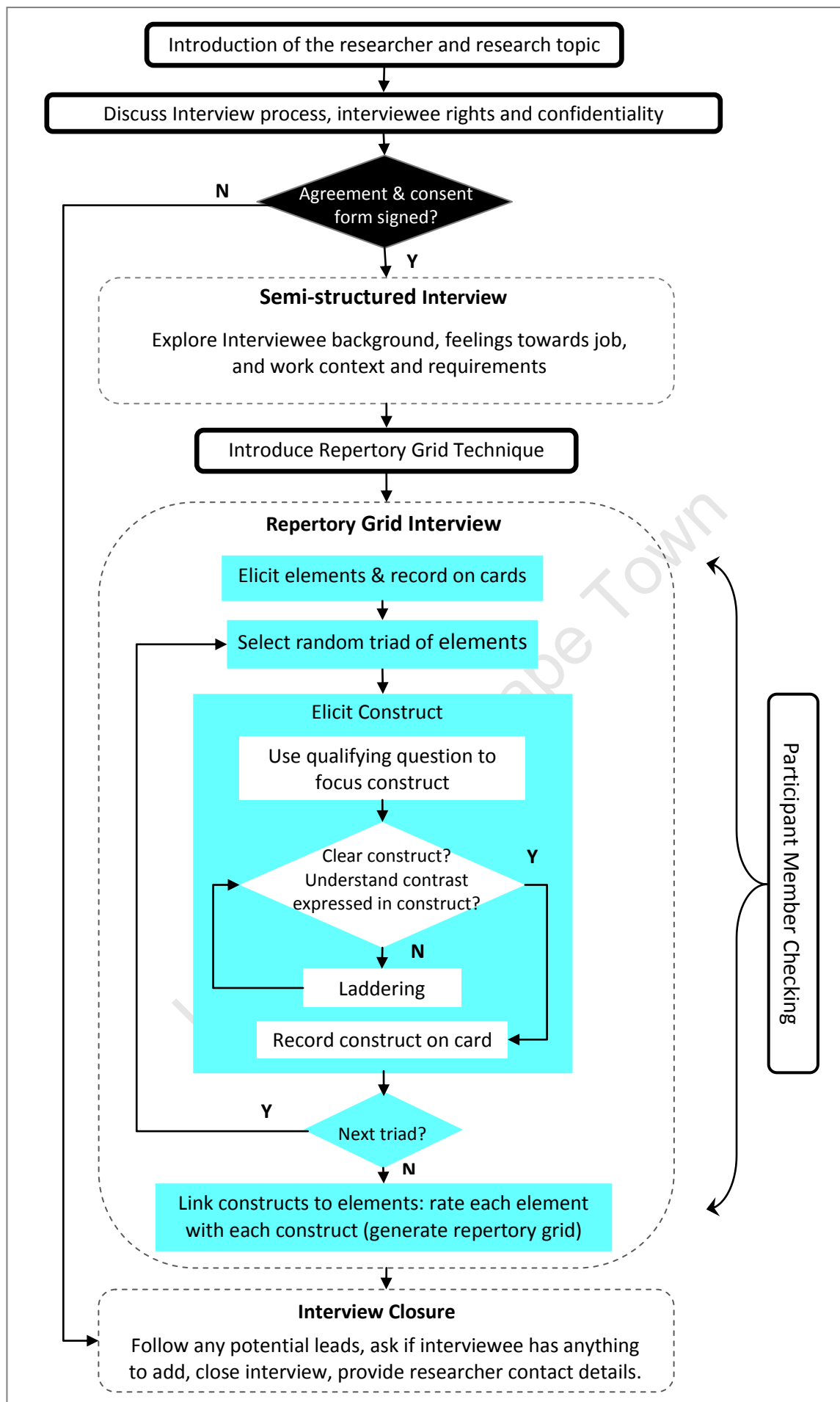


Figure 4.3: Research Interview Process

Table 4.2: Overview of Key Areas for Semi-structured Interview Component.

	Key Areas:		
	Interviewee background:	Feelings towards job and organisation:	Job requirements, tasks and objectives:
Key Questions:	Could you tell me about your academic background, and work experience prior to joining this organisation?	Enjoy working there? How would you describe your work environment?	What does your day-to-day job entail? What kind of work tasks are you involved in? What are the objectives of your current role?
Utility:	To understand interviewees' background and perception of previous work experience – in relation to current workplace.	To understand how interviewees' perceive their workplace	To understand interviewees' work demands, context, where and how they spend their time at work.

The focus of all data collection was to understand how participants learn whilst on the job. As the number of interviews progressed and concurrent analysis took place, the above key areas gave rise to further refined points of interest. These emerged as factors that influence participants' ability to learn and access to learning opportunities. Some of the emerging points of interest are listed below:

- ❖ Interviewees' perceptions of their:
 - ❖ *Work*: Clear work objectives? Degree of exposure to change? Extent of feedback?
 - ❖ *Work Environment*: Understanding of organisations operational context? The organisation's objectives? Experience in different work areas?
 - ❖ *Social Interaction Environment*: How groups experience and shape work of the organisation? Exposure to professionals outside the organisation? How much value the organisation places on individual work?
 - ❖ *Managerial Environment*: Degree of management support given to learning? Types of rewards and recognition given? Does management provide feedback?
- ❖ Interviewees' perception of terms such as structured, unstructured, formal and informal.
- ❖ Interviewees' preferences for learning: Structured, unstructured, formal or informal situation.
- ❖ Interviewee's preference for 'getting things done' in their work activities: Structured, unstructured, formal or informal situation.

- ❖ Understanding the organisation's strategic drives and interviewees' perceptions of and feelings towards these drives.
- ❖ Interviewees' work time and activities: How interviewees' spend their time: Amount of time spent alone, interacting in groups, meetings, etc. What type of activities are they involved in: Formal? Informal? Self-initiated? Job-required?
- ❖ Understanding interviewees' access to formal training programmes and how they perceive the relevance of such programmes to their work practice.

These points of interest were not limited to the semi-structured component of the interview. In fact, they were often pursued during the laddering process of the repertory grid component of the research interview (discussed in the next section).

Repertory Grid Interview Component

Chapter 3 presented the theoretical underpinnings of the repertory grid technique (repgrid), discussing its origin in Kelly's personal construct theory and the basic assumptions underpinning it. This section will now describe how the researcher conducted the focused component of the research interviews in this study, by drawing on the principles presented in the previous chapter. The middle section of Figure 4.3 illustrates the decision making processes in the repgrid component. The researcher started this interview component by briefly describing the repgrid and what it would entail. This was followed by the element elicitation procedure.

Element Elicitation

Elements for the repgrid interview component were role relations of the participant (such as colleagues) and were selected such that they came from the domain in which participants interact. The researcher decided to use *people that the interviewees' interact with frequently* as elements. This was because firstly, the topic of learning is quite a complex one to grasp and the researcher anticipated that participants would have difficulty in communicating their constructs surrounding their learning experiences without a tangible element to focus on. Secondly, since the concept of Repgrid was completely new to interviewees, the researcher felt it would be easier for them to name people they interact with as elements, instead of characteristics of learning itself (which is often an intangible and thus difficult quantity for people).

Participants were asked to name one person for each of the following **element elicitation questions**:

1. Someone you would approach if you had a problem: Either technical or non-technical?
2. Someone who is a role model or mentor for you?

3. Someone with whom you would approach to discuss something interesting related to your profession?
4. Someone with whom you enjoy sharing work experiences or work related knowledge with?
5. Someone with whom you find it difficult to exchange knowledge or ideas?

Sometimes interviewees had difficulty in naming an individual for this question. The researcher then used the following element eliciting question instead:

Someone you are least likely to approach to engage in problem-solving activities?

6. Someone with whom you enjoy discussing your career development or career aspirations with?

The above element eliciting questions were carefully crafted by the researcher in order to elicit a balanced construct spectrum. That is, they were aimed at getting interviewees to make both positive and negative considerations when construct elicitation took place in the next stage of the repgrid interview. Once 6 elements had been named, the researcher wrote their initials on cards (referred to as element cards), labelling each (e1, e2... e6). An example of an elicited element card from one of the research interviews in this study is shown in Figure 4.4 below. Where, “J.P” stands for John Peterson (assigned pseudonym).

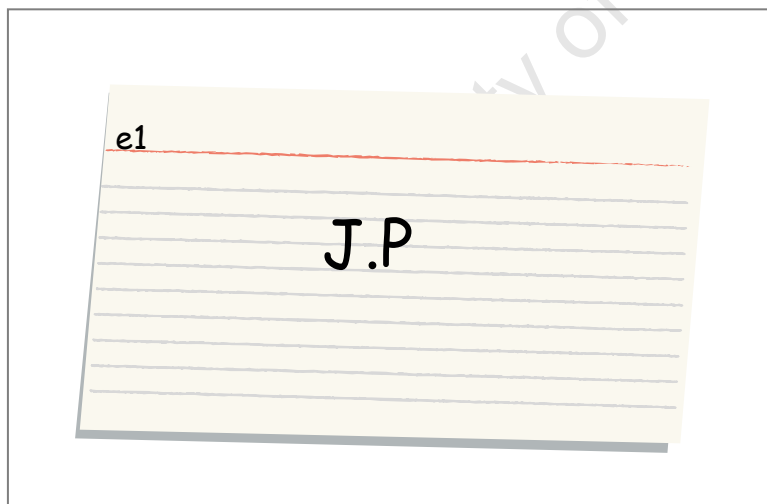


Figure 4.4: Example of element card.

Construct Elicitation:

Next, a series of element card comparisons were done to elicit constructs from interviewees about their perception of their learning experiences. The researcher randomly selected a triad (3) of element cards and placed them in a horizontal line on the table. The interviewee was then asked to organise the cards into two distinct groups. To do this the researcher made use of a **comparison-qualifying question**. That is, the researcher asked “Please group

the cards such that two are different from the third in terms of *what you learn or how you learn by interacting with him/her?*”.

This comparison-qualifying question was critical to the entire construct eliciting process and was asked **exactly** as shown above for each construct elicitation for each interview. Once the interviewee was asked to do this, they took a few moments to think about it and started playing around with the three cards until a final configuration was decided. Constructs are always bipolar expressions, thus one group (consisting of two cards) represented the emergent pole, which contrasted with the second group (consisting of one card) representing the implicit pole of the construct.

To assist the interviewee with this process the researcher made use of laddering techniques (as described in Chapter 3). Such techniques assisted the researcher in ensuring clear and detailed constructs were being elicited and that the researcher did in fact understand the contrast being expressed in the construct. Figure 4.5 illustrates the use of the laddering technique using a section of an interview conducted in this study. Probing questions are presented in bold text, and interviewee responses are shown below them. Italicised and bracketed text represents the purpose of each probing question.

The original construct of “Honest people I can learn from - Poor manager at work” produced the final detailed construct of “Provide constructive feedback - Provide unsupportive feedback”

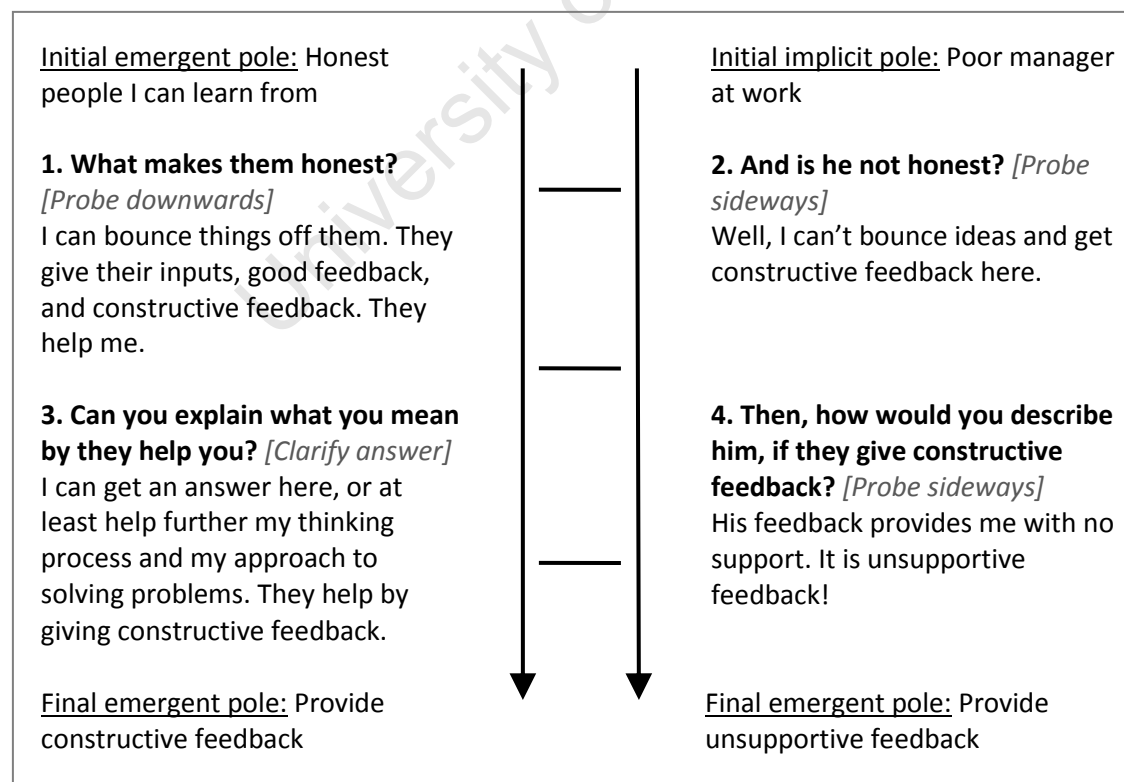


Figure 4.5: Laddering Technique.

To check that a clear construct had been elicited, the researcher expressed it back to the interviewee using his/her words as much as possible. Once the construct was clear, the researcher wrote the construct on a new card (construct card). This card was labelled (e.g. C1 for construct 1) and had the elements that made up the construct (e.g. e1 e2 e3 if elements 1, 2 and 3 were used to generate the triad). The researcher drew a line vertically half way through the card and always wrote the emergent pole on the left half and the implicit pole on the right half. An example of an elicited construct card from one of the research interviews in this study is shown in Figure 4.6.

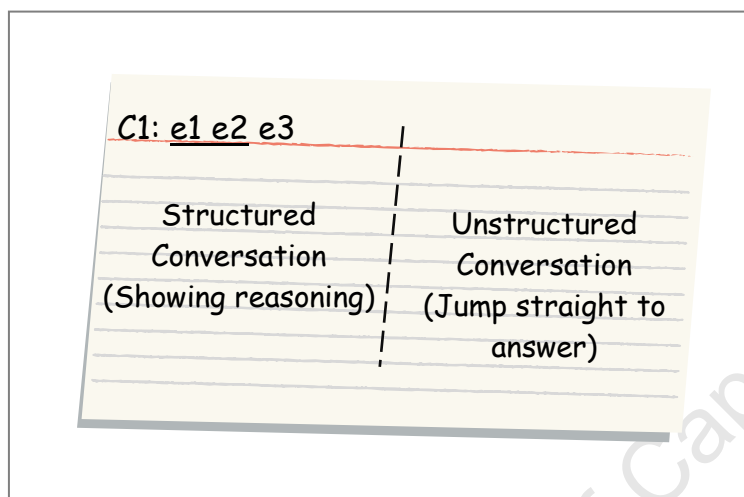


Figure 4.6: Example of construct card.

This marked the completion of construct elicitation for that specific triad and a new unique triad of element cards was selected and the process described above was repeated. This continued until a sufficient number of constructs had been elicited (generally 7 or 8 per interview).

Link Elements to Constructs: Rating the cards

The last part of the repgrid interview component involved linking elements to constructs. This activity actually generated the repertory grid and served as a mechanism to check that the researcher captured the precise meanings of interviewees' elicited constructs. Here the interviewee was asked to rate each of their elements against each of their constructs using a 5 point scale. The researcher placed the first construct (C1) on the table and drew a horizontal scale across the bottom of the construct card, where 1 was assigned to the emergent pole (left side) and 5 was assigned to the implicit pole (right side) as shown in Figure 4.7. Next, the researcher organised the element cards from first (e1) to last (e6) and placed the first one on the table. The interviewee was asked where this element resided on the scale of that particular construct. This process was repeated for each element card. Once all six elements had been rated, the researcher moved to the next construct and repeated the entire process until all constructs cards has been used. The rating of the last construct marked the end of the repgrid component of this interview.

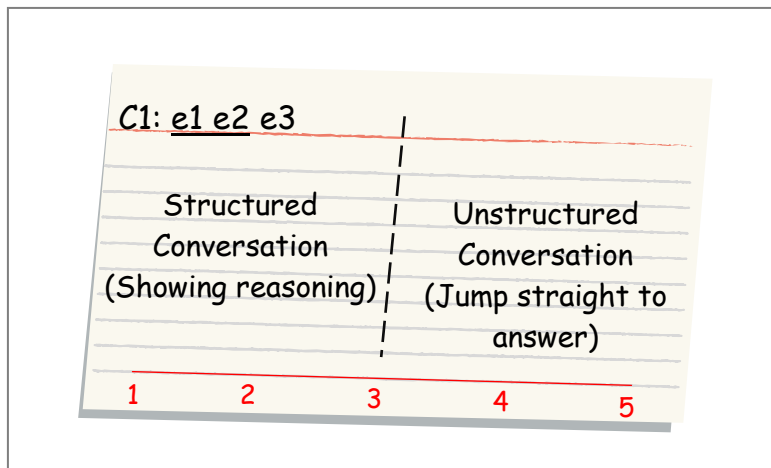


Figure 4.7: Example of construct card used during rating.

Interview Closure

This was the last part of the research interview and took a semi-structured form. It enabled the researcher to follow any potential leads from the repgrid component and resolve any uncertainties in the researcher's understanding of the interviewee's answers. It also gave the interviewee an opportunity to add anything to the interview that they felt was important. During latter interviews, the researcher often asked the interviewee "if you could change one thing in the organisation, what would it be?". Since this was the last thing asked in the interview, it was hoped answers would be in the area of learning and issues influencing their learning. The researcher then provided her contact details and assured interviewees that they could contact the researcher if they had any thoughts or queries regarding the study. Lastly, the researcher thanked the interviewee for his/her participation in this study, which marked the end of the session.

A sample transcript (and completed repertory grid) of an interview from this study can be found in Appendix A2.

Transcribing Interviews

After each interview had taken place, the researcher transcribed the interview recording. The aim was to produce transcripts that accurately captured how participants described perceptions of their workplace learning experiences during interviews. Due to the volume of audio recordings and time constraints of the research study, the services of a professional transcriber were enlisted. The researcher entered into a service contract with the transcriber, which ensured data confidentiality and participant protection (see Appendix A3). Both the researcher and the professional transcriber transcribed interviews, in order to increase the transcription throughput. After each transcript was received from the transcriber, the researcher proof-read the transcript while listening to the audio to ensure it was accurately captured.

Transcribing interviews improved the researcher's awareness about her interview practice, which helped in subsequent interview sessions. Additionally, interview transcripts were extremely useful in coding procedures of data analysis.

4.3.3 Research Observation Strategy

Observations were conducted to describe and record the natural behaviour of employees within the site (their workplace). The researcher observed and recorded employee behaviour during Phase 1 and Phase 4 of this study (shown in). Observations in Phase 1 helped the researcher to familiarize herself with the 'ways' of the organisation, its language, practices, and to pick up on the patterns of employees' natural behaviour. All of which were useful in guiding and focusing the research interviews. Observations in Phase 4 took place after all interviews were completed and enabled the researcher to review her emerging theory and clarify any issues with participants that were interviewed.

During Phase 2 and 3 of this study, the researcher was primarily involved in interviews on site. During the interviews, the researcher did observe participant behaviour but was unable to note it down immediately due to the type of interview strategy used (active and participatory repgrid). Additionally, since the researcher was sitting next to the interviewee (for ease of repgrid), noting behaviour would have distracted interviewees and reduced their level of comfort in answering the researcher's question (feelings of being watched, etc.).

The researcher was accepted as a part of the organisation, where she played a marginal role and simply observed behaviour and often asked questions. This enabled her to conduct informal conversational interviews with participants in the situation and take notes. The researcher observed employee behaviour in various places on site, including meetings, informal chats between colleagues, telephone conversations, and lunchtime cafeteria interactions. Observations were recorded in the form of field notes, where:

- ❖ **Observational notes:** Contained descriptions of events, conversations, interactions and behaviour patterns of subjects. These notes simply described everything the researcher saw and heard without attaching any meanings to them.
- ❖ **Theoretical notes:** Contained the researcher's interpretations of the observational notes. They helped the researcher to make analytical sense of observed data.
- ❖ **Reflection notes:** Contained the researcher's reflections and experiences on conducting the actual observations. They helped the researcher remain aware of her observation practice and served to help improve this practice.

To address concerns of researcher bias, the researcher frequently made 'expectation notes' prior to observation sessions throughout the observation activity. Expectation notes briefly described ideas about what the researcher was expecting to find during the day's

observation. Once the actual observation was complete, the researcher would refer to her expectation notes while writing theoretical and reflection notes. This provided a way for the researcher to check that she was not simply seeing what she wanted to see and added to her reflexive practice.

4.4 Approach to Data Analysis

The previous section discussed data gathering processes involved in this study. This section will now describe how the researcher conducted data analysis by drawing on the grounded theory principles presented in Chapter 3. Central to the data analysis strategy of this study is the use of constant comparative methods. This refers to the fusion of theoretical sampling, coding, and data analysis processes. The use of this analysis strategy enabled the researcher to not only make sense of and identify patterns in the data, but also provided focus and direction to further data collection processes, all of which assisted with theory generation. Figure 4.8 illustrates the theory building process of this research study, which started when the researcher entered the field and ended when this dissertation was written up.

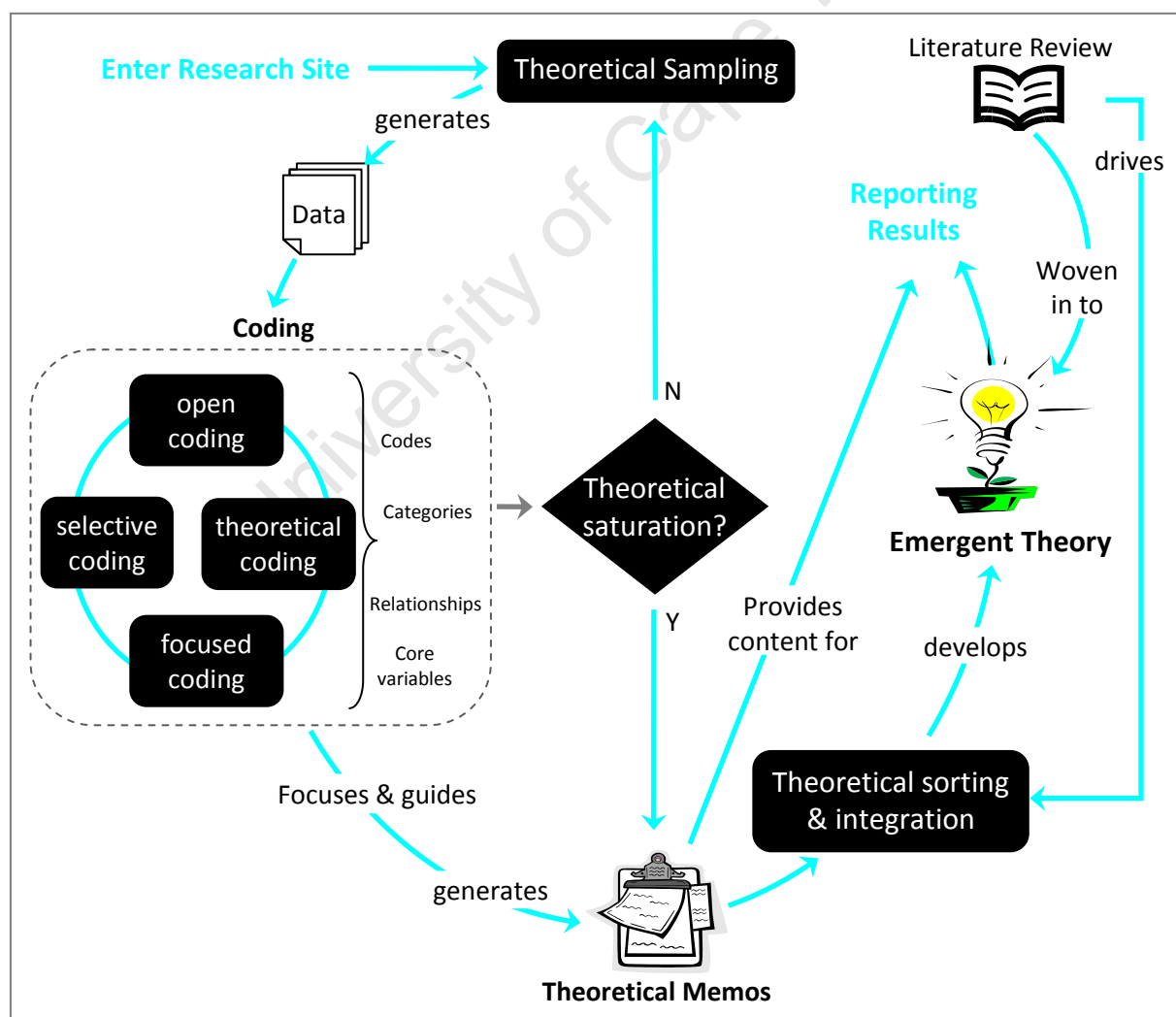


Figure 4.8: Theory building process.

Once access was gained, the researcher **entered the research site**. This initiated the **Theoretical Sampling** process, where observations and interviews took place. During the early stages of the study, sampling decisions were made based on insightful judgements made by the researcher, in relation to the research questions, since no data analysis had taken place yet (see Section 4.2.1). Prior to the commencement of the interviews, the researcher spent time in the organisation observing employee behaviour. This helped the researcher to familiarize herself with the 'ways' of the organisation, its language, and pick up on the patterns of employees' natural behaviour. All of which were useful in guiding and focusing the research interviews. Once the first interview transcript and observation notes were completed, data analysis began with **open coding**.

The researcher read all text line-by-line. Important points in data were identified and marked as key-points, which were then used to establish codes. Table 4.3 illustrates key-point coding using an excerpt from an interview. This was an iterative process, where numerous passes were made through the data. In the coding process, the researcher did not advantage any one data source over the other. That is, codes from both interview and observation data were given equal weight during analysis. Additionally, when analysing interviews, coding was done from the first line right up to the last line, including the repertory grid technique (repgrid) interview component. In fact, the researcher found that the repgrid laddering process was often the richest source of data.

Table 4.3: Example of key-point coding.

Transcript Excerpt	Key Point	Open Code
<i>So I was exposed to that and it allowed me to get a little bit of exposure into marketing as well which helped me learn the big picture.</i>	K.P 5	Exposure to other departments
With it being packaging and being personal products as packaging specifically is focused on marketing the product, so quite a lot of <i>interaction with the marketing side of the business</i> .	K.P 6	Interacting with other departments
We had all - I still say we – Star Products had the head office in Jo'burg. It is quite nice when you have a <i>head office close to a manufacturing environment</i> .	K.P 7	Proximity to other departments
<i>Good interaction between the two, you share a lot and you sit in to a lot of project meetings - that is slightly different to what we have here because it is that much further from central office and the marketing department so you don't have that much interaction.</i>	K.P 8	share knowledge by interacting
That was also quite nice because <i>it gave you a lot of the lingo</i> in the business and what the business is thinking.	K.P 9	learn 'the lingo'
What tends to happen in a manufacturing environment is you <i>become very internally focused around engineering and production</i> and a lot of those things.	K.P 10	Interacting with other departments broadens view of work context.
<i>So you consciously have to make a concerted effort into getting into marketing</i> if you are in a region where you don't have that much interaction with the central office that you would have classically with a manufacturing site close to an office.	K.P 11	Taking initiative to interact

The open coding strategy used in this study included coding key points in element elicitation, construct elicitation, and rating procedures text. In the first interview the researcher asked questions like “What is going on in the data?” and “How does the employee perceive his/her learning within the workplace?” to code the text. Coding of subsequent data (interviews or observations) was done with the previously coded text in mind (**focused coding**). This is how the researcher used constant comparison in this study; coding and analysing new data with the emerging theory in mind. By the end of all open coding activities, a total of 462 codes were generated. Initial coding of data led the researcher to a crucial analysis activity in this study, writing **theoretical memos**. Memos were produced throughout this study, starting from initial coding of the first data set right up to the write-up of this dissertation. Memo writing did not take conventional forms such as reminder notes or organisation’s internal communication. They served to capture the researcher’s thoughts, ideas, and questions about the data. They assisted in focusing subsequent interviews and coding.

Additionally, they provided useful content for this dissertation. Right from the early stages of memo writing, the researcher was involved in **theoretical sorting and integration**, which continued until this dissertation was fully written up. Sorting and integration helped to make sense of the results as they surfaced and played a critical role in helping the researcher to cope with data analysis without getting ‘lost’ in the vast amount of raw and coded data.

Memo generation continuously led the researcher to back to coding activities, moving from open coding to **theoretical coding**. Here, with the support of memos, the researcher started to identify relationships between codes. This coding method helped the researcher to integrate accumulated codes, strengthening the emerging theory. It was a flexible activity in which the researcher constantly reviewed existing memos, identified relationships between accumulated codes and iteratively grouped them together producing variables, categories, and sub-categories. This process took the researcher back to memo writing activities; since new thoughts, ideas, and questions about data surfaced. Theoretical memos now started taking the form of visual memos, offering visual representations of the relationships between the various codes and categories.

Next, the researcher was involved in **selective coding**. Within the data, a key pattern began to emerge. The core variable in this study was ‘Structured Interaction’ and was the central phenomenon that emerged in this inquiry. Again, this coding method generated more and more theoretical memos. The researcher constantly reviewed accumulated categories and memos, asking one key question, “From the data, what is central to participants’ perception and preference of how they learn in the workplace?”. Additionally, all other categories and codes related to Structured Interactions (either directly or indirectly). Relationships between codes become even more clear and refined. Visual memos from theoretical coding were sharpened and the researcher’s view of the ‘big picture’ became clearer.

The above description of data analysis methods used by the researcher lays the foundation to discuss what is perhaps the most important aspect of the Grounded Theory strategy used in this study; **theoretical saturation**. The researcher used theoretical saturation to decide when key categories and relationships between them were *complete*. That is, further data sampling no longer generated new categories or properties. Even though the researcher did observe a strong emerging pattern related to Structured Interactions (core category), theoretical saturation was not about simply observing this same pattern over and over. Instead, it was achieved when subsequent data sets delivered no new qualities and properties of the pattern relating to the core category. This is the mechanism which enabled the completion of theoretical sampling for this study.

Once the researcher had reached the final stages of her analysis, attention was given to literature. Theoretical sorting and integration, and memo content served as a driving force in the literature review. They helped the researcher conduct a sharply focused and thorough literature search, which was relevant and strengthened the emerging theory. The final activity in this study was the reporting of results and marked the end of data analysis.

4.5 Ensuring Trustworthiness

Chapter 3 discussed concerns of quality and trustworthiness in qualitative research. This section highlights how the researcher ensured rigour in this dissertation, adopting key aspects from Chapter 3. Ensuring quality and trustworthiness of qualitative work goes beyond simply meeting a certain set criteria. This researcher draws on Mason's (2002) view on quality. That is, the foundation of quality assurance lies in "thorough, careful, honest and accurate" (p. 188) research questions and the researcher's ability to demonstrate data generation and analysis processes appropriate to such questions. Throughout the discussion of this study's guiding methodology (Chapter 3) and adopted methods (Chapter 4), the researcher has made arguments for the relevance of data gathering and analysis processes, in relation to the research questions. Furthermore, as Rolfe (2006) suggests, the "actual course of the research process" has been presented in this chapter, rather than an "idealized version" (p. 309).

Coupled with the above, Guba and Lincoln's criteria for trustworthiness have been invaluable in guiding the researcher through data gathering and analysis processes in this study. Notions of credibility, transferability, dependability, and confirmability of both data and interpretation have been central tenants for demonstrating rigour. Table 4.4 summarises the relation between decisions made by the researcher, and their impact on demonstrating trustworthiness in this study.

Table 4.4: Demonstrating Trustworthiness.

Demonstrating Trustworthiness			
		Activity	Criteria
Researcher's Decisions	Paradigm Considerations: Constructivist paradigm (Section 3.3)	Documenting logic of processes and method decisions.	Dependability
	Data Collection Strategies: Iterative research design (Figure 4.1)	Documenting logic of processes and method decisions.	Dependability
	Sampling Strategy (Section 4.2.1)	Audit	Confirmability
	Interview process (Figure 4.3)	Member checking	Credibility
	Observation strategy (Section 4.2.3)	Prolonged engagement	Credibility
	Data Analysis Strategies: Iterative research design (Figure 4.1)	Documenting logic of processes and method decisions.	Dependability
	Grounded Theory Principles (sections 3.7, 4.2, 4.3, Figure 4.8)	Thick description	Transferability
	Transcribing interviews, reflective notes, (Sections 4.2.2, 4.2.3)		Dependability
	Feedback from peers (Figure 4.2, Section 4.3)	Peer debriefing	Credibility

4.5.1 Credibility of findings and interpretation

- ❖ In this study, prolonged engagement and persistent observation are evident from the researcher's member checking technique and observation strategy. The researcher employed a two phase observation strategy. The first phase took place prior to the commencement of the interview schedule, and the next dedicated observation phase (phase 4) was conducted after completion of all interviews. Phase 1 enabled the researcher to immerse herself in the organisation's context, familiarise herself with the 'language' of the organisation, and identify elements in the organisation's context that are relevant to employee learning within their workplace. Phase 4 added to the richness of the understanding developed by both phase 1 of observations and data gathered from interviews. Additionally, phase 4 assisted in the member checking activity.
- ❖ The researcher made use of peer debriefing techniques by engaging with other researchers operating in the field of constructivist qualitative inquiry. Such engagements afforded the researcher with an opportunity to discuss methodological steps, findings, and field stresses associated with this dissertation.
- ❖ During this study, the researcher adopted *good* data gathering and investigation practices. This was achieved by use of reflection notes (see Section 4.2.3). The researcher documented not only what was observed during contact with the research situation (observations and interviews), but also kept a record of thoughts and opinions prior to entering research situations. Peer debriefing activities assisted in the

researcher's progressive subjectivity technique, as prior thoughts and opinions were constantly compared with emerging constructions of the inquiry.

- ❖ The researcher demonstrates member checking by the interview technique deployed in this study. Using a repertory grid approach to interviewing enabled the researcher to assess the intent of interviewees' responses. The use of construct cards enabled interviewees to think thoroughly about their intended responses, correct them (if needed) and most importantly establish agreement (about their meaning) with the interviewer (by writing their constructs on the cards). The laddering process in repertory grid technique was central in facilitating the above agreement of understanding and puts the participant 'on record'. The construct rating exercise in the repertory grid technique gave interviewees' further opportunity to not only share their understanding of the constructs, but also to make corrections if needed.

4.5.2 Transferability of the inquiry's findings

The researcher demonstrates making good transferability judgements by providing "an extensive and careful description of the time, the place, the context, the culture" (Guba & Lincoln, 1989, p. 241) of the features of this study. Such features include a thorough description of the organisation in which data was gathered, its culture, members and the actual techniques (based on the grounded theory approach) employed to investigate such features.

4.5.3 Dependability and Confirmability

Reliability and stability of the data throughout the duration of the study is demonstrated by documenting the logic of processes and method decisions used in data collection (Section 4.2) and analysis (Section 4.3). Confirmability is demonstrated by the finalised dissertation document and is subject to examination.

4.6 Chapter Summary

This chapter linked the methodology of this study to its research strategy. It described the methods employed by the researcher in the design, data collection, and data analysis processes. Particular attention was given to issues of research quality and rigour during discussions of methods. The next chapter will present the results obtained from this study.

5 Results

5.1 Introduction

Chapter 3 discussed the research methodology used to investigate individuals' learning experiences in the workplace and how organisations can facilitate such learning. Drawing on these perspectives, Chapter 4 linked the research methodology to the research strategy, describing the compound methods employed in this investigation. In this chapter, the results of the analysis of data collected using these methods will be presented.

The chapter begins with a description of the context of this inquiry. Next, the results are presented, starting with an introduction of the categories that emerged from analysis, followed by a detailed discussion of each category. Lastly, the grounded theory of workplace learning within the particular context is described and presented in the form of a causal model.

5.2 The Research Context

This section describes the context in which the study was conducted and from which theory was developed. Data gathered in this study takes the form of participants' experiences about learning through everyday work activities, all of which are contextual. Thus, insight into the participant's work environment and activities is pertinent to interpreting the data and results. Descriptions of the nature of the participants' work environment are presented from the data, to give a general overview of the types of situations which the participants' experience on a day-to-day basis at work. Information presented in this section comes from research observations, site documents, memos, and interview transcripts.

KSR (the pseudonym given to the organisation selected as the research site) is a multinational manufacturing company with business interests throughout the world. The data in this study was gathered from KSR's Western Cape branch in South Africa. KSR's Western Cape branch is home to technical units (departments associated with the manufacturing aspects of the business), a human resource unit (dealing with recruitment and career development aspects), management units (both general management and technical department management), and a business development unit (focused on business innovation and improvement strategy). With the manufacturing plant running 24 hours a day, 7 days a week, the work environment at KSR is a demanding one. The Western Cape KSR plant is highly automated, requiring little manual operation by workers. All employees at KSR are grouped into one of four levels:

- ❖ Level A is mainly comprised of technicians operating machinery.

- ❖ Level B is made up of both junior and senior engineers working in various technical departments.
- ❖ Level C consists of technical department managers.
- ❖ Level D is comprised of high level plant managers such as the general manager and human resource manager.

The three main facets of work life at KSR are described below.

5.2.1 Team Work

Team work serves the foundation of working life at KSR, and all employees are part of discipline specific teams. Much of an employees' work time is spent in team activities such as meetings, with agendas covering a number of issues relating to day-to-day activities, right up to yearly planning issues. Observations at KSR revealed that most 'employee interaction' takes place in these meetings, evident from the fact that an average engineer (level B) spends 40% - 50% of their work day attending meetings. This percentage increases with employee level, for example employees in level C can spend up to 70% of their day in meetings.

Scheduling and planning are high priority activities at KSR. This is perhaps an implication of their high level of automation and focus on team meetings. Although schedule disruptions (caused by sudden machinery or process problems) frequently occur in this manufacturing environment, feedback and update mechanisms are in place so that no employee is *left behind* on matters discussed in meetings. Furthermore, KSR meetings appear to be highly structured, planned, and ordered. An example of this is the existence of a 'meetings evaluation system'. This system uses team feedback to evaluate and improve meeting performance.

Meetings at KSR can be grouped into three main categories: technical, innovation, and developmental. Technical meetings are the most frequent at KSR and cover a wide range of plant performance related issues (e.g. maintenance meetings, department performance meetings, etc). Additionally, meetings for each of the three categories occur at each employee level (A, B, C and D). Furthermore, open-level meetings also take place that bring together members from the different levels. Some examples of team work activities include:

- ❖ Daily walk-about meetings
- ❖ Daily performance meeting
- ❖ Weekly maintenance meeting
- ❖ Weekly breakdown meeting
- ❖ Weekly leadership meeting
- ❖ Monthly department meeting
- ❖ Monthly one-on-one manager session
- ❖ Quarterly department forums

5.2.2 Goal Driven Environment

KSR has a strong *goal driven culture*. This is evident in goals at an organisational level e.g. relating to plant performance, at a team level, and individual development goals. At the beginning of each financial year, all employees at KSR set *individual goals* regarding their personal and professional development to be achieved during the year. Additionally, work teams within each department set *team goals* related to what they would like to achieve in that year. Next, each department sets *department goals* surrounding departmental objectives for the year. Finally, plant managers set *plant goals* addressing the aims for the plant as a whole. Each of these goals is set such that they are in line with the plant's goals. Goal achievement is a high priority at KSR and periodic review meetings track and monitor goal achievement (monthly one-on-one meetings with direct manager). KSR uses data from all facets of employee activity (e.g. feedback from meetings management system) in goal progress discussions.

5.2.3 Continuous Improvement and Innovation

Another facet of work life at KSR is continuous improvement. Team-work activities and goal setting are complimented by the organisation's drive for improvement and innovation. Employee activities and events are planned and coordinated such that their outcomes yield improvements in performance. Activities are continuously reviewed by KSR (using employee feedback and performance) and often changes are made for improvement. For example, KSR's current meeting management system is in its third version. A few examples of improvement and innovation activities are described below:

Shared Learning

At KSR, there is an emphasis on sharing all knowledge and learning amongst employees within and across all branches. Quarterly forums (discipline specific), regular teleconferencing, and frequent visits to different branches are a few examples of sharing activities. They are intended to promote employee interaction, information sharing, and problem solving. These activities are endorsed and promoted by KSR management; however they are often initiated by the employees themselves. A 'Shared Learning' system exists on the company intranet where plant improvements and innovations are posted by employees. These postings are available for the plant community (all branches) to review and give ratings. Sharing is competitive, that is, the plant community compete to *share the most*. Multi-level meetings are another example of shared learning. These take place monthly and are open to employees from all levels in the plant. Work teams (from all departments) voluntarily submit their recent innovations, projects or improvement practices to KSR's Business Development Department, who create an agenda and plan for the next Multi-level meeting. During the meetings, innovations are presented and discussed amongst all meeting attendees.

Career Development

All employees at KSR have Individual Development Plans which they develop with their manager on a yearly basis. Individual development review sessions take place in one-on-one sessions. These are monthly meetings with the line manager, where employees discuss their goals, progress, challenges, and get feedback. KSR encourages all employees to explore different job roles within the organisation. For example, if an employee working in the Packaging department is interested in exploring a career in IT, KSR will develop a career path to IT for the employee. Such activities are not only encouraged, but often rewarded.

Competition and Incentives

KSR emphasises sharing and has created a competitive sharing culture. Individual employees, teams, departments and even plants compete with one another to share insights, learnings, innovations and improvements. This sharing is supported and promoted through incentives by KSR management. Sharing is acknowledged and discussed during performance appraisals, monthly one-on-one sessions, and career development meetings. Team sharing is regularly rewarded by team awards and prizes. Additionally, KSR often uses innovative methods to acknowledge sharing and performance. An example of this is KSR's recent 'Oscar themed Award Ceremony' which awarded prizes to individuals, teams and departments.

Given the types of work activities that employees are involved in, interaction and group participation are a frequent daily occurrence at KSR. To understand how participants learn through daily work activities requires an understanding of how participants learn through interaction and group participation. The substantive theory generated from this study describes how individuals learn through interaction in the workplace. The categories that emerged in this study are presented in the next sections.

5.3 Presenting Findings of the Grounded Theory Analysis

Concept diagrams generated during memo writing processes (visual memos described in Section 3.7.2) are presented in this chapter to illustrate the relationship between concepts that emerged from data analysis. **Error! Reference source not found.** provides a key for reading concept diagrams. All data presented is colour coded to indicate relationships to the core category and super categories (see Table 5.2). Each category generated in this study is explained using a 4D definition frame work.

Table 5.3 explains the concept of a 4D definition and the meaning of each component in it. Excerpts of research interview data are presented to provide supporting evidence for the categories and their conceptual interpretation. These quotes are presented in *italics* and are separated using square brackets []. Regular brackets () are used within quotes to include explanatory text.

Table 5.1: Key to read Concept Diagrams.





Element in Concept Diagram	Description	Meaning
	Solid filled ellipse	Category
	Ellipse outline	Sub-category
A  B	Plain solid line with arrow head	Show connection between concept and category.
A  B	Plain solid line	Show connection between category and sub-categories and sub-category groups.

Table 5.2: Key to read Colour Coded Data.









Colour	Meaning
	Component of <i>Structured Interaction</i>
	Component of <i>Understanding of Work Context</i>
	Component of <i>Taking Initiative to Interact</i>
	Component of <i>Recognition</i>
	Component of <i>Feedback</i>
	Component of <i>Planning</i>
	Component of <i>Support</i>
	Other (not direct component of core or super categories)

Table 5.3: Explanation of how to read 4D Definition.

Concept	Sense (general)	Reference (in this study's context)	Functional (why)	Operational (how)
Category A	Characteristics of A.	What A refers to in this research situation.	The contextual consequences of changes in A with regards to WPL.	The contextual elements that influence A.

5.4 Introduction of Categories

This section introduces the categories that emerged from this study, followed by detailed discussions of each. This enabled the generation of grounded workplace learning (WPL) theory, which is presented in the form of a causal model, showing the interrelation between core concepts (discussed in Section 5.8).

When individuals carry out their daily work activities, they interact with other colleagues, managers, and clients. In principle, these processes are mainly communicative and participative. Learning that takes place through these processes is largely dependent on the nature of the interaction. Coding revealed participating in *Structured Interactions* as the central theme in the data. It encompasses the pattern of behaviour emerging from the data, connects to all categories, and gives a powerful explication of the data. Thus, *Structured Interactions* emerged as the core category. A total of six super-categories were generated in this study. Four of the super categories emerged as WPL mechanisms; which are factors present in the workplace that facilitate individual learning. The WPL mechanisms are: *Recognition*, *Feedback*, *Planning*, and *Support*. This set of super categories act as mechanisms for enabling Structured Interactions to take place. The other two super categories are: *Understanding of Work Context* and *Taking Initiative to Interact*. Figure 5.1 presents an overview of the findings that emerged from this study.

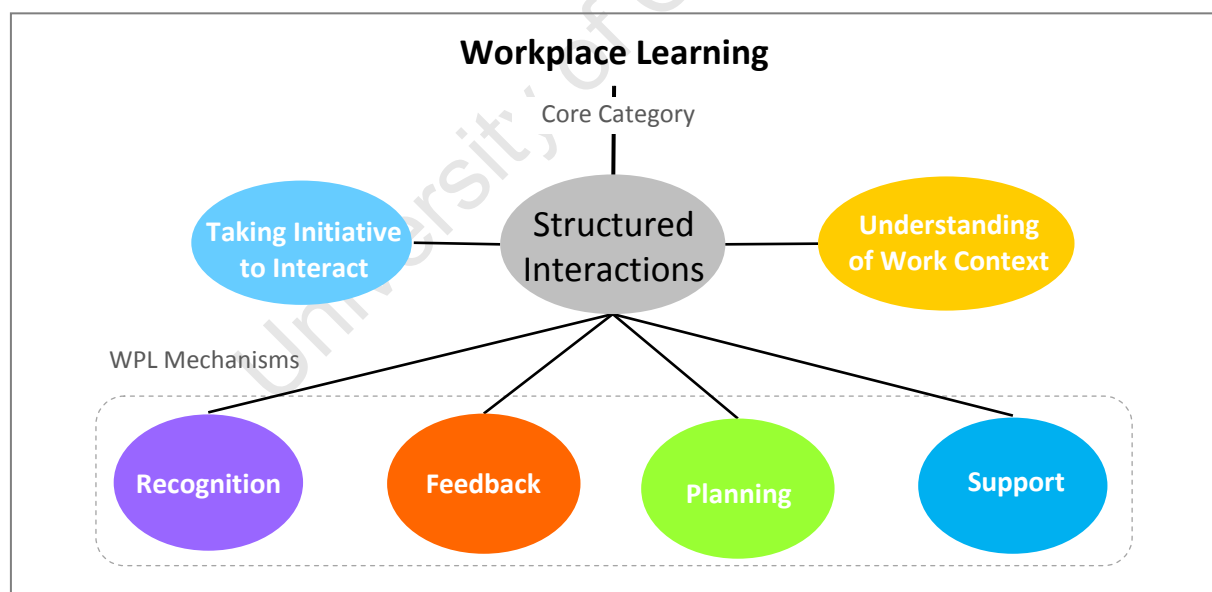


Figure 5.1: Overview of Findings.

The context within which the resulting theory is located has been presented in Section 5.3, providing useful boundaries of generalisability. The following sections present the findings in greater detail. The six super categories are initially described in Section 5.5 to introduce relevant concepts and attributes of the core category, *Structured Interaction*. This is followed by an explanation of the core category and its relation to the super categories in Section 5.6.

5.5 Super Categories

Workplace learning mechanisms are the factors present in the workplace that facilitate individual learning. Data analysis revealed the presence of four main phenomena in the KSR work situation that facilitate learning. These phenomenon were identified through *factors that influence learning* and *the nature of the workplace*. Concept diagrams for each are presented below to show how the four super categories emerged in this study, providing insight about the characteristics and qualities of each WPL mechanism.

5.5.1 Factors that Influence Learning

The concept area of *Factors Influencing Learning* contains six categories and twenty six sub-categories (see Figure 5.2). The categories *Being Acknowledged*, *Getting Feedback*, *Getting & Giving Support*, and *Planning* are components of the *four WPL mechanisms*. Each of the categories is colour coded to illustrate this.

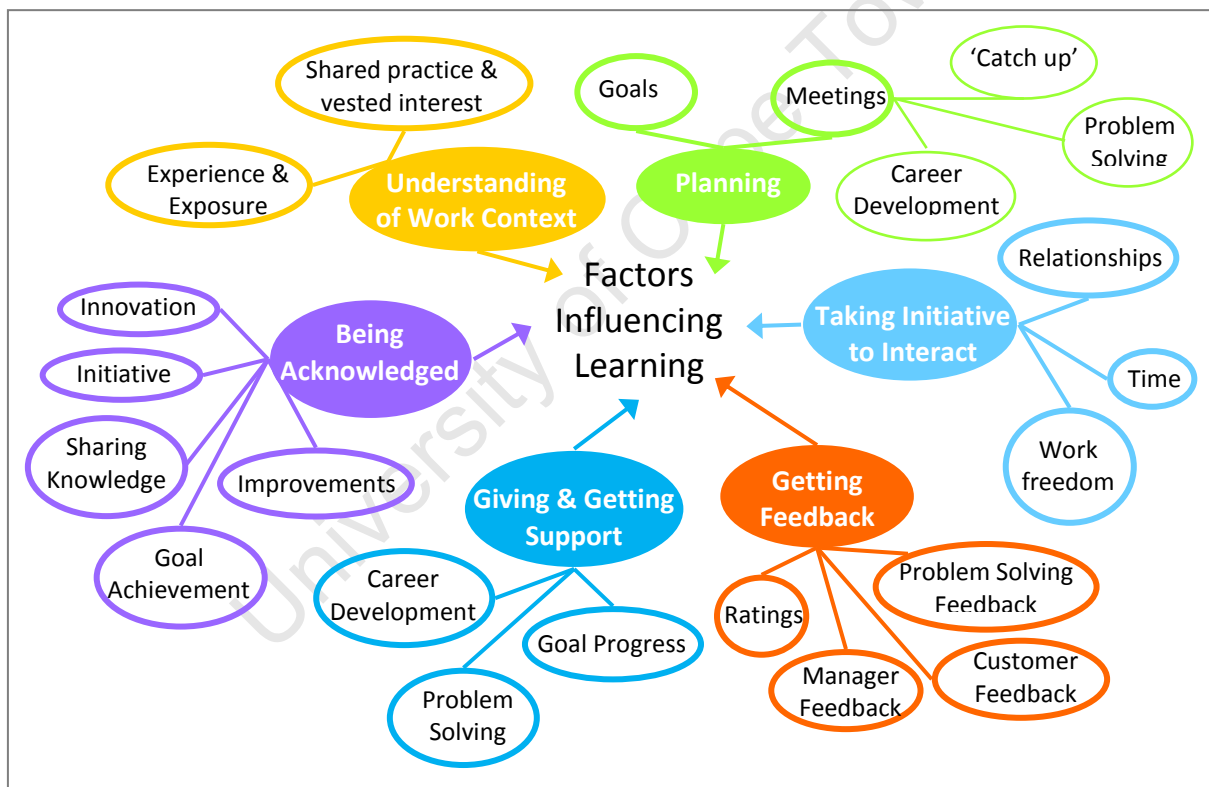


Figure 5.2: Factors that Influence Learning.

Category 1: *Planning*

In this category, participants perceive a strong relation between '*planning*' and their '*learning*' (see Figure 5.2). Learning in the workplace occurs through interaction in workplace activities. Planning workplace activities not only helps individuals to set time aside for these interactions, but also helps individuals to prepare for them. Where '*prepare*' in this context refers to understanding what they need to achieve, in other words, the

overall goal of the interaction. The *planning* category encompasses two main sub-categories: goals and meetings.

The first sub-category and most influential one to participants' learning is goal planning. Goals play a very important role in work activities at KSR. Goals set by individuals cover all facets of their work practice. They include career planning goals (regarding their career path and ambitions at KSR), personal development goals (such as leadership skills), academic goals (such as pursuing further studies in academic institutions), technical subject matter goals (acquiring in-depth knowledge within a specific technical field), and performance goals (activities that directly improve plant performance). Additionally, each team (work team, leadership team, technical team, and multi-level team) and department sets goals. This results in a great deal of work planning according to goals.

[... you've got specific goals that you need to drive within a year - you then make sure you achieve them and the only way you can manage those things is by managing your calendar - so booking for meetings and then going through a set agenda or requirement that you need to achieve by end of the month or end of the week or review past months performance. You have to consciously book those things in otherwise you are in for a hiding (laugh) ...]

Planning for meetings is the second sub-category. Meetings cover a wide range of subjects, including career development meetings, problem solving sessions, and 'catch up' sessions. When issues in the workplace arise, participants plan the actual problem solving session with each other. Issues include both technical (plant breakdowns, performance drops) and non-technical (leadership issues, personal conflict in teams). Planning the problem solving sessions involves deciding who should meet, getting a commitment from them and updating calendars. As opposed to *[... simply walking in to each other's office and solving it...]*. Although this does happen, most problem solving sessions are planned before detailed discussions take place. A reason for this may be an individual's availability.

[... It's about availability, they're not always there. Probably the guys are more involved in meetings and things like that but definitely if something needs to be discussed it is scheduled. It is scheduled right away...]

[... I enjoy the scheduled meetings - it is time set aside - it is better. I think it helps you prepare your mind for what needs to be solved and discussed instead of just jumping into it...]

Career development meetings are planned according to career goals (described above) and meetings are planned with people in the organisation that can help with goal achievement. Such people are usually referred to the individual by their manager or the individual identifies the right people to talk to and initiates meetings him or herself. Catch up sessions refer to finding out what is going on in others' work practice. Participants' frequently

schedule 'catch up' sessions with each other to discuss recent changes, problems, and innovations in their work. These sessions take place between people with the same job role in different plants, and also between people in the same plant in different departments. The interactions sometimes occur over the phone (teleconferencing session), email or physical meeting in office/boardrooms.

[...we (department managers) keep in touch on a regular basis and catch up. I ask about what's going-on on their side, we discuss problems and how we solved them. We have monthly planned teleconferences but we usually end up communicating on a weekly basis. Also we have an email group going where you talk about interesting things going on in the industry and how we can do new things in our departments ...]

The excerpt above holds true for other teams, such as KSR's leadership team (comprising of individuals from different levels in different departments), department teams and multi-disciplinary teams. The interactions often lead to department and site visits.

[... If we do something different in our side that improves performance then we usually set up a team and they go to other sites to show them how we did it. We don't just talk about what we did; we like to show each other 'how' so they can learn from us and we can learn from them ...]

Category 2: Getting Feedback

Getting feedback would appear to be an important factor in learning. Participants describe their learning through participating in work activities. A crucial part of this learning involves *getting feedback* about their involvement in activities. Four areas of feedback emerged as sub-categories (see Figure 5.2). *Getting feedback* from their manager is the first sub-category. It includes feedback on activities ranging from meetings evaluation, to individual goal achievement feedback. Meetings evaluation feedback comes from the organisation's Meeting Evaluation System. Here individual team members fill feedback forms to evaluate their (and others) interactions in meetings against certain criteria to evaluate the "overall goal achievement" of the specific meeting. All feedback is kept anonymous and used for employee feedback during manager one-on-one sessions and for plant performance trend reviews.

[... Getting evaluated on our contribution and the closing of gaps makes us more conscious of it; it helps us participate more constructively during meetings - e.g. not waffling...]

Feedback in the form of Ratings is another sub-category. When employees at KSR come up with an idea for innovation or improvement in their work practice, they document it and upload it on the company portal. This system is referred to as "shared learnings", where it is then rated and feedback for improvements or solving specific issues in the idea are posted. This opens a dialogue between employees about the idea, where they help each other to

develop it. Problem solving feedback is another important sub-category. When individuals engage in problem solving activities with colleagues (during meetings or casual chats), they identify *getting feedback* about the problem as part of the learning experience.

[... Learning is about the theory and practice, so if you try and solve problems with the guys it's really important to get feedback on how they went about implementing the solution and hearing about any challenges they faced...]

The last sub-category is customer feedback. Here, customers refer to internal customers (in the manufacturing chain) that each department services. Individuals learn from the feedback that their colleagues give about their work.

[... For you to grow in that specific area you need to get feedback from your direct customers...]

[... Yes, like yesterday - a typical example - it is a small project but at times, it takes a lot of your time, and your resources as well. At the end of the day, you need feedback from not only your manager but also from the person you are doing the job for. It helps you learn from this job, so next time you do better...]

The category of Getting Feedback is an important one and encompasses feedback from colleagues and managers from a variety of workplace activities. The following excerpt illustrates the significance of this factor to learning.

[... I think you can never get enough (feedback) - it is always good to get it. You have your formal feedback sessions and you have a lot of the cuff or informal feedback - it is like flowers on Valentine's Day or getting flowers by surprise... you know...]

Category 3: *Getting & Giving Support*

Getting and giving support (see Figure 5.2) is an important component of workplace learning. Participants describe *getting and giving support* as part of their learning experiences. Support in this context refers to encouragement, guidance and collaboration in work activities. There are three main areas where individuals link 'support' to 'learning': career development, problem solving, and goal progress. Career development support involves giving and receiving support in the form of encouragement, sharing personal 'career experiences', and guidance with career development paths. This type of learning support is primarily received from managers.

[... Your manager has quite a lot of personal interest in how you're doing and how you can do it better. In a way you're like his karate kid - he trained you to paint the fence, so he's interested in how the painting's going...]

Problem solving support takes place when colleagues interact with the aim of solving problems (both technical and non-technical) at work. It is about 'sound-boarding ideas',

sharing similar problem experiences, and ‘asking the right questions’ in order to solve the problem. Such interactions occur not only during team meetings, but often take place ‘informally’ in hallway and office chats. Most participants spoke about their membership in self-forming ‘support groups’, which served to support their work practice in areas ranging from discipline specific subjects to leadership groups and even coping groups (‘how to deal with work life at KSR’).

[... we get together once a month and chat about a few things - the last one we had we decided that we need to start minuting the session and that was the first time we actually minuted the session - and called it a Unit Manager Forum Meeting. Initially we just got together and said, 'What are your problems?' 'This is mine'. Basically 'what were your biggest issues over the past month?' and 'how did you deal with it?'...]

Goal progress support is the last support area in this category. Individuals receive this type of support mainly from their managers. It entails receiving support for all goals that an individual sets in their workplace (described in Category I).

[...Your manager helps you fully understand your goals and what needs to be done to achieve them. He supports your progress, helps you overcome problems so that you can learn and achieve what you set out to achieve...]

Category 4: *Being Acknowledged*

In category IV, *Being acknowledged* (see Figure 5.2) participants perceive a positive association between ‘being acknowledged’ and ‘learning’. *Being acknowledged* involves receiving recognition from the work teams that they are part of (colleagues) and by the organisation’s management. This category encompasses recognition for participating in activities and the outcome of their participation in them. Five main activities where participants received acknowledgement emerged as sub-categories: taking initiative at work, coming up with innovations, making improvements, achieving goals, and sharing knowledge with colleagues. Participants experienced these activities as learning experiences, and described a sense of motivation towards future participation by being recognized and rewarded for their involvement in them.

Category 5: *Taking Initiative to Interact*

This category (see Figure 5.2) encompasses individuals’ *Taking Initiative to Interact* with each other in the workplace. The analysis has shown that this category is directly influenced by I through IV (illustrated in Figure 5.3) as follows. Planning Activities often involves initiative on the individual’s part to interact with other colleagues. Goal achievement activities, problem solving sessions and ‘catch up’ meetings are usually initiated by participants. Being acknowledged creates motivation to continue interacting. Additionally, since individuals at KSR are rewarded for knowledge sharing they initiate interactions with

each other to discuss areas of interest, problems, and improvements. Getting Feedback helps individuals identify where they need to improve their work practice and often guides them towards who they should be interacting with to help them make improvements. Lastly, Getting & Giving Support usually requires individuals to take initiative and interact with each other to solve problems and make progress towards goal achievement.

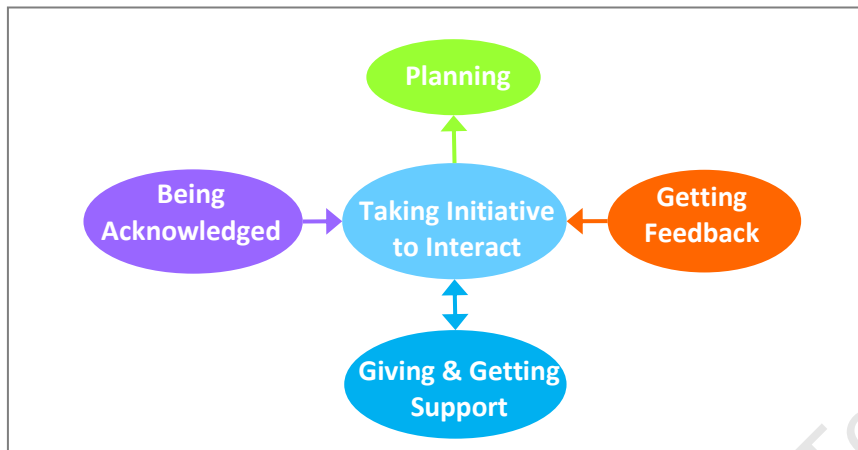


Figure 5.3: Relation between Taking Initiative to Interact and other categories.

Taking Initiative to Interact has three sub-categories: work freedom, relationships and time. Work freedom is the level of freedom that individuals have at work over their daily routine. Participants at KSR feel at liberty to interact with each other and adjust routines whenever they feel there is a need to. They describe a sense of ‘freeness’ in how they conduct their work.

[... What I like about KSR is they are behind you 100%. You know what you need to achieve and they say “here you are, you run the show, you make the rules, and you make the calls”. You know what you need to do to achieve your goals, so it’s really up to you on how you go about doing it, you have freedom to choose the people you want around you – so that’s what you do...]

Relationships is the second sub-category and refers to the level of comfort that individuals feel when interacting with each other. Participants described themselves as being more likely to interact with individuals with whom they had *good work-relationships*. Factors that influence their relationship with colleagues include: *[... how you communicate with each other ...]*, *[... your commitment to work ...]*, *[... how you conduct work projects ...]*, *[... the way you follow up on discussion ...]*, *[... the feedback and support you provide ...]*, and *[... how approachable you are ...]*

Time is another factor in taking initiative to interact. Participants at KSR describe the environment as a busy one, and often availability of individuals is an issue when they need to interact with each other due to busy schedules. This factor links with Category I (Planning), where individuals plan most interactions due to availability constraints.

Category 6: Understanding of Work Context

Understanding of work context (see Figure 5.2) is the final category in the factors that Influence Learning. It means understanding the roles, goals, intentions, and activities of other individuals, teams, departments, and the organisation as a whole. When individuals interact in the workplace, having a clear understanding of one another's work context helps improve their ability to learn from one another. It helps individuals know 'what' they need to do and helps them interact in order to know 'how' to do it. Whether the focus of the interaction is to achieve goals, solve problems, or share knowledge, individuals use their understanding of each other's work context to accomplish the aim of the interaction.

Three of the categories discussed above influence-or are influenced by Understanding of Work Context (illustrated in Figure 5.4). *Understanding each others' work context* helps individuals to plan activities. Goal achievement activities, problem solving sessions and 'catch up' meetings can be initiated with the 'right people' if individuals understand their colleagues roles and goals. Getting Feedback and Support helps improve understanding of work context. Additionally, Understanding of Work Context improves individual's ability to give support, since they gain a better idea of how to solve problems within their workplace.

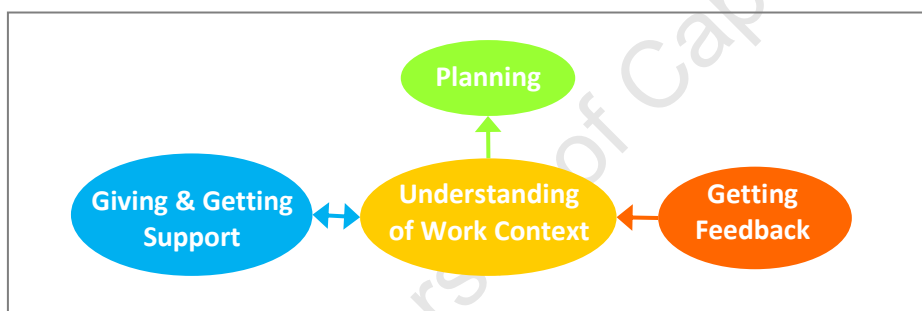


Figure 5.4: Relation between Understanding of Work Context and other categories.

This category contains two sub-categories: experience & exposure and shared practice & vested interest. The first sub-category involves experience in and exposure to other roles and departments within the organisation. Individuals improve their understanding of their work context by engaging with other work teams and departments. Experience in other roles and departments involve moving around in the organisation to different job roles, which is a frequent occurrence in KSR.

[... You can start as a packaging engineer and end up as a project engineer. You get the opportunity to move around, learn about the business until you find your place. It is great! They let you move around and support you in whatever path you choose. The rest is up to you! ...]

Exposure to other teams and departments involves interacting with people other than your direct team. It helps individuals to build relations with their colleagues and understand the 'big picture'.

[... I clearly know what they're doing, what their roles are. I should know what their roles are and what they do! It helps us communicate better...]

In the following excerpt, the interviewee talks about multi-level meetings that take place once a month, where individuals from different levels and departments attend.

[... Those are good. They are informative and different - what's nice about it is that it is fresh, not the same as what you see every day. You see departments that you never deal with. And you say "Oh, they are doing that!" and "how does that work!" It is watching news on TV – you get to see what is going on...]

Understanding each other's work context creates a vested interest in interactions and a sense of shared practice among those who are interacting. The following excerpts describe what this means to interviewees.

[... They are knowledgeable about our plant and our situation; they share a common goal with me to improve our plant...]

[... it's a two way street – and there is a follow up. So you set up a meeting, discuss things and reach a solution. Then a while later you check how implementation went, "well, did that work?", "how did it go?" That sort of thing... And it usually leads in more meetings and discussions to discuss new ideas...]

[... Our interactions have a common outcome...]

[This is very interactive conversation - they understand the relevance - I probably don't even have to explain the whole scenario for them, they will already be on board because they are part of the team and it is a give and take relationship. So when you ask questions it's not so purely consulting – it's more of a dialogue to solve problems ...]

5.5.2 Nature of the Workplace

The concept area of *Workplace* contains five categories and twenty five sub-categories (see Figure 5.5). Of these five categories, the categories *Reward Driven*, *Focus on Monitoring & Feedback*, *Supportive*, and *Goal Oriented* are components of the *four WPL mechanisms* (illustrated in Figure 5.1). Each of the categories is colour coded to illustrate to help assist in their illustration.



Figure 5.5: Nature of the workplace.

Participants perceive their workplace as *reward driven*, *supportive*, *goal oriented*, *focused on monitoring & feedback*, and *performance driven*. There is a large overlap between the factors that influence their learning and their perception of the organisation. To avoid repetition, the following category descriptions will be kept brief.

Category 7: *Reward Driven*

In this category, participants perceive their work environment as *reward driven*. Rewards take the form of individual awards, team awards, department awards, knowledge sharing rewards and career progress and promotions. The awards are given on the basis of achievements and individuals value these awards and give special meaning to them.

[...It's like...Well if you are the best then how you should give meaning to the awards is by asking 'what have you done to bring meaning to the awards?' Instead of you just being the best to keep getting the prize – you need to ask yourself 'what have you done to bring the slowest horse with you?' ...]

Participants also perceived this to create a competitive work environment, where everyone competes to 'be the best'. However, the nature of the competitions results in sharing and supporting. At KSR, individuals and teams compete to 'share the most knowledge' and are rewarded for doing so.

[... It is competitive in the sense that there are no half measures. Don't do things half-heartedly, competitions across the plants - there is one plant selected out of all of the plants in South Africa that is better than everybody else, so that is one part of the competition. Then there are forums, shared Learnings - there is also competition with shared Learnings - which shared learning is the best? Which has added the

most value? Who is sharing the most? So it's healthy competition that keeps everyone motivated to support each other ...]

[... If I make somebody else successful - that's success or I will be rewarded for that. If I helped someone reach a solution by sharing some information or by sharing a solution, if I helped develop other people then I would be rewarded...]

Career progress & promotions are another form of rewards at KSR. During career development sessions, individuals' achievements and performance are taken in to account and promotions are made on this basis.

[... if you do what you need to do and do it damn well then you'll move up quick! KSR is a performance driven place – if you perform, then you move. It's not like those other places where you need to wait for someone to retire before you get new opportunities...]

Category 8: Goal Oriented

KSR is perceived as a *goal oriented* environment. Individuals, teams, departments, regions (different plants within South Africa) and the organisation as a whole set goals. Goals not only guide long term plans, but they also influence daily activities and planning.

[... If it is not in my goals I don't do it. That's why we are so goal based and we make sure that your goals drive what you need to do. If there are any ad hoc things that come in then you need to build it in to your goals cause at the end of the day it's that performance driven culture. And you need to make sure that it is in your goals, you need to make sure that it is driven and you deliver to what the requirements of those goals are ...]

[...There are very clear work objectives with very structured goals that indicate what you have got to achieve...]

With so many goals being set at so many different levels within KSR, there is a great deal of goal alignment, such that all goals complement each other and go towards achieving the overall goals of the organisation.

[... Nobody will tell me how to do what I need to do. They tell me what they require from me, we discuss it and we set our goals. Everyone in KSR is aligned, they start at the top really - Our financial year starts in April, so February each year the directors set their goals, March the general managers set their goals, April the level 4 guys set their goals and then level 3 which is me and my team set our goals and then the unit managers and their teams set their goals and then the team leaders and their teams set their goals. By the end of May everyone has their individual goals and team goals and they are all aligned - so we all know what is required from us in the second month of the year...]

Category 9: Supportive

In this category, participants view their workplace as being *supportive*. They receive support in setting goals, achieving goals, and through mentoring & coaching in the workplace. As discussed in the previous category, goals play a very important role in the workplace. Individuals receive support from their managers in setting their goals and time is set aside for such activities.

[... I spend at least an hour or two with each individual, on a one-on-one basis on a monthly basis and when it comes to performance review time and goal setting periods you are spending much more time on people. You are spending say an hour and a half on a performance review - you need to consider that individuals performance over that entire period - financial year - you need to be able to set goals with those individuals and by now you've already spent one day to two days in setting the goals for your department so then you set individual goals for each person - that takes up to two hours per person depending on the role that the individual has...]

Achieving goals is supported by both managers and colleagues and is discussed in the previous section (Section 5.6.1). Individuals at KSR also have mentors and coaches to support their career development. These roles are provided by their managers and by other people in the organisation. Individuals have freedom in identifying and initiating a mentorship relation themselves, and often do so at KSR.

Category 10: Focus on Monitoring & Feedback

In Category D, participants perceive their workplace as having a strong focus on *monitoring and feedback*. The category Getting Feedback in Section 5.6.1 overlaps with this category. To provide feedback, activities and goals are monitored and reviewed. This category has four main components: goal reviews, goal monitoring, learning community reviews, and meeting evaluation system.

Goals are reviewed and monitored on a monthly basis through one-on-one sessions with managers. Here, individual and team goals are tracked and changes in progress are noted. Additionally, individuals receive guidance and support during these sessions in order to keep progressing towards goal achievement. Learning community reviews take place all the time at KSR. The entire KSR workforce is regarded as the 'learning community' and they review shared learnings posted on the KSR portal. This gives everyone an opportunity to give feedback on ideas posted and often starts a dialogue between members of the learning community. Additionally, plant performance is always monitored and feedback mechanisms are in place such that problems can be quickly solved.

[... If my team gets a breakdown that is longer than 30 minutes then the Unit manager needs to know, breakdown longer than an hour the senior engineer needs

to know, longer than two hours, I must know. Longer than 3 hours the general manager must know - longer than 4 hours - the directors must know. We monitor everything and give feedback on our performance...]

Category 11: Performance Driven

Categories A to E discussed above create what interviewees often referred to as a *performance driven* work environment. The systems and activities at KSR result in a target driven workplace, where there is a strong drive to continually make improvements. Continuous improvement refers to all facets of work life at KSR. It not only includes technical performance improvements, but also encompasses non-technical activities. For example, KSR's meeting evaluation system is currently in its third version. That is, the system is monitored and feedback from meeting attendees is analysed on a continuous bases. This feedback is then used to make improvements, and the improvement process cycle starts again. These two qualities of a performance driven work environment are largely due to KSR's focus on goals.

[... KSR is a big company you learn a hell of a lot - whether you want to or not. You are constantly setting targets, constantly interacting with brilliant people, and constantly performing... and then you're constantly getting targets, and ... (haha). So you're always on your toes...]

5.5.3 Summary of Super Categories

A total of six super-categories were generated in this study: four WPL mechanisms (*Recognition, Feedback, Planning, and Support*), *Understanding of Work Context*, and *Taking Initiative to Interact*. Using concept diagrams (*factors that influence learning and the nature of the workplace*) and interview excerpts, this section showed how the six super-categories emerged. Table 5.4 highlights this.

Table 5.4: Emergence of Super Categories

Super Category	Emerged from
Recognition	Category 4 'Being Acknowledged'– Section. 5.5.1, Figure. 5.2 Category 7 'Reward Driven'– Section 5.5.2, Figure. 5.5
Feedback	Category 2 'Getting Feedback'– Section. 5.5.1, Figure. 5.2 Category 10 'Focus on Monitoring & Feedback'– Section. 5.5.2, Figure. 5.5
Planning	Category 1 'Planning'– Section. 5.5.1, Figure. 5.2 Category 8 'Goal Oriented'– Section. 5.5.2, Figure. 5.5
Support	Category 3 'Giving & Getting Support'– Section. 5.5.1, Figure. 5.2 Category 9 'Supportive'– Section. 5.5.2, Figure. 5.5
Taking Initiative to Interact	Category 5 'Taking Initiative to Interact' – Section 5.5.1, Figure 5.2.
Understanding of Work Context	Category 6 'Understanding of Work Context' – Section 5.5.1, Figure 5.2.

5.6 Core Category – Structured Interaction

Participating in Structured Interactions emerged as the central category in this study. A Structured Interaction occurs between two or more people and has no formal or informal boundaries. That is, it can take place in both formal and informal settings and takes the form of dialogues, discussions and debates in meetings, ‘casual’ chats, and electronic communications. Conversations are the vehicle for learning in Structured Interactions, and provide a means to communicate ideas and build relationships between individuals.

In the core category, interaction means two or more people participating together, thinking or problem solving and communicating their ideas. Structure in this context does not refer to rigid or predetermined structures in communication. Instead, it refers to communication that is driven by the four WPL mechanisms that exist in the workplace and is enabled by the individuals’ understanding of each others’ work context.

5.6.1 Qualities of a Structured Interaction

The core category *Structured Interactions* is constituted from nine categories and sixteen sub-categories (see Figure 5.6). A Structured Interaction is an interaction that is shaped by the organisation’s WPL mechanisms and has a clear intent. This intent is shared by all members participating in the interaction through their collective understanding of each others’ work context. When individuals engage in Structured Interactions, they think, solve problems, and communicate their ideas. Conversation is the base of these interactions, and is made up of two main parts: content and organisation. Here, content refers to ‘what is being said’ and organisation refers to ‘how it is being said’. The following section illustrates the characteristics and qualities of Structured Interactions, describing how the four WPL mechanisms shape the content and organisation of Structured Interactions.

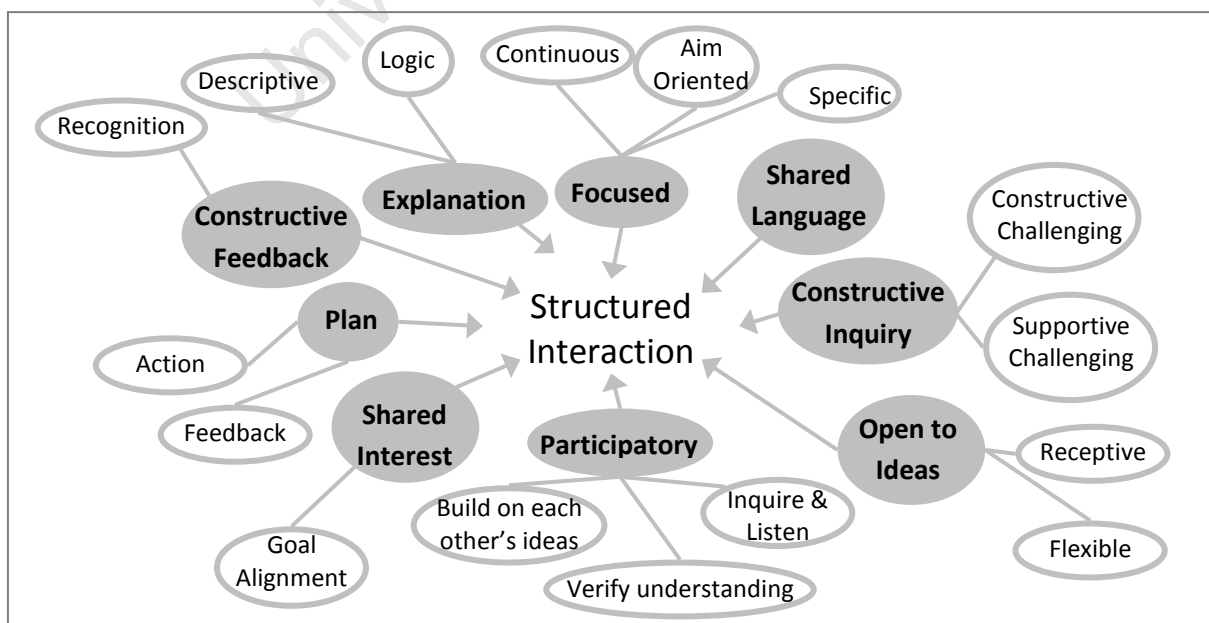


Figure 5.6: Qualities of Structured Interaction.

Category A: *Focused*

A Structured Interaction is a *focused* interaction. Focus encompasses four sub-categories: specific, continuous, and aim oriented. A Structured Interaction has a focal point; this is a *specific* purpose or issue that is at the centre of all interactions. It could be a specific problem that needs to be solved, a leadership issue, a discussion on innovation, or a 'catch up' session. These are the aims or objectives of a Structured Interaction, and direct the 'content' of the interaction. A Structured Interaction is continuous, in that the focus is continuous. Conversations in Structured Interactions have no 'rules' in a rigid sense; however participants organise their communication in a manner that keeps the focus of the interaction continuous. They pose questions and give responses keeping the overall aim of the interaction in mind.

[...I think structured in my view is a better option - they tend to be more focused and so you can cover more things in the time you have, otherwise you tend to drift around forever...]

[...most days we're really busy, tight schedules, meetings and all that good stuff. So when we get together to discuss things, we make sure we keep on point and get things done whether it's solving plant problems or discussing ways to make our line more efficient...]

[...so when you walk out of that meeting or the person's office after a chat, you feel like you've achieved something or at least you've got some feedback on your ideas instead of walking out and feeling more confused or feeling as if nothing good came from it. You know you've made some progress on that particular problem ...]

Finally, in this category, a Structured Interaction is aim oriented. Focus is maintained on the aim or issue, and not the people. This does not mean that individuals are overlooked or have a secondary position in such interactions. Rather, it refers to interactions which are not emotionally charged. The discussion is organised around the issue and its resolution, as opposed to what the individual is doing 'incorrectly'. The following excerpt illustrates this point.

[...he has a solution driven response in our interactions. When we solve problems, I tell him my ideas, what I'm thinking, and if I've done something wrong or am on the wrong thinking path y – he'll say something like "well, you should consider so and so to solve the problem". He won't be like "you did this and that is wrong" ...]

The amount of time that individuals have available affects this category. KSR is perceived as a 'fast paced' and 'performance driven' work environment. This is largely due to planning procedures (meetings, scheduling of work activities). The *Planning* WPL mechanism and *Understanding of* (each other's) *Work Context* influence this category of Structured Interactions. Mechanisms in the organisation that assist individuals with developing,

preparing and arranging work goals and work activities create focused (specific, continuous and aim oriented) interactions. Additionally, understanding the roles, goals, intentions, and activities of other individuals, teams, departments, and the organisation as a whole assists individuals with maintaining this focus.

Category B: *Shared Language*

The second quality of a Structured Interaction is *shared language*. Participants in Structured Interactions communicate via a *shared language*. This is the language that is unique to each organisation. It is socially constructed through participation in, and observation of all aspects of work life in the organisation. Having a *shared language* influences the content of Structured Interactions and improves the participants understanding of ‘what’ each other is saying and ‘why’. For example, words such as ‘goals’, ‘performance’ and ‘level A’ hold unique meaning for individuals at KSR and are used in their organisation during interactions to refer to specific things.

This category influences the content of interactions and is influenced by individuals *Understanding of (each other’s) Work Context* and the combined set of four *WPL mechanisms*. Individuals develop this shared language by interacting with these mechanisms in their workplace, which further improve their understanding of each other’s work context.

Category C: *Shared Interest*

Shared interest is the third quality of a Structured Interaction and influences how it is organised (see Figure 5.6). All participants in this interaction have a shared interest in the focus or aim of the interaction. This creates a sense of ownership over the activity and accountability over what happens next (after the interaction). Goal Alignment is the main factor that creates a shared interest among participants. At KSR, all goals are aligned and the Planning, Support, and Recognition WPL mechanisms enable individuals to understand each other’s goals, and how the goals works towards supporting each other. This creates an alignment of interests, which is the reinforced by participating in successive Structured Interactions. Understanding each other’s work context creates a vested interest in interactions and a sense of shared practice among those who are interacting. Both of these areas are described with interview excerpts in Category 6 in Section 5.5.1.

The interest shared among participants has a strategic focus. That is, it goes beyond an ‘operational focus’ of trying to solve problems as quickly as possible. This is again due to goal alignment within the organisation and the individuals’ understanding of their work context (‘big picture’). The following excerpts illustrate the difference between interactions with a strategic and operational focus.

[... This is a little bit more operational focused, so it would be about trying to solve the problem for the short term as opposed to being more systemic and strategic.

And by saying that, it would be trying to solve the problem as quickly as you can because that is the nature of an operational type situation where you solve the problems as quickly as you can. Whereas, this one (strategic) you know you are going to have a lot of problems cropping up all the time –‘try and have a more systemic approach to solving It’...]

[... More systemic and strategic, so longer term and take the time, go through the learning, look at a more sustainable solution...]

[... The nature of KSR is that they drive you to have a systemic and strategic role. It is tough though, because of the nature of the work we do. Things need to be fixed ASAP, lines are standing still, so you have to balance between the two...]

[... I think anything is better when it is structured - no ifs and buts about it. It's the approach you take and in terms of your time and things, it's much more useful for long term solutions and learning...]

Category D: Participatory

Structured Interactions are *participatory* in nature (see Figure 5.6). Participation comprises of three components: inquire & listen, verify understanding, and build on each other's ideas. Individuals describe participation as being interactive, where each gets an opportunity to discuss. This is achieved by inquiring and listening. Individuals ask questions, listen to others' responses, share their ideas, then listen to responses for feedback and the cycle continues. Interviewees' referred to this as a 'shared' and 'two-way' experience as opposed to one that is directive.

Another aspect of this category is verifying understanding. Individuals participating in Structured Interactions verify understanding by checking if everyone is 'on the same page'. This makes sure that everyone truly has an opportunity to participate, and add their perspective to the discussion. Lastly, participation means building on each other's ideas. By inquiring, listening and verifying understanding, participants can develop each other's ideas and further the discussion towards achieving its goal. Thus, creating a 'shared learning' experience.

[...it's kind of like a wiki style approach. You don't wait for completed ideas, you add what you have and let others comment and expand your ideas ...]

[... It is more sharing of knowledge - best practices on my side or problems on my side that I bounce off him to find out what they are doing and he'll do the same. So it's more of a knowledge sharing type of thing...]

The Support, Feedback and Recognition WPL mechanisms influence this category (see Figure 5.1). Sharing knowledge is supported and rewarded at KSR, and also provides a means for feedback to individuals (see Section 5.6.1).

Category E: *Open to Ideas*

Category E, *open to ideas* involves being receptive and flexible to the responses and ideas of others' during Structured Interactions.

[... When I interact here, it's less productive. I feel like I can't really learn much from him or even share my knowledge because he will furiously defend his idea because it is his idea instead of being open when we discuss things...]

Understanding each other and the 'big picture' influences an individual's openness to different ideas.

[...These two guys are more open, we can bounce ideas, critique each others' ideas. I feel like we all share the same big picture and because these guys will explain the logic behind it, we all get to see where he's coming from with the idea ...]

Category F: *Constructive inquiry*

Constructive inquiry is another component of a Structured Interaction (see Figure 5.6). It involves constructive challenging and supportive challenging. Interviewees' described inquiry as questioning and challenging the ideas of others for the distinct purpose of solving problems and reaching good solutions. It is not however, 'reactive' challenging, where individuals question as a defence mechanism or to 'show' their knowledge. Constructive challenging is about challenging traditional thinking to come up with new 'ways' with the hope of improving the quality of the outcome.

[...Here it is more around, don't take things for what they have been formalised in the years gone by, challenge a lot more because that is where the value is. The value that you are going to get out of it by understanding what it is and not just challenging for the sake of challenging! But that you understand the rationale behind it and make sure that you challenge them for the good reasons and for the furthering of a system or something like that, as opposed to being negative....]

Supportive challenging is illustrated in the extract below to be about questioning for the benefit of other participants in the interaction.

[...I think over my years the key thing there is to make sure that we challenge systems for the value of the team...]

[...There is a lot of value that you can deliver by understanding the basics and then challenging them. But you need an appreciation for those basics, and so I try to challenge for the benefit of the team so we can start a discussion about it and they can form that appreciation and understanding themselves...]

Constructive inquiry is supported by Recognition and Support WPL mechanisms (see Figure 5.1). KSR has a strong drive on rewarding and supporting knowledge sharing, and individuals question in a constructive manner when interacting with each other.

Category G: *Explanation*

Structured Interactions involve *explanations* that are descriptive and show logic (see figure 5.6). When participants communicate in Structured Interactions, they break down their ideas and show the detail and reasoning behind them. *Explanations* are descriptive, and not prescriptive, creating room for further discussion.

[...he doesn't jump to the answer, he goes into the detail about how he got to that and then I question things and understand his thinking...]

[...By structure I mean, if we go through discussions and arguments and so on then it is about going through as much detail as you can to try and understand the reasoning behind it. So when I interact with them they go through the whole thing so they try and make sure that you understand the detail around it and I think from my learning perspective that is where that interacting comes in...]

[...It's about challenging, questioning, explaining the logic behind it and showing why you're saying what you're saying...]

This category is influenced by the set of four WPL mechanisms and Understanding of Work Context. Planning, Support, Feedback and Recognition mechanisms in the workplace tend to create a 'preference' for organised communication. For example, KSR's meeting evaluation system monitors and provides feedback on individuals' ability to communicate clearly and effectively in meetings. If improvements are needed, it is often added to their individual goals. If individuals receive good meeting evaluation feedback, they receive recognition from managers and colleagues.

Category H: *Constructive Feedback*

Constructive feedback is another characteristic of a Structured Interaction (see Figure 5.6). It is feedback that recognises individuals for their ideas and helps to improve on them. The Support and Feedback WPL mechanisms (see Figure 5.1) influence this constructive feedback. The following excerpts illustrate this category.

[...Ya, I can bounce things off them. They can give their inputs, well, generally good inputs. Good feedback, constructive feedback. Where you can get an answer, or helps with your thinking, in your approach to problems and stuff...]

[...Well, he can direct me to get the answer. Like sometimes you won't know the answer to the problem, but you could steer someone towards the direction to find

the answer – or at least ask the right questions to prod your mind into the right direction...]

Category I: *Plan*

The category *plan* is the final quality of a Structured Interaction and has to do with the output or result of the interaction. A Structured Interaction results in a *plan*, either for action or feedback or both. These plans are not formal or rigid; instead they are loose in nature. When a Structured Interaction ends, the participants discuss a plan of action for the particular issue. This can be a 'way forward' and which 'actions' to take next or it could be a plan for a follow up discussion. A feedback plan is simply a verbal agreement for a follow up chat, which could take the form of an informal chat, a scheduled meeting, or an email to discuss "how it went".

[...There will be a follow up – usually a call or email with "How did it go?". So it's more like a continuous loop type of thing...]

[... I enjoy structure, maybe that's it. So if I want to do something even if it is to build my kid's jungle gym at home - I have to make sure I know what I'm about to do – or at least have a plan of some sort. I can't just start slapping things together. I need a plan...]

[...It is how you conduct your projects and how you approach your projects and the principles and the mechanism that you develop and the way you follow up on things. It's the mechanisms you create for yourself...]

This category is influenced by Understanding of Work Context and the Planning, Feedback and Recognition mechanisms (see Figure 5.1). KSR's WPL mechanisms create a planning and feedback oriented work environment, which makes individuals more inclined to plan and get feedback during their interactions with each other.

This section described the components of a Structured Interaction, linking each to the super categories described in Section 5.6. Figure 5.7 illustrates the connections between the components of a Structured Interaction and the four WPL mechanisms and Understanding of Work Context.

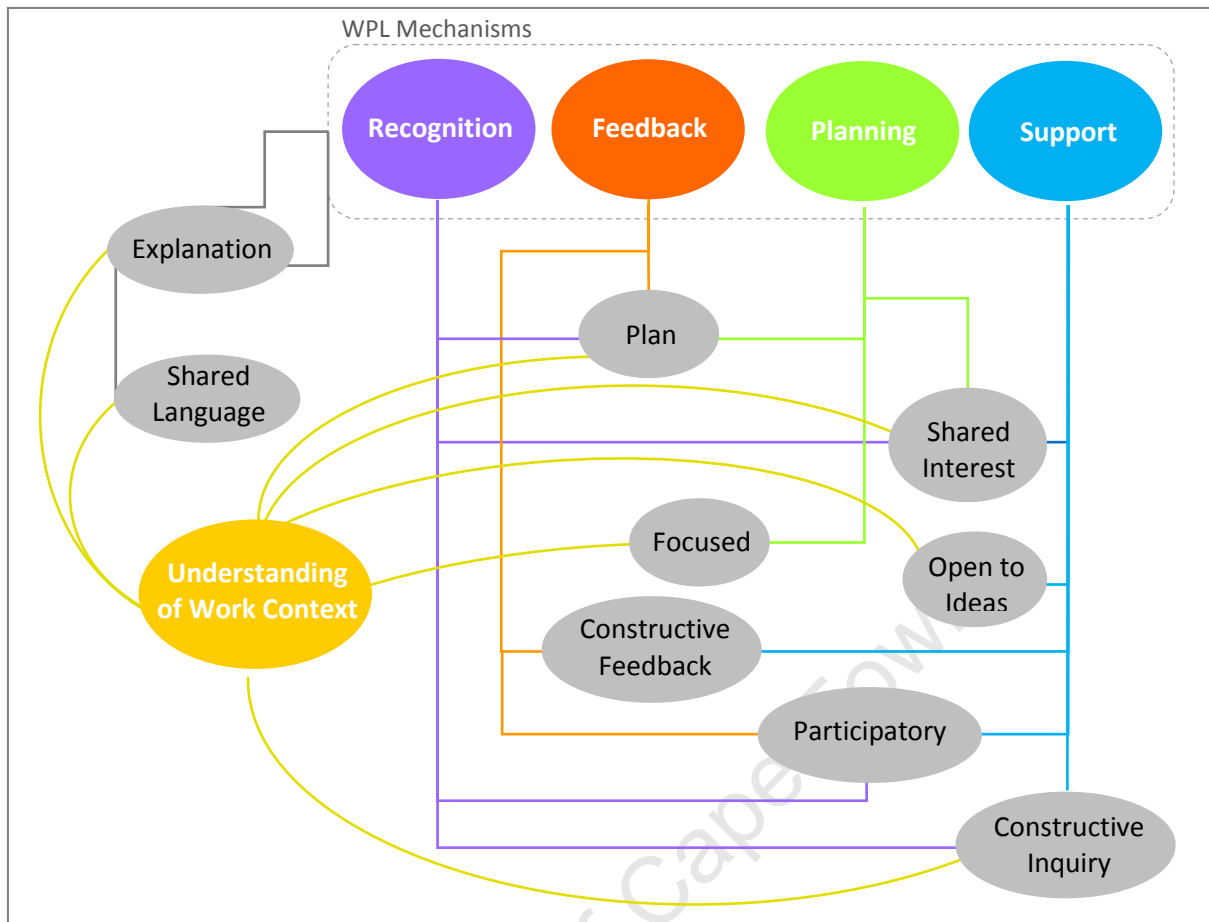


Figure 5.7: Interrelation between Core Category & Super Categories.

5.6.2 Relationships and Interactions

Relationships between individuals in the workplace play a factor in how they interact and learn from each other. Participants described five main types of relationships that exist between themselves and other individuals in the organisation: coach, manager, customer, and 'sound boarding' relationship. These relationships and the roles they play in the participants' work life have been discussed in previous sections. Interviewees' tend to relate good relationships with good interactions.

Seven components of Structured Interactions also emerged as components of building good relationships. Figure 5.8 illustrates these components. Participants cite these as relationship building factors.

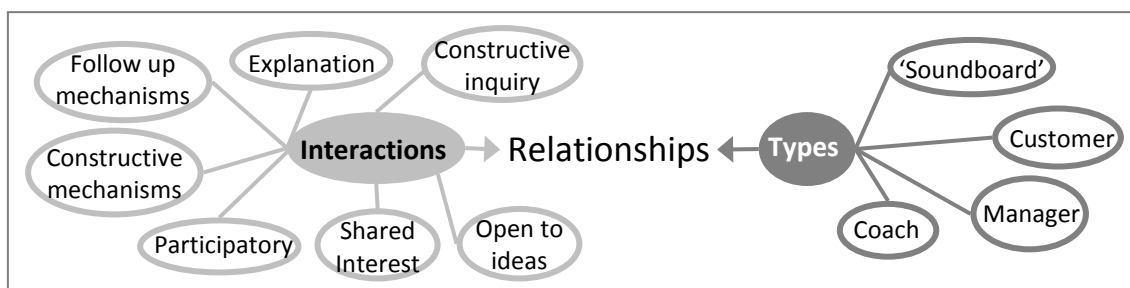


Figure 5.8: Relationships and Structured Interactions.

5.7 Grounded Workplace Learning Theory

This section discusses the emerging theory, grounded in the data of this study. First, definitions of the core category and six super categories are described. This is followed by a description of the theory, which is presented in the form of a causal model. The model shows the interrelation between Structured Interactions (core category) and the four WPL mechanisms, Understanding of Work Context and Taking Initiative to Interact (the six super categories).

5.7.1 Definition of Categories

Table 5.5 defines each category that emerged in this study using the descriptions presented earlier in this chapter. A key to reading this table is located in Tables 5.1, 5.2, and 5.3.

Table 5.5: Table of Definitions of Core Category and Super Categories.

Concept	Sense (general)	Reference (in this study's context)	Functionality (why)	Operational (how)
Support	To provide others with encouragement and help in order for them to succeed.	Mechanisms in the organisation that promote encouragement, guidance and collaboration in work activities and goal achievement between colleagues.	Enables focused interactions that have a shared interest among participants who are open to each others' ideas.	Through career development support and goal progress support from managers, and problem solving support from interaction with colleagues.
Recognition	To be rewarded and appreciated for achievements.	Mechanisms in the organisation that acknowledge and reward individuals and teams for taking initiative at work, coming up with innovations, making improvements, achieving goals, and sharing knowledge.	Creates motivation towards future participation in interactions and a shared interest among participants.	Being recognised by the organisation and its members through individual awards, team awards, department awards, knowledge sharing rewards and job promotions.
Planning	To decide what needs to be done, how it will be done and make necessary arrangements.	Mechanisms in the organisation that assist individuals with developing, preparing and arranging work goals and work activities.	Enables focused interactions that have a shared interest among participants that result in action or feedback plans.	Through goal setting sessions, and work activity (meetings) planning.
Feedback	Providing evaluative information from involvement in activities.	Mechanisms in the organisation that provide feedback to individuals about their	Enable participatory interactions, where individuals	Through mechanisms in the organisation that monitor and

		work activities, achievements and performance.	inquire & listen, verify understanding, and build on each other's ideas.	review activities and goals, in order to provide feedback.
Taking Initiative to Interact	The ability to begin a series of behaviours directed towards interacting.	The interest and actions taken by an individual in the workplace to instigate an interaction with his/her colleagues.	To learn in Structured Interactions, achieve work goals and recognition.	By being motivated to take initiative, by being supported during interactions, and by receiving feedback that encourages taking initiative.
Understanding of Work Context	Being aware of the set of circumstances that surround	Understanding the roles, goals, intentions, and activities of other individuals, teams, departments, and the organisation as a whole.	Individuals' understanding of each other's work context creates a shared language, shared interest, improving communication and ability to learn during interactions.	Feedback and Support Mechanisms improve individuals' understanding of each other's work context.
Structured Interaction	An interaction that is organised according to certain criteria.	Two or more people interacting together (thinking and communicating their ideas) through conversation that is driven by the four WPL mechanisms and enabled by their understanding of each others' work context.	To learn in Structured Interactions, achieve work goals and build 'good' work relationships.	Through an interaction that is focused and participatory, where individuals are open to each others' ideas and have a shared language, shared interest, constructive inquiry, constructive feedback, descriptive explanations, and 'feedback and action' plans.

5.7.2 Model for Workplace Learning

This section presents the theory for WPL that emerged in this study. Figure 5.9 presents the theory in the form of a causal model. The left half of the model represents the interaction between the four WPL mechanisms at an organisational level. In the workplace, systems and activities exist that generate *Planning, Feedback, Recognition, and Support mechanisms*. Collectively, these WPL mechanisms motivate individuals to *Take Initiative to Interact* and enable *Structured Interactions* to take place (both at an individual level). They are in fact the

driving force behind Structured Interactions, where individuals can engage in *focused* conversations with a *shared interest* and *language*. Through *constructive inquiry* and *feedback*, being *open to each other's ideas*, and *descriptive explanations* that illustrate *logic*, participants can get to the heart of their problems and achieve the goal of the interaction.

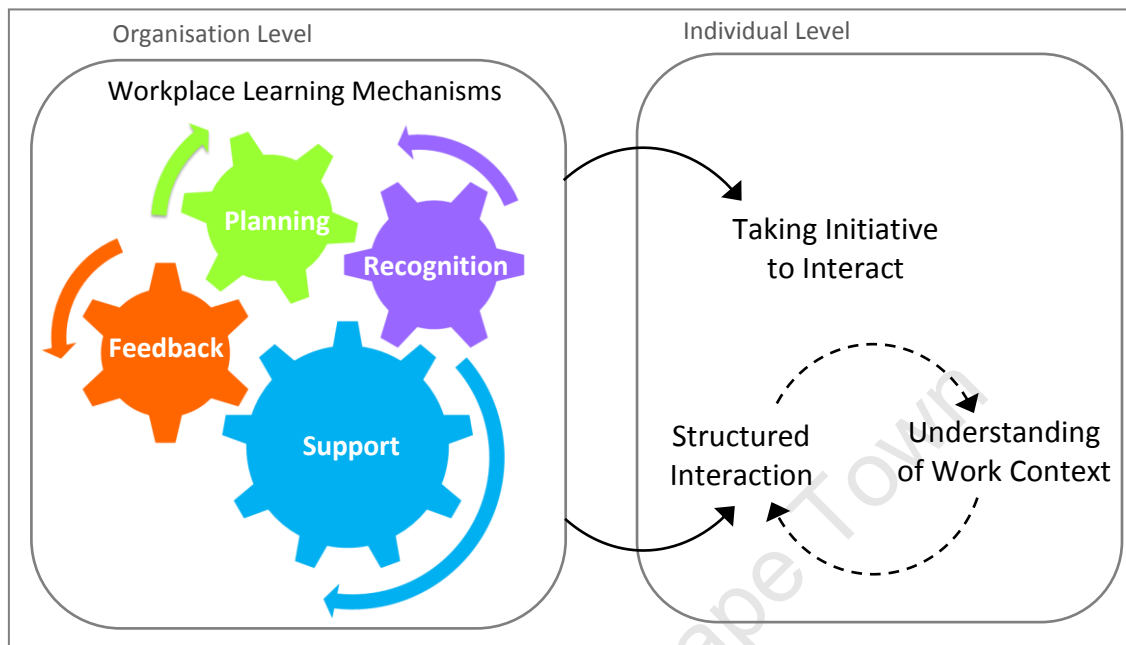


Figure 5.9: Workplace Learning Theory Emerging from this Study.

When individuals participate in Structured Interactions, they improve their *Understanding of each other's Work Context*. That is, they gain a better understanding of the roles, goals, intentions, and activities of other individuals, teams, departments, and the organisation as a whole. This in turn reinforces their shared interest and language, improving their ability to have meaningful communication. Conversations are the vehicle for learning in Structured Interactions, and provide a means to communicate ideas and build relationships. The reinforcing relation between *Structured Interactions* and *Understanding of Work Context* creates an ideal space for learning. A learning space is a conceptual environment with the right 'mix' of learning elements (factors that influence learning as illustrated in Figure 5.2).

5.8 Chapter Summary

This chapter presented the findings that emerged from this study. It provided an overview of the context of the research study, followed by descriptions of the results that arose from data analysis. Structured Interactions emerged as the core category, along with four WPL mechanisms and Understanding of Work Context that emerged as super categories in this inquiry. A theoretical model was then presented, illustrating the interaction between emerging categories, and how they enable individuals to learn in the workplace. The following chapter presents a discussion of the results of this study. This discussion is located in extant literature and aims to position the theoretical model within existing workplace learning knowledge.

6 Discussion and Concluding Remarks

6.1 Introduction

The focus of this dissertation is to answer the questions of *how individuals learn in the workplace* and *how organisations can facilitate this learning*. Chapter 1 presented the background and research questions of this study. The following chapter discussed relevant literature on concepts surrounding workplace learning. In Chapter 3, the grounded theory principles guiding data gathering and data analysis were presented. Chapter 4 linked the study's methodology to the research strategy, illustrating the methods used by the researcher. Chapter 5 presented the results from the grounded theory analysis of data and presented the grounded theory for workplace learning in the form of a theoretical model.

This chapter serves to discuss the results presented in Chapter 5 in the context of the literature discussed in Chapter 2 and other literature that is now relevant based on the results that emerged. Firstly, the results are related to the study's research questions. Next, the grounded theory for workplace learning is discussed with reference to relevant literature. The chapter concludes by presenting possibilities for future work and concluding remarks.

6.2 Relating the Research Questions to the Emerging Theory

This section discusses the findings in relation to the study's research questions. The objectives of the research (research questions and focus areas) are revisited and the results are presented in relation to the objectives. Figure 6.1 relates the study's findings to the research questions (RQ 1 and RQ 2).

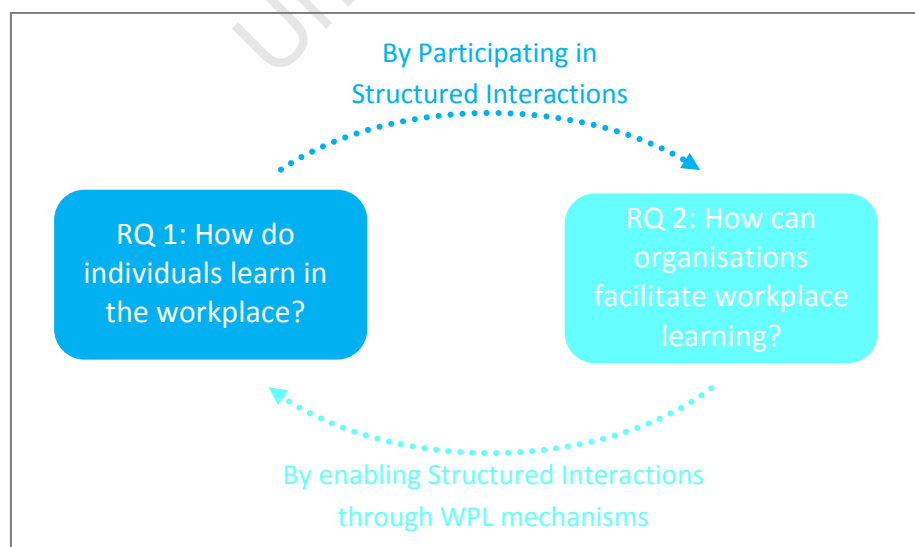


Figure 6.1: Research Questions and Answers.

From the analysis of data, *Structured Interactions* emerged as the core category, along with six super categories. A set of four super categories emerged as WPL mechanisms: *Recognition, Feedback, Planning, and Support*. This set of super categories act as mechanisms (present in the workplace) that enable Structured Interactions to take place. The other two super categories were: *Understanding of Work Context* and *Taking Initiative to Interact*.

The core category is central to answering this study's research questions. Specifically, it offers an answer for Research Question 1: *Individuals learn within the workplace through every day work activities by participating in Structured Interactions*. However, simply participating in Structured Interactions does not imply learning is taking place. *Understanding of Work Context* emerged from the data as a super category to explain the relationship between *participating in Structured Interactions* and *actually learning in those interactions*. The interaction between *Structured Interactions* and *Understanding of Work Context* creates a space for learning to take place.

This leads the discussion to Research Question 2. Four WPL mechanisms emerged in this study as a set of super categories:

- ❖ Recognition
- ❖ Feedback
- ❖ Planning
- ❖ Support

Collectively, these WPL mechanisms motivate individuals to *Take Initiative to Interact* and enable *Structured Interactions* to take place. This work allowed the generation of a grounded WPL theory that links the categories together in the form of a theoretical model (see Figure 5.9).

6.3 Learning through Structured Interactions

This section discusses the results from Chapter 5 in the context of literature discussed in Chapter 2 and other relevant literature. First, the concept of Progressive learning is introduced, in relation to the study's results and existing concepts of *formal* and *informal* learning and Elkjaer's 'third way' to workplace learning from Chapter 2. Next, learning through Structured Interactions is discussed in comparison with the concept of strategic conversations found in literature. Lastly, a systems view of workplace learning using principles from Beer's (1985) Viable Systems Model is presented.

6.3.1 Introducing Progressive Learning

The first research question investigated how individuals learn in the workplace. Participating in everyday work activities through Structured Interactions emerged as the answer to this question. When individuals carry out their daily work activities, they interact with other

people. The data from this study showed that individuals learn through these interactions. A Structured Interaction involves two or more people and has no formal or informal boundaries. That is, it can take place in both formal and informal settings and takes the form of dialogues, discussions and debates in meetings, 'casual' chats, and electronic communications.

This type of workplace learning points towards what has been previously mentioned as 'informal learning' in Chapter 2. Therefore, areas of 'formal learning' such as on-the-job training are not considered in this discussion. Instead, focus is on learning that is often considered as being 'unplanned' or 'unstructured' and having 'no formal curriculum' or 'prescribed outcomes' (Hager, 1998). Billett (2002) argues that describing learning as 'informal' results in negative connotations of the concept. In agreement with Billett (2002), such vocabulary is avoided in this dissertation, as it argued that referring to learning as 'informal' or 'unstructured' does tend to place it in a less positive light than its counterpart, formal structured learning. Furthermore, another potential reason for contesting their use could be due to the nature of workplaces themselves. Organisations are becoming increasingly conscious about maintaining their survival in a competitive economy (Senge, 1990), which in turn is making them more conscious about their work practices and structures. They are increasing the association of notions such as 'high performance' and 'learning' with their organisational culture. Thus more importance and resources are being placed on planning and structuring all aspects of the workplace. Such conditions create not only positive associations and comfort with the term 'structure' in employees' minds but also create the *need* for structured mechanisms. Thus informal and unstructured mechanisms are considered as second-rate to structured formal ones, irrespective of the value of each holds in terms of learning facilitation. Additionally, employees' may already be biased towards 'formal' learning mechanisms due to experiences in educational institutions (schools, colleges and universities).

Instead, this discussion introduces a term to describe learning within workplace settings that does not fall within the realm of 'formal learning'. This type of learning is referred to as '*progressive learning*', which should not be confused with the idea of 'progressive education'. Progressive learning is the learning that takes place in workplace settings, where individuals learn through every day job tasks, activities, interactions and relations. It is the type of learning that helps individuals simply to *get the job done*, or even *do it better*. Progressive learning falls under Stern and Sommerlad's (1999) third form of learning, where 'learning and working' are regarded as being 'inextricably related'. On a high level, it can be viewed as learning that helps individuals to progress in their journey of lifelong learning or learning that helps individuals to progress in their careers. At a lower level of conceptualisation, it can be understood as helping individuals to progress with specific work projects, tasks, activities or even progress their relations with other individuals in the workplace. Progressive learning is associated with progressing both personal and professional work objectives and goals.

The reasons for selecting 'progressive' to describe everyday learning within organisations are as follows: Firstly, it would appear to have no previous associations (negative or positive) with organisational or workplace learning in the literature. Thus, it enables a dialogue of workplace learning without bias. Secondly, the term 'progressive' suggests advancement and brings with it the notions of moving forward. It implies steady increments of learning and better conditions to come. Additionally, it is associated with notions of growth and broadness of thought and expression. Progressive learning is considered as being both 'deliberative' and 'reactive'. These two characteristics of learning refer not to their conventional meanings, but instead to Eraut's (2000) description of deliberative and reactive learning, presented in Chapter 2. Although progressive learning may not be planned as it would be in training courses or institutionalised programs, it is nonetheless deliberative. The reason for this is that progressive learning is always viewed as intentional.

Although some authors suggest that learning within the workplace can be viewed as either intentional or unintentional (see for example Marsick & Watkins, 1990), this dissertation argues that viewing learning as such is somewhat misguided. This dissertation takes the position that all learning is intentional. The super category *Taking Initiative to Interact* that emerged from this study suggests that learning is instigated by some form of inquiry on the individual's part. The results show that individuals experience events in their work activities that lead them to take initiative to interact with others. These 'events' could be uncertainties (for example 'confusion about a work task'), problematic situations (for example 'a system failure'), or even curiosity (for example 'how to improve an existing system'). All of this results in inquiry, which leads to developing interest and taking actions to resolve the inquiry - that is, participating in Structured Interactions.

Elkjaer's (2004a) 'third way' of workplace learning supports the notion of learning as being intentional. This approach to learning helps identify progressive learning as being intentional, deliberate and reactive. Individuals experience uncertainty in situations and react by inquiring into them, which sets off the learning process. The qualities of Structured Interactions presented in Chapter 5 show that progressive learning is participatory in nature, takes place between individuals with a shared interest and commitment in activities, and a shared language. This too is supported by Elkjaer's conceptualisation of learning within 'social worlds', where individuals participate to 'achieve their goals' and build 'shared ideologies' about their work practice.

Another important aspect of learning that needs to be mentioned is the issue of varying motives. This study's results show that simply having access to interaction opportunities or even participating does not guarantee that learning will take place. Learning involves elements of context, motivation, thinking, and emotion. For progressive learning to take place there is a clear need to balance the interest of the 'individual' with the 'organisation', so as to create a shared interest and understanding among the collective. Concepts on the varying motives for learning presented in Chapter 2 relate to the findings in this study. Even

though organisations and individuals have differing motives for learning, an environment needs to be created where both parties can achieve their desired outcomes. That is, an environment where individuals can achieve their individual goals, whilst helping the organisation achieve organisational goals, by having a clear *Understanding of Work Context*. Considering the nature of organisations, it is clear that the organisation needs to facilitate this balancing act of motivations. The results show that organisations do this through four mechanisms that are present in the workplace. Section 6.4 continues this discussion and describes how organisations influence the *four WPL mechanisms to enable participation in Structured Interactions*.

6.3.2 Structured Interactions and Strategic Conversations

Conversations are the stem cells of learning, for they both create and transmit knowledge.

(Cross, 2007, p. 131)

The qualities of a Structured Interaction presented in Chapter 5 relate to the concept of strategic conversations found in the literature. Chermack et al. (2007) describe strategic conversations as “simple conversations, interactions and dialogues that occur among organisational members in everyday formal and informal situations” (p. 382). The description of the core category (Structured Interactions) in this study is similar to that of strategic conversations. These results show that Structured Interactions have no formal or informal boundaries. They take place in both formal and informal settings in the form of dialogues, discussions and debates in meetings, ‘casual’ chats, and electronic communications. Furthermore, this study found that conversations are the vehicle for learning in Structured Interactions, and provide a means to communicate ideas and build relationships between individuals. Structure refers to communication that is driven by the four WPL mechanisms that exist in the workplace and is enabled by the individuals’ understanding of each others’ work context. While interaction refers to two or more people participating together, thinking or problem solving and communicating their ideas.

Some qualities of a Structured Interaction presented in Chapter 5 (repeated here for convenience as Figure 6.2) are shared by those of strategic conversations. Chermack et al. (2007) describe four elements of a strategic conversation: “a common language”, “alignment of ideas”, “willingness to engage in rational argumentation”, and “the evolutions of ideas inside the organisation” (p. 382). Both Structured Interactions and strategic conversations involve a shared or common language that is socially constructed through participation in, and observation of all aspects of work life in the organisation. Having a shared language influences the content of interactions and improves the participants understanding of ‘what’ each other is saying and ‘why’. Another commonality between the two is shared interest or alignment of ideas. Individuals have a shared interest in the focus or aim of the interaction. The results from this study show that goal alignment is the main factor that creates a shared interest among individuals, which in turn creates an alignment of interests. This is reinforced by participating in successive Structured Interactions.

Additionally, data revealed that understanding each other's work context creates a vested interest in interactions and a sense of shared practice among those who are interacting.

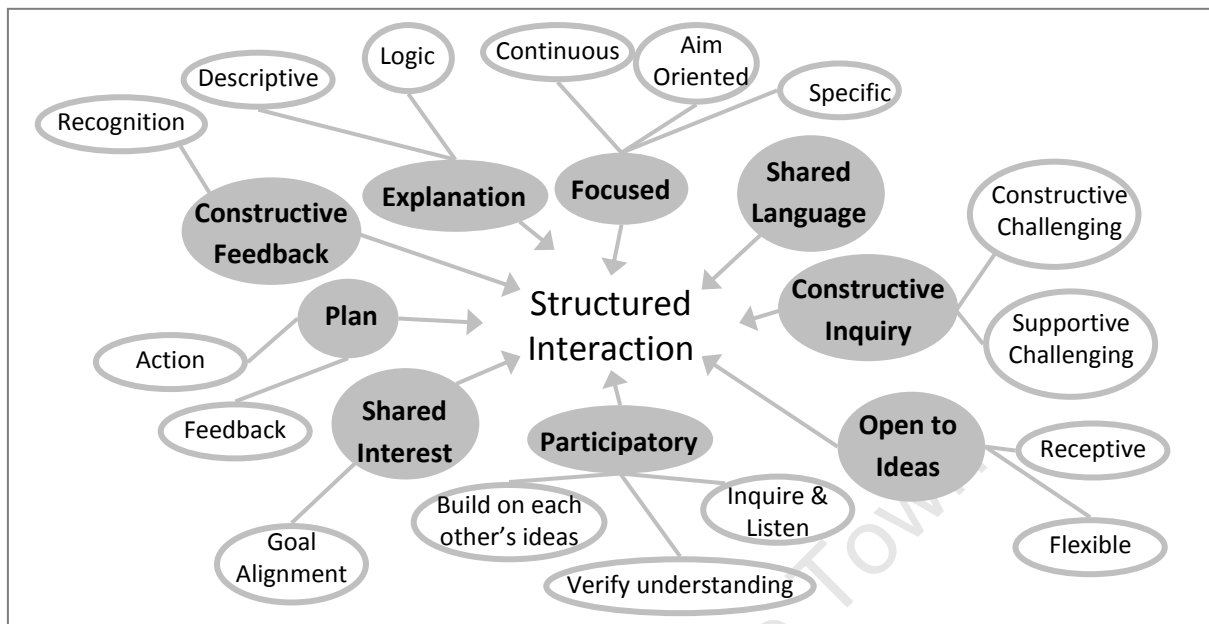


Figure 6.2: Qualities of Structured Interaction.

Two qualities of Structured Interactions (open to ideas and constructive inquiry) coincide with the third element of a strategic conversation (willingness to engage in rational argumentation). This study found the two qualities to involve being receptive and flexible to the ideas and responses of others' during interactions and participating in constructive and supportive challenging. They are about questioning and challenging the ideas of others for the distinct purpose of solving problems and reaching good solutions and challenging traditional thinking to come up with new 'ways' with the hope of improving the quality of the outcome. Another quality of Structured Interactions is that they result in a plan, either for action or feedback or both. These plans are 'loose' in nature and can take the form of a 'way forward' or which 'actions' to take next or a follow up discussion. They effectively result in the evolution of ideas, which is the fourth element of strategic conversations.

The similarities between Structured Interactions (emerging from this study) and strategic conversations (from literature) help to support the results of this dissertation. They suggest that the results from this study were not just an isolated outcome, but instead offer a reliable account of how individuals learn in workplace settings.

"Conversation is a meeting of minds with different memories and habits. When minds meet, they don't just exchange facts: they transform them, reshape them, draw different implications from them, engage in new trains of thought. Conversation doesn't just reshuffle the cards: it creates new cards."
(Zeldin, 1998, p. 14)

Structured Interactions serve as an instrument that promotes good discourse and learning, connecting thoughts and actions. In time, Structured Interactions become a natural part of

work life, creating rich conversations where individuals can communicate effectively and learn from each other.

To ensure sustained learning in the workplace, an organisation needs to establish and maintain a viable learning system. Principles from Beer's (1985) Viable System Model (VSM) can be used to understand the interaction between the four WPL mechanisms (generated in this study) and describe how organisations can influence the mechanisms to enable learning in Structured Interactions. A viable system is one that can maintain stability through internal and external disturbance. It has the ability to improve based on previous experiences, react and respond to both every-day and unexpected situations, thus enabling survival in its changing environment (Beer, 1985; Bustard, Sterritt, & Taleb-Bendiab, 2006).

An effective learning system is one that exists in, and is reactive to, complex environments through the adequacy of its structures (Keating, 2000). Workplaces are complex environments; composed of individuals and systems with varying motives and goals. Adequate structures maintain the system's ability to adapt to changing environmental conditions, whilst proficiently responding to emergent issues (Bolman & Deal, 1997). Espejo et al. (1996) describe structure as "the set of arrangements by which the resources of an organisation, human and others, are connected through relationships" (p. 20). Keating (2000) suggests that both formal and informal relationships between people, technology and implementing mechanisms generate structural patterns. These patterns coupled with physical entities and mechanisms of an organisation encompass structure. Using the above conceptualisations of a *system* and *structure*, the VSM can offer a systems view of workplace learning.

Using the theory of workplace learning (see Figure 5.9 in Chapter 5) generated in this study and drawing on principles of VSM, a viable learning system can be designed (see Appendix B). Collectively, the four WPL mechanisms from this study (planning, support, recognition, and feedback) create mechanisms for viability, generating, it is argued, a *Viable System for learning in the workplace*. The discussion in Appendix B presents key aspects to consider when designing a learning system for the workplace.

6.4 Possibilities for Further Research

This study explored how individuals learn in their places of work through every-day work activities. It found that mechanisms that exist in the workplace facilitate their learning by enabling Structured Interactions to take place. An interesting area to explore in future work would be the effect of varying the degree of each WPL mechanism. This study found that these mechanisms help individuals interact in a constructive way – that helps them learn from each other. However, if the level of these mechanisms were to change, would Structured Interactions still take place? For example, consider the Planning WPL mechanisms. The results showed that the 'state' that these mechanisms existed during data gathering were optimal for creating Structured Interactions. However, if they were to

change to an extreme state of ‘over planning’ where individuals felt overloaded with goals in their work activities, would individuals still participate in a structured manner?

The results from this study suggest that the four mechanisms have a balancing effect on each other. That is, the Recognition mechanisms balance the Planning mechanisms by providing motivation for ‘keeping the system’ running. Additionally, Support and Feedback mechanisms support the other two mechanisms, allowing for continued participation in Structured Interactions. However, to better understand the conditions required to create Structured Interactions in the workplace, this area of research needs to be addressed. Furthermore, the results from such a project would bring new insight in understanding the interaction between the four WPL mechanisms and help to further the design of a learning system for the workplace.

6.5 Concluding Remarks

This dissertation contributes to the broader understanding of how individuals learn in their workplace. In response to the research questions, this study identified participation in Structured Interactions to explain how individuals learn through every-day work activities. Four key workplace learning mechanisms emerged as enablers of Structured Interactions. This study found that the four mechanisms not only enable Structured Interactions to take place, but also result in individuals taking initiative to interact with each other in Structured Interactions and improved their understanding of each other’s work context. Using the nine components of Structured Interactions that emerged from this study, this dissertation links participation in work activities with concepts of conversation and learning. Furthermore, using the four workplace learning mechanisms, a system for learning was designed. This design process was guided using principles from Beer’s (1985) Viable System Model to generate a learning system that is viable and able to withstand changes in its environment.

During the course of this research study, ensuring rigour went beyond simply meeting a certain set criteria. This researcher established “thorough, careful, honest and accurate” (Mason, 2002, p. 118) research questions and demonstrated data generation and analysis processes appropriate to such questions. Arguments for the relevance of these processes were made in relation to the research questions and the “actual course of the research process” was presented in this dissertation, rather than an “idealized version” (Rolfe, 2006, p. 309). Using this strategy with Guba and Lincoln’s criteria for trustworthiness demonstrates methodological rigour on the researcher’s part.

In conclusion, the results from this study not only augment our understanding of workplace learning, but also offer practical insight into establishing a learning system in organisations.

References

- Allen, G. (2003). A critique of using grounded theory as a research method. *Electronic Journal of Business Research Methods*, 2 (1), 1-10.
- Argyris, C. (1977). Double loop learning in organizations. *Harvard Business Review*, 55 (5), 115-126.
- Armstrong, A., & Foley, P. (2003). Foundations for a learning organization: organization learning mechanisms. *The Learning Organization*, 10 (2), 74-82.
- Ashton, D. (2004). The impact of organisational structure and practices on learning in the workplace. *International Journal of Training and Development*, 8 (1), 43-53.
- Bechtel, P. (1993). *Untangling Organizational Gridlock: Strategies for Building a Customer Focus*. Milwaukee: ASQC Press.
- Beckett, D., & Hager, P. (2002). *Life, Work and Learning: Practice in Postmodernity*. London: Routledge.
- Beer, S. (1985). *Diagnosing the system for organizations*. Chichester: John Wiley & Sons.
- Bell, J. (2005). *Doing your research project: A guide for first-time researchers in education, health and social science* (Fourth edition Ed.). Berkshire: Open University Press.
- Bell, R. C. (2005). The Repertory Grid Technique. In F. Fransella (Ed.), *The Essential Practitioner's Handbook of Personal Construct Psychology* (pp. 67-76). Chichester: John Wiley & Sons Ltd.
- Bierema, L. (2001). Women, Work and Learning. *New Directions for Adult and Continuing Education*, Winter 2001 (92), 53-62.
- Billet, S. (2000). Guided Learning at Work. *Journal of Workplace Learning*, 12 (7), 272-285.
- Billett, S. (2002). Critiquing workplace learning discourses: Participation and continuity at work. *Studies in the Education of Adults*, 34 (1), 56-67.
- Billett, S. (2001). Learning through work: workplace affordances and individual engagement. *Journal of Workplace Learning*, 13 (5), 209-214.
- Billett, S. (2004). Learning through work: workplace participatory practices. In H. Rainbird, A. Fuller, & A. Munro (Eds.), *Workplace Learning in Context* (pp. 109-125). London: Routledge.

- Bloor, M., & Wood, F. (2006). *Keywords in Qualitative Methods: A Vocabulary of Research Concepts*. London: Sage Publications Ltd.
- Böhm, A. (2004). Theoretical Coding: Text Analysis in Grounded Theory. In U. Flick, E. V. Kardorff, & I. Steinke (Eds.), *A Companion to Qualitative research* (pp. 270-275). London: Sage Publications Ltd.
- Bolman, L., & Deal, T. (1997). *Reframing Organizations*. New York: Jossey-Bass.
- Boud, D. (1998). A new focus on workplace learning research. In D. Boud (Ed.), *Current issues and new agendas in workplace learning* (pp. 6-11). Sydney, Australia: National Centre for Vocational Education Research Ltd.
- Bowen, G. A. (2006). Grounded Theory and Sensitizing Concepts. *International Journal of Qualitative Methods*, 5 (3), 1-9.
- Bryson, J., Pajo, K., Ward, R., & Mallon, M. (2006). Learning at work: organisational affordances and individual engagement. *Journal of Workplace Learning*, 18 (5), 279-297.
- Bustard, D., Sterritt, R., & Taleb-Bendiab, A. L. (2006). Autonomic system design based on the integrated use of SSM and VSM. *Artificial Intelligence Review*, 25 (4), 313-327.
- Candy, P., & Matthews, J. (1998). Fusing learning and work: Changing conceptions of workplace learning. In D. Boud (Ed.), *Current issues and new agendas in workplace learning* (pp. 12-29). Sydney: National Centre for Vocational Education Research Ltd.
- Charmaz, K. (2006). *Constructing Grounded Theory: A practical guide through Qualitative Analysis*. London: Sage Publications Ltd.
- Charmaz, K. (2005). Grounded Theory in the 21st Century: Applications for Advancing Social Justice Studies. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research. Third Edition* (pp. 507-536). London: Sage Publications.
- Chermack, T., Van der Merwe, L., & Lynham, S. (2007). Exploring the relationship between scenario planning and perceptions of strategic conversation quality. *Technological Forecasting & Social Change*, 74 (3), 379-390.
- Clemson, B. (1984). *Cybernetics: A New Management Tool*. Turnbridge Wells, Kent: Abacus Press.
- Coetzer, A. (2007). Employee perceptions of their workplaces as learning environments. *Journal of Workplace Learning*, 19 (7), 417-434.
- Cofer, D. A. (2000). *Informal Learning in the Workplace: A Brief Review of Practice and Application*. The Ohio State University, College of Education, Columbus.

- Colley, H., Hodkinson, P., & Malcolm, J. (2003). *Informality and Formality in Learning*. London: Learning and Skills Research Centre.
- Colley, H., Hodkinson, P., & Malcolm, J. (2002). *Non-formal learning: mapping the conceptual terrain. A Consultation Report*. University of Leeds Lifelong Learning Institute, Leeds.
- Collin, K. (2006). Connecting work and learning: design engineers' learning at work. *Journal of Workplace Learning*, 18 (7/8), 403-413.
- Cross, J. (2007). *Informal Learning - Rediscovering the Natural Pathways That Inspire Innovation and Performance*. San Francisco: Pfeiffer an Imprint of Wiley.
- Cunningham, J. (1998). The workplace: A learning environment. Paper. *The First Annual Conference of the Australian Vocational Education and Training Research Association*. Sydney.
- Cutcliffe, J. R. (2005). Adapt or adopt: developing and transgressing the methodological boundaries of grounded theory. *Journal of Advanced Nursing*, 51 (4), 421-428.
- Dale, M., & Bell, J. (1999, August). *Informal Learning in the Workplace, Research Brief No 134*. Retrieved October 17, 2008, from Department for Education and Employment (DfEE): <http://www.dfes.gov.uk/research/data/uploadfiles/RB134.doc>
- De Geus, A. (1988). Planning as learning. *Harvard Business Review*, 66 (2), 70-74.
- De Geus, A. (1998). The Living Company: A Recipe for Success in the New Economy. *The Washington Quarterly*, 21 (1), 197 - 205.
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (2000). *The Handbook of Qualitative Research*. California: Sage Publications.
- Department of Labour. (2008). *Engineering Professionals: Crucial Key to Development and Growth in South Africa*. Department of Labour, South Africa.
- Deshpande, R. (1983). Paradigms lost: on theory and method in research in marketing. *The Journal of Marketing*, 47 (4), 101-110.
- Dodgson, M. (1993). Organizational Learning: A Review of Some Literatures. *Organizational Studies*, 13 (3), 375-394.
- Douglas, D. (2003). Inductive theory generation: A grounded approach to business inquiry. *Electronic Journal of Business Research Methods*, 2 (1), 47-54.
- Drew, S. A., & Smith, P. A. (1995). The learning organization: change proofing and strategy. *The Learning Organization*, 2 (1), 4-14.

- Duffy, K., Ferguson, F., & Watson, H. (2004). Data collection in grounded theory - Some practical issues. *Nurse Researcher*, 11 (4), 67 - 78.
- Easterby-Smith, M. (1997). Disciplines of organizational learning: contributions and critiques. *Human Relations*, 50 (9), 1085-1113.
- Easterby-Smith, M., & Araujo, L. (1999). Organizational learning: current debates and opportunities. In M. Easterby-Smith, J. Burgoyne, & L. Araujo (Eds.), *Organizational Learning and the Learning Organization* (pp. 1-22). London: Sage.
- Easterby-Smith, M., Thorpe, R., & Holman, D. (1996). Using repertory grids in management. *Journal of European Industrial Training*, 20 (3), 3-30.
- Edwards, M. H., McDonald, S., & Young, S. M. (2008). The repertory grid technique: Its place in empirical software engineering research. *Information and Software Technology*, 1-14.
- Elkjaer, B. (2000). Learning and getting to know: the case of knowledge workers. *Human Resource Development International*, 3 (3), 343-359.
- Elkjaer, B. (2003a). Social Learning Theory: Learning as Participation in Social Processes. In M. Easterby-Smith, & M. A. Lyles (Eds.), *The Blackwell handbook of organizational learning and knowledge management* (pp. 38-53). Malden, Mass: Blackwell.
- Elkjaer, B. (2003b). Organizational learning with a pragmatic slant. *International Journal of Lifelong Education*, 22 (5), 481-494.
- Elkjaer, B. (2004a). Organizational Learning: The 'Third Way'. *Management Learning*, 35 (4), 419-434.
- Elkjaer, B. (2004b). Organisational learning by way of organisational development? *Workplace Learning - From the Learners' Perspective, Copenhagen 25-27 November 2004*. Copenhagen: Learning Lab Denmark.
- Elkjaer, B. (2005). From digital administration to organisational learning. *Journal of Workplace Learning*, 17 (8), 533-544.
- Engestrom, Y., & Kerosuo, H. (2007). From workplace learning to inter-organizational learning and back: the contribution of activity theory. *Journal of Workplace Learning*, 19 (6), 336-342.
- Engestrom, Y., & Middleton, D. (Eds.). (1996). *Cognition and communication at work*. Cambridge: Cambridge University Press.
- Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education*, 26 (2), 247-273.

- Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*, 70 (1), 113-136.
- Eraut, M., Alderton, J., Cole, G., & Senker, P. (2000). Development of Knowledge and Skills at Work. In F. Coffield (Ed.), *Differing visions of a Learning Society* (pp. 231-262). Bristol: The Policy Press.
- Espejo, R., Schuhmann, W., Schwaninger, M., & Bilello, U. (1996). *Organizational Transformation and Learning: A Cybernetic Approach to Management*. Wiley: Chichester.
- Fenwick, T. (2001). Tides of change: new themes and questions in workplace learning. *New Directions for Adult and Continuing Education*, Winter 2001 (92), 3-17.
- Fenwick, T. (2008). Workplace learning: Emerging trends and new perspectives. *New Directions for Adult and Continuing Education*, 2008 (119), 17-26.
- Fernández, W. D. (2004). Using the Glaserian Approach in Grounded Studies of Emerging Business Practices. *Electronic Journal of Business Research Methods*, 2 (2), 83-94.
- Finlay, L. (2006). 'Rigour', 'Ethical Integrity' or 'Artistry'? Reflexively Reviewing Criteria for Evaluating Qualitative Research. *British Journal of Occupational Therapy*, 69 (7), 319-326.
- Fiol, M., & Lyles, M. A. (1985). Organizational learning. *Academy of Management Review*, 10 (4), 803-813.
- Fischer, E., & Otnes, C. C. (2006). Breaking new ground: developing grounded theories in marketing and consumer behavior. In R. W. Belk (Ed.), *Handbook of Qualitative Research Methods in Marketing* (pp. 19-30). Cheltenham: Edward Elgar Publishing.
- Flick, U., Kardorff, E. V., & Steinke, I. (Eds.). (2004). *A Companion to Qualitative Research*. California: Sage Publications.
- Fransella, F. (2005). Some Skills and Tools For Personal Construct Users. In F. Fransella (Ed.), *The Essential Practitioner's Handbook of Personal Construct Psychology* (pp. 41-56). Chichester: John Wiley & Sons Ltd.
- Fransella, F. (Ed.). (2005). *The Essential Practitioner's Handbook of Personal Construct Psychology*. Chichester: John Wiley & Sons Ltd.
- Fransella, F., & Neimeyer, R. A. (2005). George Alexander Kelly: The Man and his Theory. In F. Fransella (Ed.), *The Essential Practitioner's Handbook of Personal Construct Psychology* (pp. 3-14). Chichester: John Wiley & Sons Ltd.

- Fuller, A., Ashton, D., Felsted, A., Unwin, L., Walters, S., & Quinn, M. (2003). *The Impact of Informal Learning at Work on Business Productivity*. London: DTI publications.
- Fulmer, R. M., Gibbs, P., & Keys, J. B. (1998). The second generation learning organizations: new tools for sustaining competitive advantage. *Organizational Dynamics*, 27 (2), 6-20.
- Garavan, T. (1997). The learning organization: a review and evaluation. *The Learning organization*, 4 (1), 18-29.
- Garratt, B. (1999). The learning organization 15 years on: some personal reflections. *The Learning Organization*, 6 (5), 202-206.
- Garrick, J., & Usher, R. (2000). Flexible learning, contemporary work and enterprising selves. *Electronic Journal of Sociology*, 5 (1).
- Geertshuis, S., Holmes, M., Geertshuis, H., Clancy, D., & Bristol, A. (2002). Evaluation of Workplace Learning. *Journal of Workplace Learning*, 14 (1), 11-18.
- Glaser, B. G., & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine.
- Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report*, 8 (4), 597-607.
- Goulding, C. (1999). *Grounded theory: some reflections on paradigm, procedures and misconceptions, Technical Working Paper*. Shropshire: University of Wolverhampton.
- Guba, E. G., & Lincoln, Y. S. (1998). Competing Paradigms in Qualitative Research. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Landscape of Qualitative Research* (pp. 195-222). California: Sage Publications.
- Guba, E., & Lincoln, Y. (1989). *Fourth Generation Evaluation*. California: Sage Publications.
- Hager, P. (2004a). Lifelong learning in the workplace? Challenges and issues. *Journal of Workplace Learning*, 16 (1/2), 22-32.
- Hager, P. (2004b). The conceptualisation and measurement of learning at work. In H. Rainbird, A. Fuller, & A. Munro (Eds.), *Workplace Learning in Context* (pp. 242-258). London: Routledge.
- Hager, P. (1998). Understanding workplace learning: General perspectives. In D. Boud (Ed.), *Current issues and new agendas in workplace learning* (pp. 30-42). Sydney: National Centre for Vocational Education Research Ltd.

- Hakkarainen, K. P., Palonen, T., Paavola, S., & Lehtinen, E. (2004). *Communities of Networked Expertise: Professional and Educational Perspectives. Advances in Learning and Instruction*. Amsterdam: Elsevier Science.
- Hara, N. (2001). Formal and informal learning: incorporating communities of practice into professional development. *Paper presented at the Annual Meeting of the American Educational Research Association*. Seattle.
- Hawkins, P. (1994). Organizational learning: taking stock and facing the challenge. *Management Learning*, 25 (3), 433-461.
- Hicks, E., Bagg, R., Doyle, W., & Young, J. D. (2007). Canadian accountants: examining workplace learning. *Journal of Workplace Learning*, 19 (2), 61-77.
- Hilder, T. (1995, June 12). *The Viable System Model*. Retrieved March 26, 2009, from National Alliance for Physician Competence: http://www.innovationlabs.com/summit/reading_materials/vsm.pdf
- Hong, J. (1999). Structuring for organizational learning. *The Learning Organization*, 6 (4), 173-185.
- Hulkari, K., & Mahlamäki-Kultanen, S. (2008). Reflection through web discussions: assessing nursing students' work-based learning. *Journal of Workplace Learning*, 20 (3), 157 - 164.
- Hunter, K., Hari, S., Egbu, C., & Kelly, J. (2005). Grounded Theory: Its Diversification and Application Through two Examples from Research Studies on Knowledge and Value Management. *Electronic Journal of Business Research Methods*, 3 (1), 57-68.
- Huysman, M. (1999). Balancing bias: a critical review of the literature on organizational learning. In M. Easterby-Smith, L. Araujo, & J. Burgoyne (Eds.), *Organizational Learning and the Learning Organization: Developments in Theory and Practice* (pp. 59-74). London: Sage.
- Huzzard, T. (2004). Communities of domination? Reconceptualising organisational learning and power. *Journal of Workplace Learning*, 16 (6), 350-361.
- Illeris, K. (2004). A model for learning in working life. *The Journal of Workplace Learning*, 16 (8), 431-441.
- Illeris, K. (2003). Workplace learning and theory. *Journal of Workplace Learning*, 15 (4), 167-178.
- Jankowicz, D. (2004). *The easy guide to repertory grids*. Chichester: John Wiley & Sons Ltd.

- Jones, A. M., & Hendry, C. (1994). The learning organization: adult learning and organizational transformation. *British Journal of Management*, 5 (2), 153-162.
- Jones, L., & Somekh, B. (2005). Observation. In B. Somekh, & C. Lewin, *Research Methods in Social Sciences* (pp. 138 - 145). London: Sage Publications.
- Keating, C. (2000). Improving Practice: A systems-based methodology for structural analysis of health care operations. *Journal of Management in Medicine*, 14 (3/4), 179-198.
- Khandeka, A., & Sharma, A. (2006). Organizational learning and performance: Understanding Indian scenario in present global context. *Education + Training*, 48 (8/9), 682-692.
- Kira, M., & Frieling, E. (2005). *Collective Learning - Building on Individual. Fifth Annual Meeting of the European Chaos and Complexity in Organisations Network (ECCON)*. Elspeet: European Chaos and Complexity in Organisations Network (ECCON).
- Lakoff, G., & Johnson, M. (2005). Metaphors We Live By (1980). In J. O'Brien (Ed.), *The Production of Reality: Essays and Readings on Social Interaction. Fourth Edition* (pp. 103-114). Thousand Oaks: Pine Forge Press.
- Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Laws, K., & McLeod, R. (2004). Case study and grounded theory: sharing some alternative qualitative research methodologies with systems professionals. In M. Kennedy, G. W. Winch, R. S. Langer, J. I. Rowe, & J. M. Yanni (Ed.), *Proceedings of the 22nd International Conference of the Systems Dynamics Society, July 25-29*. Oxford: Wiley.
- Lee, T., Fuller, A., Ashton, D., Butler, P., Felstead, A., Unwin, L., et al. (2004). *Learning as Work: Teaching and Learning Processes in the Contemporary Work Organisation, Learning as Work Research Paper No. 2*. University of Leicester. Leicester: Centre for Labour Market Studies, University of Leicester.
- Levitt, B., & March, J. G. (1988). Organizational learning. *Annual Review of Sociology*, 14 (1), 319-340.
- Levy, M. (1987). *The Core Skills Project and work-based learning: An overview of the development of a new model for the design, delivery and accreditation of vocational education and training*. Sheffield: Manpower Services Commission.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. California: Sage Publications.
- Lindell, M., & Stenstrom, M. L. (2005). Between policy and practice: Structuring workplace learning in higher vocational education in Sweden and Finland. *Journal of Workplace Learning*, 17 (3), 194-211.

- Livingstone, D. W., & Sawchuk, P. H. (2005). Hidden knowledge: working-class capacity in the 'knowledge-based economy'. *Studies in the Education of Adults*, 37 (2), 110-122.
- Lohman, M. C. (2006). Factors influencing teachers' engagement in informal learning activities. *Journal of Workplace Learning*, 18 (3), 141-156.
- Lyles, M. A. (1988). Learning among joint venture sophisticated firms. *Management International Review*, 28 (special issue), 85-98.
- Lyles, M. A. (1994). The Impact of organizational learning on joint venture formations. *International Business Review*, 3 (4), 459-467.
- Lynn, G. S., Akgun, A. E., & Keskin, H. (2003). Accelerated learning in new product development team. *European Journal of Innovation Management*, 6 (4), 201-212.
- Macneil, C. (2001). The supervisor as a facilitator of informal learning in work teams. *Journal of Workplace Learning*, 13 (6), 246-253.
- Malcolm, J., Hodgkinson, P., & Colley, H. (2003). The interrelationships between informal and formal learning. *Journal of Workplace Learning*, 15 (7/8), 313-318.
- Mansfield, R. (1991). Deriving standards of competence. In E. Fennel (Ed.), *Development of assessable standards for national certification*. London: Department for Education and Employment.
- Marsden, D., & Little, D. (2000). Repertory Grid Technique: An interpretive research framework. *European Journal of Marketing*, 34 (7), 816-834.
- Marsick, V. J. (1987). New paradigms for learning in the workplace. In V. J. Marsick (Ed.), *Learning in the workplace* (pp. 7-10). London: Croom Helm.
- Marsick, V. J., & Watkins, K. E. (1990). *Informal and incidental learning in the workplace*. New York: Routledge.
- Mason, J. (2002). *Qualitative Researching*. London: Sage Publications.
- Matlay, H. (2000). Organisational learning in small learning organisations. *Education and Training*, 42 (4), 202-210.
- Matthews, P. (1999). Workplace learning: developing an holistic model. *The Learning Organization*, 6 (1), 18-29.
- Mayo, A., & Lank, E. (1994). *The Power of Learning - A guide to competitive advantage*. London: Chartered Institute of Personnel and Development.
- McGhee, G., Marland, G. R., & Atkinson, J. (2007). Grounded theory research: literature reviewing and reflexivity. *Journal of Advanced Nursing*, 60 (3), 334-342.

- Mirvis, P. (1999). Historical foundations of organization learning. *Journal of Organizational Change Management*, 9 (1), 13-31.
- Mitchell, T. R., Holtom, B. C., Lee, T. W., Sablinski, C. J., & Erez, M. (2001). Why People Stay: Using Job Embeddedness to Predict Voluntary Turnover. *The Academy of Management Journal*, 44 (6), 1102-1121.
- Mulder, M., Lans, T., J. V., Biemans, H., & Meijer, Y. (2007). Competence development of entrepreneurs in innovative horticulture. *Journal of Workplace Learning*, 19 (1), 32-44.
- Murphy, H. J., & Young, J. D. (1995). Management self-development and small business: exploring emergent issues. *Management Learning*, 26 (3), 319-30.
- Murray, P., & Carter, L. (2005). Improving marketing intelligence through learning systems and knowledge communities in not-for-profit workplaces. *Journal of Workplace Learning*, 17 (7), 421 - 435.
- Nevis, E. C., DiBella, A. J., & Gould, J. M. (1995). Understanding organizations as learning systems. *Sloan Management Review*, 36 (2), 73-85.
- Ortenblad, A. (2001). On differences between organizational learning and learning organization. *The Learning Organization*, 8 (3), 125-133.
- Paavola, S., & Hakkarainen, K. (2005). The Knowledge Creation Metaphor – An Emergent Epistemological Approach to Learning. *Science & Education*, 14 (6), 535–557.
- Paloniemi, S. (2006). Experience, competence and workplace learning. *Journal of Workplace Learning*, 18 (7/8), 439-450.
- Patton, M. (2002). *Qualitative research and evaluation methods. Third Edition*. Thousand Oaks, CA: Sage Publications.
- Pedler, M., Burgoyne, J., & Boydell, T. (1991). *The Learning Company: A strategy for sustainable development*. Maidenhead: McGraw-Hill.
- Preskill, H., & Torres, R. T. (1999). The role of evaluative enquiry in creating learning organizations. In M. Easterby-Smith, J. Burgoyne, & L. Araujo (Eds.), *Organizational Learning and the Learning Organization: Developments in Theory and Practice* (pp. 92-114). London: Sage.
- Probert, B. (1999). Gendered workers and gendered work. In D. Boud, & J. Garrick (Eds.), *Understanding Learning at Work* (pp. 98-116). London: Routledge.
- Rainbird, H., Munro, A., & Holly, L. (2004). The employment relationship and workplace learning. In H. Rainbird, A. Fuller, & A. Munro (Eds.), *Workplace Learning in Context* (pp. 38-53). London: Routledge.

- Reynolds, J., Caley, L., & Mason, R. (2002). *How do people learn?* London: Chartered Institute of Personnel and Development.
- Rodon, J., & Pastor, J. A. (2007). Applying Grounded Theory to Study the Implementation of an Inter-Organizational Information System. *Electronic Journal of Business Research Methods*, 5 (2), 71-82.
- Rolfe, G. (2006). Methodological Issues in Nursing Research. Validity, trustworthiness and rigour: quality and the idea of qualitative research. *Journal of Advanced Nursing*, 53 (3), 304-310.
- Rowley, J. (2004). Researching people and organizations. *Library Management*, 15 (4/5), 208-214.
- Rylatt, A. (1994). *Learning Unlimited: Practical Strategies and Techniques for Transforming Learning in the Workplace*. Sydney: Business and Professional Publishing.
- Schein, E. (1993). How can organizations learn faster? The challenge of entering the green room. *Sloan Management Review*, 34 (2), 85-92.
- Schostak, J., & Barbour, J. S. (2005). Interviewing and Focus Groups. In B. Somekh, & C. Lewin (Eds.), *Research Methods in Social Science* (pp. 41 – 48). London: Sage Publications.
- Schwartz, P. (1991). *The Art of the Long View*. New York: Doubleday.
- Senge, P. (1990). *The Fifth Discipline: The Art and Practice of Learning Organisations*. New York: Doubleday.
- Sfard, A. (1998). On Two Metaphors for Learning and the Dangers of Choosing Just One. *Educational Researcher*, 27 (2), 4-13.
- Škerlavaj, M., & Dimovski, V. (2007). Towards Network Perspective of Intra-Organizational Learning: Bridging the Gap between Acquisition and Participation Perspective. (K. Lynch, Ed.) *Interdisciplinary Journal of Information, Knowledge, and Management*, 2, 2007, 43-58.
- Smith, P. J. (2003). Workplace Learning and Flexible Delivery. *Review of Educational Research*, 73 (1), 53-88.
- Solomon, N. (1999). Culture and Difference in Workplace Learning. In D. Boud, & J. Garrick (Eds.), *Understanding Learning at Work* (pp. 119-131). London: Routledge.
- Solomon, N., Boud, D., & Rooney, D. (2006). The in-between: exposing everyday learning at work. *International Journal of Lifelong Education*, 25 (1), 3–13.

- Song, S., & Gale, A. (2008). Investigating project managers' work values by repertory grids interviews. *Journal of Management Development*, 27 (6), 541-553.
- Sousa, V. D., Driessnack, M., & Mendes, I. A. (2007). An overview of research designs relevant to nursing: part 2: qualitative research designs. *Rev Latino-am Enfermagem*, 15 (4), 684-688.
- Speziale, H. S., & Carpenter, D. R. (2007). *Qualitative Research in Nursing: Advancing the Humanistic Perspective*. Philadelphia: Lippincott Williams & Wilkins.
- Stern, A., & Sommerlad, E. (1999). *Workplace Learning, Culture and Performance*. London: Institute of personnel and Development.
- Stewart, V., Stewart, A., & Fonda, N. (1981). *Business Application of Repertory Grid*. Maidenhead: McGraw-Hill.
- Sutherland, J. (1998). *Report of the Workplace Learning Task Group: Report to the National Advisory Group on Continuing Education and Lifelong Learning*. UNISON, London.
- Svensson, L., Ellstrom, P. E., & Aber, C. (2004). Integrating formal and informal learning at work. *The Journal of Workplace Learning*, 16 (8), 479-491.
- Thomas, A. B. (2003). *Research Skills for Management Studies*. New York: Routledge.
- Tsang, E. (1997). Organizational Learning and the Learning Organization: A Dichotomy Between Descriptive and Prescription Research. *Human Relations*, 50 (1), 73-86.
- Usher, R. (1999). Experiential learning and the shaping of subjectivity in the workplace. *Studies in the Education of Adults*, 31 (2), 155-163.
- Van der Sluis, L. E. (2004). Designing the workplace for learning and innovation: organizational factors affecting learning and innovation. *Development and Learning Organizations*, 18 (5), 10-13.
- Wakins, K. E., & Marsiel, V. J. (1993). *Sculpting the learning organization*. San Francisco: Jossey-Bass.
- Walker, J. (2006, August 9). *The VSM Guide: An introduction to the Viable System Model as a diagnostic & design tool for co-operatives & federations*. Retrieved March 26, 2009, from The Viable System Model: http://www.esrad.org.uk/resources/vsmg_3
- Wang, C., & Ahmed, P. (2003). Organisational Learning: a critical review. *The Learning Organization*, 10 (1), 8-17.
- Watkins, K. E., & Marsick, V. J. (1992). Towards a theory of informal and incidental learning in organizations. *International Journal of Lifelong Education*, 11 (4), 287-300.

- Wenger, E. (1998). *Communities of Practice: Learning, meaning and identity*. Cambridge: Cambridge University Press.
- Wenger, E., McDermott, R., & Snyder, W. M. (2002). *Cultivating communities of practice: a guide to managing knowledge*. Boston: Harvard Business School Press.
- Wexley, K. N., & Baldwin, T. T. (1986). Management development. *Journal of Management*, 12 (2), 277-294.
- Woods, P. (1999). *Successful Writing for Qualitative Researchers*. London: Routledge.
- Zeldin, T. (1998). *Conversation*. London: Harvill.
- Zuboff, S. (1988). *In the Age of the Smart Machine: The Future of Work and Power*. New York: Basic Books.

Appendix A

A 1: Invitation to Participate in Research Study



Engineering Management Programme
Department of Mechanical Engineering
Faculty of Engineering & the Built Environment
University of Cape Town

RESEARCH STUDY INFORMATION

Dear Participant,

I am a postgraduate student from the University of Cape Town's Engineering Faculty, and I am conducting research for my Master's Dissertation study. The purpose of this study is to understand how engineers learn in the workplace. This study has received consent from KSR and you are invited to voluntarily participate.

Procedure: If you agree to participate in this study, your participation will take the form of an interview and work observations.

Final Products: This study is being conducted for the completion of a master's degree at the University of Cape Town.

Confidentiality and Protection of Identity: Confidential Information will not be used for any purpose other than this research study nor will it be disclosed to any third party. All interview and observation data gathered will be audio-recorded, written, analysed, and studied in a manner that protects the identity of participants. This means that your identity will be protected at all times. Similarly, the identity of any individuals mentioned in the interview will be omitted from the dissertation. All information provided will remain confidential, safeguarded and will be destroyed at the end of this study.

Withdrawal from Study: All participants have the right to participate or withdraw at any point without consequence to themselves.

Thank you for your time, your participation in this study is greatly appreciated. I will be glad to answer any questions about the procedures of this study.

A 2: Sample Interview Transcript

This interview took place on 20 May 2008 with James, a Technical Division Manager at KSR.

Notes on transcription convention and abbreviations:

- ❖ *[]* Explanatory text by interviewer.
- ❖ The text in **bold** is the interviewer.
- ❖ Regular text is the interviewee.

[Semi-structured Interview Component]

Could you tell me a bit about your background; your studies, previous work experience?

I ended off in '96, completed a PhD at that time. So went all the way through to PhD and then from there recruited into Star Products. So was part of the Star Products management program, it's about a two year program. They throw you into the workforce and then obviously have a bit more training in those first two years. It is not a full trainee program per se because they put you in the workplace in an actual position. The only advantage that you have over people that normally come into the organisation is that there are a few more focus programs around introducing you into the world of work and giving you more of the life skills and the management skills that you need to get into positions there are from a leadership perspective. So I think that is the enjoyment that I had going into the world of work, that you had this sort of structured program that allowed you to bridge the gap between purely theoretical type of environment into. So that was the experience. So you want me to go a bit further into where we are now?

Please do.

So that was about a two year stint and then quite nicely went into their packaging development department. Their packaging development department is probably more active than most others because I was in the personal product side. So they would do anything from shampoos to toothpaste to skin lotions and so on and generally in that FMCG *[Fast Moving Consumable Goods]* environment. Specifically on personal products - a lot of the innovations is on the packaging side - so formulation generally stays the same - the packaging changes - people buy those sorts of things on how good the packaging looks. Don't say that to consumers! But in essence you get attracted to that - so the glossy, the frilly type stuff is what people generally buy - if it looks good then I'll buy it. So I was exposed to that and it allowed me to get a little bit of exposure into marketing as well which helped me learn the big picture. With it being packaging and being personal products as packaging specifically is focused on marketing the product, so quite a lot of interaction with the marketing side of the business. We had all - I still say we – Star Products had the head

office in Jo'burg [*Johannesburg*]. It is quite nice when you have a head office close to a manufacturing environment.

Good interaction between the two, you share a lot and you sit in to a lot of project meetings - that is slightly different to what we have here because it is that much further from central office and the marketing department so you don't have that much interaction. That was also quite nice because it gave you a lot of the lingo in the business and what the business is thinking. What tends to happen in a manufacturing environment is you become very internally focused around engineering and production and a lot of those things.

So you consciously have to make a concerted effort into getting into marketing if you are in a region where you don't have that much interaction with the central office that you would have classically with a manufacturing site close to an office.

So that exposed me to quite a lot of the business thinking and so on. That was about two to two and a half years. I think my, my love if I can call it that was still in the lab and sort of like hard numbers if you can call it that. So that was why I went into the production environment again but I did that going into a QC first - so it was quality control. Spent about a year and a half in the quality control - what was my title then - In-bound Quality Assurance Manager. They come up with these wonderful names! It was all incoming raw materials and I had a team of about 4 or 5 people, so that was the first time I got exposed to line management and it was nice enough. It was a small enough team that I could control and manage and allow me to develop my leadership skills. So that was that and then from there the need was to get into pure production if you can call it that. Hard numbers in terms of efficiencies, waste reduction and those sort of things and then I got into shift manager role. It was a lateral move but it was a move I wanted to do because it gave me that much more exposure. You have a little financial benefit in shift work and yes unfortunately shift work has got that problem being shifts and work, but it has got the monetary value associated with it. So that's why people generally stay in shift work because it is a lot more lucrative so you may be in a lower level in the organisation. But if you look at KSR for example - if we work a 4 by 8 shift that is 50% of your salary package that goes towards your shift allowance - so there is a huge incentive for people to work shifts and that's why they keep people on shifts because the money is good.

That was about two years in a pure production environment - getting to grips with understanding the intricacies with both the people side of production and of the hard core efficiencies, engineering type exposure - how the kit works, the plant kit works and those sort of things and it was quite a simple enough operation in Durban. We had the making session, which was a very batch driven type situation where you'd mix a eight time batch of shampoos and then you'd send it down to a packaging line that used to package it into shampoo bottles and so on. It was simple enough, there were about seven or eight different lines across all of the different range of personal products from toothpaste to shampoos and then you had to manage a team of about seven team leaders that had between 3 and 7

people reporting to them. So it was quite a nice shift about between 40 and 50 people would be your responsibility as a shift manager and you would co-ordinate all of that from an HR, cost efficiency role - all of those sort of things. And then I was fortunate enough that our production manager, the person I reported to moved. So I got promoted in the organisation so I went into a production management role at the same plant. So it was quite a nice little step ladder into production manager where I eventually left the company.

So it was about a two year production manager role that was as hectic as it could be because of the nature of the beast. The thing that you have there is the higher level people in the organisation, people that don't have that connection with the factory - so they don't understand the context to the factory and you are required to put out results based on the targets that they set you, where you understand the complexities and the context associated with the factory.

Then still through to production moving through 2001 to the production year - KSR as a unit manager. Running a particular production line but slightly different in terms of how the two businesses ran. There it was shift manager with 17 leaders that would run a particular shift, here it is a unit manager that only runs one line, he has a rotational role. In terms of a lateral move, it was definitely more career prospects for me at that point in time I could see at KSR. What was that about two to two and a half years also in the production environment and then now into Technical Division Manager which is an executive position so it was a promotion and also gave me the firm grounding of production, allowing me then to understand what my customers want and then supporting them as a Manager.

Do you enjoy it here at KSR?

I enjoy KSR! I think it is a very nice, you must of heard the saying, 'If it moves - we measure it', 'If it doesn't move we kick it', 'If it moves then we measure it again'. And that is the nature of KSR. We are very numbers orientated. We drive and that's the key thing in terms of the measurement. You need to be able to measure something in order to find out if it is good or bad. The key thing is to introduce a measuring system, make sure that it is credible and make sure that it is a reflection of your performance and we use that then to drive performance. People generally react in KSR to numbers. You can talk a whole lot of warm and fuzzy stuff, but at the end of the day the, numbers are how all finance and how all world markets run. It is about the numbers and the numbers and the message that the numbers send. So that is what we've taken to heart within KSR. That's why I enjoy it, it is vibrant, it is challenging, hectic, lots of late nights and all of that sort of thing. But I think it is what you make of it.

They [KSR] talk about a work life balance which they introduced about two years ago in KSR and that had a whole bunch of things associated with KSR - you could either work flexi-time, you could also put forward motivation that your job is a half day job - you get paid half day. But then you work half day as well. So there a couple of secretaries and those people

that have got that opportunity to base on the fact that that position doesn't really need a full day job, they work half day and then they go and spend family time. There are a couple of obvious benefits to that because it shows that proactive approach, that KSR understand the context of the modern day person and traffic problems and so on. I think that that work-life balance, even though it is something consciously stated, the difficulty is that you probably never get a good work life balance because the nature of the business. It drives you to be ahead of the game, the way that you become ahead of the game, is by putting in an extra hour or two here and there and taking a bit of work at home. So it's what we live by and we say thank you KSR for introducing it, but we still have to push as hard as we can.

What does your current job entail? What do you do on a daily basis?

Right! I have the enjoyment as a Manager that I sit and wait for things to come to me. There are two things - we've got what we call the Value Chain people and those would be the ones [people] who put the product in the warehouses. We've got a production section - you would have been exposed to discussions with Jim or some of their guys, so production is the making of the product, packaging and then warehouse - that in essence is the core value chain stream. You've then got support departments to that - you have engineering, quality, you'd have systems, risk, human resources, smaller departments that fit in to make sure that that all gels together. And the nature of that interaction that you have with the value chain people is what I call the push and pull philosophy. The push is you've got an agenda and it quite nicely fits into - if I talk in my context, I've got a push requirement, that push requirement is that I've got to install an ethic of quality in everybody that works within this plant - we've got ISO accreditations, 14000 accreditations, HAZOP, E mark - all those sort of things that is my requirement to push and to make sure that there is compliance. So it is that speed cop role if you can call it that. So I need to push. The pull philosophy is, we've got targets in the business and those targets are set by central office and they are based on past performance and what we need to chase as a quality ethic within the organisation. The pull is then if we are not achieving quality targets, the pull from the departments, those value chain departments, for them to pull me into problem solving and use my quality specialists. I've got a bunch of quality specialists who report back to me, to support problem solving because if you get a dip in performance, you then need to put together a project team or problem solving team that allows those quality specialist skills to assist in problem solving so you can get to your target. That in essence on high level is what my job is.

As a manager, I need to make sure that that flow happens and make sure that the people that report to me support that value chain. If you look at what my structure then entails, is I've got a trade quality specialist that handles all the complaints and goes out to get that - goes out to get the complaints, come back to do the investigation. Then I've got quality specialists - they may even be micro or a QESH specialist [*Quality Environment Safety and Health*]. Then I've got lab managers, those lab managers report to me but they've also got a dotted line for example a packaging manager - because a packaging manager has got quality

targets. There are quality analyses that they need to generate and the packaging lab manager then supports all the activities and makes sure that all the equipment is reliable, is up for doing analyses, and make sure that the operators are trained on that quality analyses. So that is broadly speaking what I need to do in terms of how I support the group.

[Structured Interview Component: Repertory Grid Technique]

[Element Elicitation]

[Element 1]

Can you name someone you would approach if you had a problem: Either technical or non-technical?

Somebody I would approach if I had a technical problem? We've got - I think I use - and that is just going back to my role again, I've got a bunch of specialists that, that are experts in their own right.

Is there somebody that you are more likely to approach, someone you prefer approaching?

Anybody... I'd say, I'd first go and approach my team, my quality specialist team that report through to me because they are experts in their own right, so they have got their subject matter knowledge - so if there is a technical problem that I face in the plant, the first thing is to go and get them involved and have the discussion with them. So that is the first level of discussion.

How large is the team?

I've got a team of six people reporting through to me.

Can you name one person you would most likely approach from the team?

Name a person? I'd give Gary Smith, for example. He is part of what I call my Level C team - so he reports directly through to me. Is there anything you want a bit of clarity in terms of structure 'cause - It is just that immediate line that reports through to me - would be my level C. I sit at level D team which is the Exec. Team and that would be one level below us - so the other departments have got level C.

[Interviewer wrote initials on card: G.S – This process is repeated for subsequent elicited elements]

[Element 2]

Could you name someone who is a role model or mentor for you?

Yes, Mark Jackson. He is he is sort of the same role as I do at regional level, he does for corporate.

[Element 3]

OK. Could you name someone with whom you would approach to discuss something interesting related to your profession?

Pause. You want a name again? I'd go with - there was somebody that left the organisation about 2 or 3 months ago - his name is Max Abraham and he was the development consultant. So it was like a WCM [*World Class Manufacturing*] facilitator, he was a close enough friend because I knew him from Star Products.

[Element 4]

And someone with whom you enjoy sharing work experiences or work related knowledge with?

I like sharing the little wisdom have with my reportees.

Is there someone that you enjoy speaking to in particular?

Well, actually, I suppose one of the other managers that are around - a guy called Wesley Adriaans, he has the same role as me, but at the Durban plant and he would probably be my immediate choice to share things with.

[Element 5]

Could you name someone with whom you find it difficult to exchange knowledge or ideas?

I'd say at this point in time our production leader, Jody Allardice.

[Element 6]

Lastly, could you name someone with whom you enjoy discussing your career development or career aspirations with?

I'd probably say the previous packaging manager who was Lawrence Ashley, so when I was a unit manager at that stage I reported to him, so he was one of my previous line managers.

[Construct Elicitation]

[Construct 1]

Now we are going to do a series of comparisons.

[The interviewer randomly selected three element cards and placed them in a horizontal line on the table. The interviewee was then asked to organise the cards in to two distinct groups.]

Please could you group the cards such that two are different from the third in terms of what you learn or how you learn by interacting with the person?

Two similar and one different? Pause. I'd go with these two guys and them specifically because they are very systematic and structural thinkers, and the other one is not a systematic and structural thinking. So those two work systematically through a problem and they make sure that when they go through problem solving or an explanation with you, they go through the reasoning and the rationale behind it.

This one, this guy specifically I'd say is a little bit less structured but there is definitely a lot of thinking - it sparks enough interest and debate and discussion. So I'd say these two are more alike with regards to how they go through thinking and how they go through their thinking process and what they deliver. This one a little bit more free style but probably still delivering good value at the end, but a little bit less structured.

So they show their reasoning when working through a problem with you. As opposed to M.A?

I'd say, probably jump to the answer and then not go into too much detail about how he go to that and then having to question and ask that I eventually get to his thinking.

So, what would you label this?

Structured conversation and shows reasoning.

If this is structured conversation, what is this?

Unstructured conversation, just jumps to answer.

[The interviewer wrote this construct on a card. This process is repeated for subsequent elicited constructs.]

Which do you prefer?

Well, I'm a QA manager, going to what's the guy's name – Mark - I'm a blue in terms of my colours, so more structure and those sort of things is where I traditionally fit. I reason in fact based decisions and supporting that with enough logical argument. So there, there isn't structure.

When you interact with M.A, is it one-on-one or would you be in a group?

It is a bit of both, I think specifically around, when he was at this plant, it was more one on one interactions - we did have quite a few team type sessions as well but I think leaning towards more individual, one on ones.

What kind of interactions were they?

I'd say meetings and also casual chats. That would also be my springboard where I talk about a couple of things so I'd say both of those.

What kind of things did you discuss? Was it technical issues?

Yes. If you look at what his role was, a World Class Manufacturing Facilitator - and a lot of those things he had a wealth of knowledge that he came from Star Products with because he'd been through the pain and effort of the implementation of some of those and they are painstaking to say the least. And I think a lot of those interactions were around his experience. Obviously the battle we face here is to try and make those things entrenched in the way we work. We've got a lot of initiatives that come aboard every year and we never go and bend down and confirm and entrench a lot of the stuff that was spoken about last year. And it needs to be done here because there are new initiatives and I think what those interactions that the two of us had was around his experiences from Star Products, and how it could be practically applied specifically to the quality environment. Stuff that I need to push or the agenda I need to push and then also around some of the other WCM type initiatives across site.

Where would these meetings take place?

Well boardroom, both in our offices and in board room - if I can think back it was a sort of a mix between - most of them were leaning towards individual so that would be more office based and then on the odd occasion in a meeting room but then meeting rooms would be team involvement.

Were company scheduled?

Yes they were formal. You've got specific goals that you need to drive within a year - you then make sure you achieve them and the only way you can manage those things is by managing your calendar - so booking for meetings and then going through a set agenda or requirement that you need to achieve by end of the month or end of the week or review past months performance. You have to consciously book those things in otherwise you are in for a hiding (laugh).

And with these two, were your interactions with them formal - company scheduled meetings or on a casual basis- where you'd go and discuss something?

On that side, G.S - in his context there was a lot more informal that came through in this past year because of the fact that he was standing in for somebody. So I have to coach him

as a new line manager and I had to take that more informal role going into his office and have a chat to him. But we do have formal, one-on-ones in the company when we review some of those goals and then within those time periods that we had one-on-ones we'd have informal sessions. This one a little more difficult because he is in Jo'burg [*Johannesburg*] so the interactions we have are telephonically or by email or quarterly quality meetings or the ad hoc that he plans - so those would be formalised.

And M.J, what type of things do you discuss with him?

He is the guru and he is the person then that drives the QA community forward. Technical springboard because as a corporate QA, the Corporate QA has got goals aligned to business goals and he is then the custodian of pushing that quality ethic agenda. He is like a subject matter expert for quality he provides that leadership for me whereas the GM has got that accountability to deliver business results. Obviously the two can't go in opposite directions. So that is why I need to take what they both have and then make it work for the region.

OK and when you communicate with him, is it just the two of you?

We've got formal conference calls monthly. I think informal - cause of the difficulty of travelling over there and all of those sort of things and the difficulties we have with budgets and all of that good stuff, the informality comes through when we have what we call our QA manager Forum. That happens quarterly, so it would be during tea breaks and those sorts of sessions. We do plan, look it hasn't been as well delivered in the last financial year but in two weeks time he's coming down so we'll have more formalised, coming down to the region as opposed to us going up over there. But I think in the past it has been informal more around tea breaks and sort of after the session's time that we'd have discussion. He is available to take our calls at any point of time so the informal also goes through telephonic discussions.

How frequently do you find you communicate with him?

With him, well on email it is probably every second or third day. Email is the monster that we know it to be. You have to stay abreast with emails - it is the nightmare of the modern world. It made communication better but it is just cluttered your life so much because if you didn't read that email or that memo then you know hey! So that is the difficulty and that is why I'd probably say about every two to three days I'd get one or two - let's say I'd average about a mail a day - so it is quite frequent and a lot of that, cause the general communication, the general business communication comes from our GM but then specifically on corporate quality goals you need the actions and deliverables - that is probably an email a day.

And besides technical support - in terms of the conversation?

I don't have a formalised development plan discussions with him or the like. That is done through my immediate line manager but what I have done in the past is - the previous corporate QA manager, Joe, he is the manufacturing Services Manager. Now he reports to that person, so I know him because he moved on about two years ago. He was in a Corporate QA manager role and I've got a reasonably good relationship with Joe but obviously less interaction with him because he is high up in the food chain so we tend to communicate less. What was the point I was trying to make?

I was asking if you only spoke about technical things -

Oh yes. Joe is the one I had career discussion chats with in the past. I'd say it was in my individual goals. I would tell him my individual goals so it was formalised and need to in terms of my career planning and those things have those formal interactions, I then planned them and had those. If it is not in my goals I don't do it. That's why we are so goal based and we make sure that your goals drive what you need to do. If there are any ad hoc things that come in, then you need to build it in to your goals cause at the end of the day it's that performance driven culture. And you need to make sure that it is in your goals, you need to make sure that it is driven and you deliver to what the requirements of those goals are. So on the IDP [*Individual Development Plan*] side and all the other good stuff that we track, we track our interactions and our development plan which is formalised - these are the things that you need to go and do and this is what you need to achieve. It is also formalised or those two specific formalised meetings that we jotted down a couple of things that I needed to do and what he advised on and all of those sort of things. So I think there it was a bit more formal and a bit informal because the way the meeting was held because we know each other relatively well so it was a formal session but quite a informal chat. Put that into two sentences!

[Construct 2]

Could you do the same for 4, 5 and 6. Please group the cards such that two are different from the third in terms of what you learn or how you learn by interacting with the person?

Pause. This is a bit more difficult with these ones

How are 4 & 6 different from 5?

This is more a gut feel or not a gut feel but around perception that I have. Here there is a bit more new age, formal challenging of system type thinking and that's where it's challenged to do a lot more of that.

This is more traditional way of thinking and not challenging too much the status quo and the system and so on. Here it is more around, don't take things for what they have been formalised in the years gone by, challenge a lot more because that is where the value is that

you are going to get out of it by understanding what it is and not just challenging for the sake of challenging but that you understand the rationale behind it and make sure that you challenge them for the good reasons and for the furthering of a system or something like that as opposed to being negative. Here there is a lot more structure, we shouldn't challenge too much because it has been tried and tested methods and don't do too much - if that makes any sense to you.

Which do you prefer?

There is a little bit of this coming through me obviously because of the nature of the system type thinking because you would want a lot of that to drive - I think over my years the key thing there is to make sure that we challenge systems for the value of the team - for their value and for all of those sort of things, so I'd say that in this point in time I prefer a lot more of this and do a lot more of it and try to avoid a lot more of that.

So if they challenge your thinking when you discuss things with them or during problem solving - what would G.S be doing?

He would be saying that those things are there for a reason, as I mentioned earlier on, they are tried and tested methods. It's got a lot to do with energy, my gut feel is that there is more energy associated with challenging things and you have to wake up and say I'm going to challenge this particular system or something like that. So I think that is more where there is a lot less energy in here and if there is less energy you are less likely to challenge systems and that sort of thing. It purely goes around the energy levels that you as an individual have in order to make things work for you.

So I could say that they challenge your thinking as opposed to G.S who?

So here – I question and challenge my thinking and there I don't challenge, just accept. You accept what it is and then you don't question too much. And the reason why you don't challenge is because you are probably busy with either your personal circumstances, or you don't have enough energy to challenge and you just prefer not rocking the apple cart - that's more where I see a separation here. The nice thing and I can't remember if it was L.A that said it to me or where I came across it but the reality - and we are always categorising things to make it easier - but in life there are two people that create energy - or there are two people in life, ones that create energy and draw people towards them or the other category that is exactly the opposite. They absorb energy all the time and hence are a draining factor and so become very negative as opposed to the positive side of the people and this is where people generally get drawn more towards energy filled people and it goes around the type of person that you are, the character that you have and I think that is generally where one of the things that I am trying to drive is to get that energy into what you do what you say 'cause that's what drives you as a person.

So you could say, Challenge thinking vs. don't challenge thinking

What kind of interactions do you have with these two? What kind of things do you discuss?

I can't think of anything specific but give me a minute and I'll come back to you...I'll give you more relevant examples here like I say that was a couple of years ago - but I think here specifically around the quality systems that we have in our organisation and a lot of that has been methods that has been developed, systems that have been developed and what you have the fear - us as a big organisation and you know big organisations have a lot of red tape associated with them. What I enjoy with the interactions with him is he is continually challenging some of those decisions at its basic level just saying that these things are wrong and we need to try and improve it and also suggesting improvements to those systems because you can easily knock down any system but it is the value that you deliver is by suggesting improvements - I think that is what we've done over here and if you sit there with a hidden agenda that says that these are the things that we need to work towards and what are particularly problematic for us, for implementing at regions.

So how frequently do you get to interact with W.A?

I'd say about once a week phone call and then we see each other quarterly and then also we have the monthly teleconferences with the grouped - the other managers. There is quite a lot -

And when you speak to him weekly, what type of things do you discuss?

I think it is more sharing of knowledge - there is the odd comment around how things are happening but I think it is more around the sharing that we have - best practices on my side or problems on my side that I bounce off him to find out what they are doing - more knowledge sharing type.

How else do you share knowledge?

Yes. OK - we've got the phone but we've also got documenting through email. We've also got formalised systems of knowledge sharing in KSR and that is what we call, 'Shared Learnings' where you formally write up a 5 - 10 slides and you upload it and it is available for the community to review and then give formalised ratings.

Do you and W.A use that avenue to communicate?

I think - not as frequently as the more telephonic or email. Email is probably the more active one.

Is it just the two of you or are there others involved?

I'd say we've got a good enough relationship because unfortunately he was a Star Products person as well - so that's probably where we interacted well because we were at the same plant. He was in a different department when I was in Durban, so I think that is where we

came from and that is where our friendship has grown from. We generally interact more because of the friendship that we had in the past and yes there is – where we are as a community do share information with the other QA managers - what would you call that - social system

And how frequently would you say communicate with the other managers?

OK we'd on average have about - obviously our corporate QA manger also copies those emails so we generally communicate that and I'd say probably one to two emails either around information or specific enquiries.

A week?

A week because it is that information that we need.

Is that a formal requirement?

No it is more around either goal driven - like I said to you if I can just take it to the context of our current financial year goals, we've got a key hygiene goal to entrench in the organisation - we are a food producing company and we are not comfortable with the standards that we have within our plant. So QA managers need to take the lead to drive that rigour of the process. Now we are not passive in all of those requirements - the ethic in KSR has not been hair nets and gloves and all of those sorts of things because we've identified our critical control points and then we monitor those closely. The problem that you have outside of those areas there is not that much rigour or thinking in the operators mind around the quality ethic you want to entrench. One of the key things is we need to move towards a food plant as we call it. So a lot of sharing is happening in this financial year between that fraternity. Because we need to take the lead to drive that, change that cultural mindset between what we've had in the past to what the business requires of us to push.

So this happens mainly through email?

Yes. So it would be predominantly around goal driven and target driven things - you have a problem with the target and you've got, how are you guys progressing on your side - You have the centre. Mark is obviously the main custodian but a lot of the documents come from him but then regions are also - what we do consciously and this has worked well over the past couple of years is we create little hubs of knowledge where for example it could be analytical equipment where we then trial and test specific pieces of equipment and then use the information that we've gained to then propose to the business that this is the piece of equipment that we what to move. So it is little mini centres of excellence on specific equipment or specific areas of the business that we need to fix. So you've also got that agenda or little centre of excellence that you need to create within the different plants.

And what about J.A?

Well, I think the difficulty - just to bring in a little bit of context into this - KSR has never clearly defined what the role between the Quality manager and a production leader is. A production leader in its simplest version is guru of production, so he has that both from a quality and a production type perspective - he is like the expert that you refer to knowledge on the production process. The quality manager on the other hand is an assistance type person that drives ISO accreditation and a lot of those sort of things and where you have the grey areas around how much accountability the QA manager then has to instil the rigour of the quality process on the beer making side and that in essence is part and parcel of what a production leader should - so the push is to have production leaders set up specific specifications and the quality manager then ensures compliance towards those - where Jody fits into the picture and specifically around his character - he's been long in the business - I think he is pushing around mid 40's - just because of the nature of the context where he comes from and all of those things that make up the individual that he is I think that it could probably be a character thing or purely just because of that understanding that - remain status quo and don't change too much makes that separation.

What are your conversations with J.A like?

Yes I think that specifically because if you look at - it is difficult to give concrete examples, I could probably search my memory banks to find them but generally speaking it would be that immediate interaction that you have with him around. "Why don't we try this new thing? "No this, no that"

And when you're in groups?

Very similar.

If people make suggestions?

Me and my level three team know him as that and we obviously have a plan of action of how we address all those sort of actions and there it is just making sure that you have your ducks in a row and these are the things. Because generally what those subject matter experts try to do is when you challenge them with those sorts of things they throw book knowledge at you and if you have enough of a minimum understanding of where this is coming from. Yes, he definitely is an expert in what he does but there is a lot of value that you can deliver by understanding the basics and then challenging them on some of those and having a good appreciation of the new technology that you are wanting to either propose, introduce or otherwise.

And how do you and your team overcome this -

Preparation! We've got a formal meeting every Monday that we sit and review - technical meeting and there it is how myself and my team review quality KPIs [*key performance indicators*] for the last week and then propose what we are going to do in the coming week

and there's key in preparation - that is the focus that my team has and I am entrenching a lot of that - it is preparation for meetings. If you think of business in general that is probably where most of the value that you get out of it - unfortunately as a manager all of your time is spent there - so you make sure you prepare up front, make sure that you have enough information so that you have that credibility in those meetings going forward. Meetings and agendas that you push are one and lasting in those interactions not only with the individual that you challenge but also around the people that are in that meeting and it is around - business is driven by perceptions and if somebody - if there is a negative perception around you then generally you don't get as much - what would I say - support? And that is why it is important to gain credibility in those meetings. And that is about preparation, preparation, and preparation - making sure that you go in there with those things. There is a little curved ball that comes into it and that is caucusing before the meeting. So if you've got a little agenda to push you have enough support from some of your problem people that you have. So Jody for example if he'd be part of a member of my team that we then need to challenge central office with, then it is important to go in and prep him and get his buy in and then we go in and do that. It is so important the preparation side of it.

When people around you move to different positions or even the organisation. How do you deal with the 'memory loss'?

My requirement is to make sure that systems drive - unfortunately systems are dependent on people so one of the key things is to make sure that those systems are sustainable and yes there is a knowledge base that we lose. How I respond to that and I can put it at two levels - the first level is around my peer level, my exec team level, when we lose people there - obviously the responsibility is with me as one of the longest serving members to make sure that that corporate memory and I contribute as much as I can in terms of picking up dropped catches if you can call it that from within those teams. And also suggesting and recommending based on the experience that I have. It also goes around the confidence that you've gained in your years of experience because the nature of production problems is that they are not new. They just come in different guises and every three or four years you are face with the same problem and it is probably because of new people that have been introduced and the systems haven't been entrenched so that is why corporate memory is a good thing because you can solve the problem - you probably know the solution but you need to get the guys to figure it out for themselves or then support then if you see - and that is what I take to the other leg - the one is peer and the other is my team. I had a pretty stable team if I look at 2002 and 2003. Then there was probably over the past year and a half there has been an 80% turnaround time in my team - various reasons from disciplinaries to ill health through to people leaving the business - all of the above.

Do you find learning or training programmes useful?

I think we challenge them to be relevant. The key thing is what I traditionally call, and we used to have quite a lot of them in KSR, return and investment. Make sure that the value is

going out of those training interventions. The way specifically around this 80% turnaround time is consciously having those people have a structured individual development plan that they need to work toward - so it is about giving them - identifying key areas that they need to focus, these are the key areas that you need to focus also exposing them to subject matter experts within the organisation. For example my micro-specialist was recently appointed. I've got a central office counterpart and obviously Gary who was in that position previously has got a certain amount of subject matter expertise and they then say - these are the things you need to - once we have that subject matter input and when I know what training programmes are available I then put together that structured programme. Also along with that is a fair amount of coaching that I do with that individual - it is a two pronged approach - formalised and on the job coaching.

How do you learn to be a coach?

Experience. Courses do help - like I expect my reportees to get that return on investment, my key thing is going out there and making sure that the value that I've gained out of those courses - and it is about that reflection poster - try and use as much of the skills that you've gained during the course material, try and implement them as quickly as possible make a good concerted effort to use that because you will lose that skill.

When do you do your reflections?

I used to have a reflection book - I suppose that is a saying a lot of people will be saying these days.

How long did you have this reflection book?

I had, I was part of the Action Learning - about two years ago and I had my reflection book probably for about a year. Which was long in my book but then it was just jotting down notes and then unfortunately the reflection book became an action list. And then I lost the value of that because I'd had to refer and tick off all the action so I lost the value of what the reflection book was there for. I consciously make time and I think it is either waking up at night for that half an hour that I couldn't sleep or what I have found worked well in mornings is making sure that before I open up my email in the morning - cause that is when you are bombarded with at least 15 emails and that's after you finished off at 5.30 - 6 o'clock in the evening and you see emails coming through the next morning. The minute you read that first email you are already into your mode of picking up the rest of the day - so that ten, five minutes reflection of what was yesterday and what I need to do today - so yes jotting down, unfortunately from a reflection it becomes an action list that comes though it but I think consciously making the decision to reflect on what yesterday's activities were and then on a Monday obviously with the previous week's - either learnings or actions. The unfortunate thing is you tend to skew more on the action side as opposed to the learning

side but it is that conscious effort that you need to take on. What did I learn last week as opposed to what do I need to do?

Is there anybody that you share your reflections with?

No - the nature of my personality is that I am very introverted so I don't generally tend to share a lot of my reflections with people. I went on a time to think course - some of that stuff - I went on and there the important thing is to talk about things because what seems to happen and learning from that course is talking about something actually slows down your mind because your mind is racing through a number of thoughts - but talking through something actually slows down your mind and allows you to get to a better solution, I think that is the thing it is about slowing down your mind - your mouth can't talk as fast - I have speech impediment I talk too fast unfortunately, I try, my mind, agh my mouth tries to catch up with my mind and that is why I am trying to talk more from a reflection point of view so that it allows me to think a lot better. Because the solutions are all there.

Who would you want to speak to?

I think reflections are more around work because I'm supposed to say that at KSR but it is around more my direct reportees again because goals and those sorts of things that we need to try and achieve having that debate and discussion

That is for their growth?

It's for their growth but I also think it is around specific agendas that we need to push.

What about your growth, who would you speak to?

I have got a wife, so I'm supposed to say I reflect with my wife but - still being a very introverted person - a little bit I think a by and large a lot more on my wife's side but I think not as much as you should and I think what I consciously do is I don't talk too much about work to her because I made that decision - if you talk less about it then you think less about it and hence you'll have a better work life balance.

[Construct 3]

OK, next three. Please group the cards such that two are different from the third in terms of what you learn or how you learn by interacting with the person?

Two are similar and one is different... It becomes more and more difficult. These are a bit more similar and I think those are along the similar lines in as much there is a lot of structure and detail of what he generally in our interactions and dealings with each other, he is also structured a little on the negative, or defensive side where he is more free spirited thinking and less structured in terms of my dealings and interactions. These two and then that one.

Besides them being structured?

Pause.

Ok, what do you mean by structure?

By structure I mean, if we go through discussions and arguments and so on then it is about going through as much detail as you can to try and understand either the reasoning behind the decision or a - ya reasoning behind the decision this is why we are making this call or there is a lot of detail that they go through so they try and make sure that you understand the detail around it as to why they made a decision and I think from my learning perspective that is where that interacting comes in.

What do you do if you don't agree with the detail?

If I don't agree, I do challenge on the odd occasion.

How are their responses different to M.A for example?

I think the reason why I challenge people in general is obviously because I have a better understanding and knowledge, I work from a firm base of knowledge and then challenges as opposed to somebody who just for the sake of challenging, so it is more like if I have a better understanding and knowledge of a particular subject then I'll challenge them on that, on those aspects and that's where the challenging comes from. On Max's side, a little more emotion coming through than fact -

And how does he respond to –

Responding to things, I think you can see that he does think about the challenge that you give to him. But the response that he would give...he is actively not encountering challenging. He tends to be a little bit more reactive so if you challenge him on something then it comes back to you immediately without a lot of thought so it is more spontaneous than this. This one would be less spontaneous but then more thinking orientated - they don't respond immediately to it they first assess what you saying and then start giving a little more detail and reasoning and facts and trying to put in as much detail as they can.

So he is reactive and would you say defensive?

There is more defence - although I think the defensiveness comes through in on this side a bit more because of the nature of who he is. I think if I was to put in terms of defensiveness - he'd be a lot more defensive. That is more reactive. There is a bit of defence that comes through because that is why you are going to naturally respond spontaneously to it but I think in terms of his body language and all those sort of things here you see more negativity and defensiveness coming through from him, Gary less likely so.

If I were to categorise these two groups as two opposites - what would they be

More knowledge and detail thinking type responses here and then this would be less knowledge and detail and more emotional.

So one and five is - provide more knowledge and detail in conversations?

Because of the detail that they want to go into. They want to give as much detail as they can to either justify their point of get you to see their way of thinking based on the detail that they give.

Then he is?

He is less so and more reactionary responses.

[Construct 4]

OK, same story here. Two are different from the third in terms of what you learn or how you learn by interacting with the person?

From these individuals?

Through your interactions with them –

Ya I think I'll go with that and the reason between or the difference between the two being - I think there is a fair amount of strategy that comes through on his side so learning to understand systemic and strategic things and solving problems and day to day situations from that perspective whereas this is a little bit more operational focused, so it would be about trying to solve the problem for the short term as opposed to being more systemic and strategic. And by saying that, it would be trying to solve the problem as quickly as you can because that is the nature of an operational type situation where you solve the problems as quickly as you can. Whereas, this one *[strategic]* you know you are going to have a lot of problems cropping up all the time –'try and have a more systemic approach to solving it'

So this is short term solutions and that would be?

More systemic and strategic, so longer term and take the time, go through the learning, look at a more sustainable solution.

Which do you prefer?

The nature of KSR is that they drive you to have a systemic and strategic role. It is tough though, because of the nature of the work we do. Things need to be fixed ASAP, lines are standing still, so you have to balance between the two. I enjoy this a little bit more at this point in time because you see it takes a while to get through but eventually once you get to that it is a lot more rewarding than this.

And how frequently do you find yourself in these situations?

I'd say that it again relates to the position and also the context of your department of the past year. So I had to do a lot more of that – not just bums in seats - people actually doing the hard work. I had to go in there and do a lot of that sort of work over there. Now that my team is starting to come on board and they understand what their role is, I then moved to that. It is also round the current context of the business.

How do you share knowledge and information within your department?

Yeah. It is a quality department - I rely on manuals.

If a new person comes in, how do you prepare them for the job?

We have in terms of learning what we call MDTs or departmental meetings, MDT is multi disciplinary team meetings and what they do - I can use an example of one of my micro specialists for example permutation - last part of that is around his management and so on. So the micro specialist has a lot of input into that and they form part of that multi disciplinary team that discusses on a weekly basis what the issues are - you get a bit of shared learning from the customers and the environment that you work within and then also from my department point of view the departmental meeting, I have weekly departmental meeting where we review goals and actions and that then drives the goals that we set for the year and also an opportunity for knowledge sharing. I encourage a lot of - especially the micro specialist that is new now - Gary that was in that position before, he is the lab manager, so I put firstly as a key developmental opportunity that person writes in his goals that he will share his knowledge with that person, that person then also from a competency acquisition process, he needs to be signed off, it is a mutual thing.

How do they share?

That would happen via MDTs or informal activities going to ask - so challenging the person to make sure that if he is not familiar with a particular aspect, he's got subject matter person that he can refer to. The other formalised way is a weekly meeting that happens where they share knowledge - we've got a goal that we need to drive, these are the things that happened over the past month that we've planned, this is the one we need to plan, what support do we need from the rest of the team and how can we then deliver that for the next month. What it does then, it's that little sharing opportunity with people that have been in the department for a while and can then share their knowledge - that's why we force a lot of that rigour in that level C meeting - everyone needs to be there so it allows us to share there.

And the MDT meetings, how frequently do those happen?

Weekly - weekly MDT meetings they interact with customers and then they come back and part of the quality team they then have the departmental meeting.

What other weekly meetings do you have?

I form part of broadly speaking two meetings - I'm part of the leadership team, the exec team, and then I am part of a high level C team. If you look at going further down, for example, the lab manager, he is part of my level C team and he is part of his level B team. What you also have is interactions of that lab manager with the customers, so it could either be MDT or production meetings - rigorous production meetings that we go and review the past 24 hours. At my level I don't go into those meetings - my lab managers support those but I think meetings for me would be that level D team I interact with, twice a week to review production performance at that high level where the packaging manager comes and reports. Then on a weekly basis I then have my departmental meeting - that takes my entire department in to account and we review goals and actions. The third meeting that I interact with on a weekly basis is what I call my short interval control meeting. What I do there is I focus specifically on the production related issues - not to go into too much detail, the departmental meeting that I have weekly takes all my specialists into account. It could be my trade quality manager - all the aspects of quality that I cover. The short interval ones focus specifically on production related issues - it could be my two lab managers and my specialist where specific needs - I would say that is my operational meeting and this one is my systemic meeting.

So you have a lot of meetings?

Oh! Then there is over and above that as a quality - QESH - a lot of review meetings that I schedule. Those would be the very regular ones the other would be more every two weeks, every month and so on. There are a lot of meetings. If I were to say meeting time for me and that is as a quality manager, I think the packaging managers and other managers have bigger departments so you have to have a lot more meetings because it brings you closer to what guys are doing - I'd say for me in my role there is about 70 - 80% of my time is spent in meetings.

For feedback?

Feedback, proposals, debate, discussions, work shopping, problem solving and then coming out there with a list of actions - "you do this, I do this".

And do you always work on spreadsheets using projectors during meetings?

Yes spreadsheet is action plan based! What would we do without that spreadsheet?!

How long have you used them during meetings?

Ever since I came into KSR action plans have been the way we run meetings and it is the way we drive the business forward. It is a set of minutes - go and do this, do that and all our meetings have as an output that requirement otherwise there is not enough to review from the previous meeting to continue into the next meeting. You've still got to drive your goals but this is then the action plan coming out of those things that will support what you want

to achieve. But yes we are overloaded with Excel - if we didn't have Excel then this business would have been dead!

[Construct 5]

Ok, next set. Two are different from the third in terms of what you learn or how you learn by interacting with the person?

The environment would be probably one that I'd pick up and it would be where this is more formalised this is more informal. This more formalised in terms of the interactions that we have is around meetings that we have scheduled. Where that would be more individual based - so the odd meeting is more individual based or informal chat - walking somewhere with someone where this would be a lot more focused around you in a particular meeting session.

So, scheduled meetings.

So you have scheduled meetings as opposed to?

As opposed to adhoc type interactions.

Which do you prefer?

I think they both deliver what we need.

When you communicate informally do you use any form of representation?

No. It would be very ad hoc it wouldn't be - I can specifically say these are the five things that we covered - and the informal would be more asking questions, sharing knowledge and then a spreadsheet gets bought up and a power point presentation gets bought up and it becomes the topic of discussion - where as this one is a lot more structured around this is the agenda that we follow in this meeting and these are the deliverables out of it and you try and stick to it so that you can make the meeting as effective as you can.

So how would you differentiate the two?

This one would be a little bit more free thinking and so on - or allowing your mind to - cause in that context it is a room with low lighting, it is focused on a little thing over there - where that is generally focused on an office where there is a lot of light and you go in there you have that discussion - you have interruptions that break the train of thought that may either add on to the discussion that you have or distract - and becomes very non-constructive, looking at this from a deficiency point of view you may not get as much as you want out of that because there are interruptions that generally happen being informal.

Are these one-on-ones or do you find interact in groups?

Both - there are one-on-ones or if it is in a meeting, or not in a meeting but in his office then people will come in or my office people will come in as we walk down the corridor people will pick up. Somebody that can add value to the discussion because of experiences that they have had - they can add to it or can direct you to something that the two of us can't solve.

And which of these two, do you find has better results?

This would probably deliver a lot more results for me so I'd say that works for me, the structured nature of my personality itself and all of those sort of things would generally then say that I view that I've gotten more results from this. That's why I would say it works for me, works better for me this way.

Is this because of a time constraint?

Generally it is. Because you want to get through reviews and all those things in as quick a time as possible so you can get on to your next problem that you want to solve next meeting so it becomes very time focused and you need to try and get the maximum value out of this as you can so that the structure that this brings allows that to come.

How do you find operations here as opposed to your previous job?

I think that particular thing has allowed us because of the culture that we are in - it has allowed us to be more efficient and effective on the Star Products side - there was a little bit more of this so it wasn't as - like you say, when you saw action plans and things it wasn't as formal as that - it would be meetings and the odd set of minutes would come out of it but in terms of driving all those sort of things I could see the immediate mindset change.

So you prefer this?

Yes it could also be the nature of the site that you were on as well - we would have experienced something slightly different in different section of the Star Products environment. For example where a lot of it was focused on fact efficiency and so on where it had become accepted at the product factory where I was at that a 50 - 60% factory efficiency is OK and if you get 69% again then that is a good thing - so it is also round the context of where not only the company is but that particular specific site that you are in and interact with. Then one has an understanding of what one needs to do.

And other KSR plants? Do they all run like this?

Generally they do - it is what we think our excellence is based on - driving those results - driving action plans and helping people to be accountable for those actions. It is the nature of what KSR is.

Do you think Star Products would improve their effectiveness if they perhaps applied that example that you gave?

Well it is around what I've experienced in KSR. I would say that yes, if you have that sort of situation, culture within Star Products you would have had a lot more performance and learning. There is a whole bunch of other things that come into it, but in essence those are one of the key things that I see.

[Construct 6]

Great, let's do the next one. Please could you group the cards such that two are different from the third in terms of what you learn or how you learn by interacting with the person?

I'm trying to think of the different contexts now rather than ones I've used previously...

I relate this purely because of their business knowledge and where they are in the organisation. What would you call it - positional situation - they are exposed to a lot more in the business - they would be more challenging from the context of them understanding a little bit more about the business, because they are higher in the organisation and hence share more knowledge with me and challenge me more on the things that I need to learn and deliver against. For example, Gary reports to me, so he doesn't have that much of a business understanding. Even though he is a subject matter expert from a micro perspective, from a business learning perspective I'd probably get less from him than the others.

Which do you prefer?

I traditionally and my qualification also says it that I am supposed to enjoy a lab type environment or technical type thing as opposed to business. This is good, I am not as excited around a lot of financial and commercial type stuff that are there that you need to know as a business leader - just because it doesn't interest me much. I enjoy more the technical aspects of the world and that's why I'd say that I get more excited about that than that - the unfortunate thing is that I need to know these things.

Which kind of interaction do you have more of?

The technical side

So how could we label the two groups?

This one is technical learning, whereas that one is business learning.

[Construct 7]

Ok, last one. Two are different from the third in terms of what you learn or how you learn by interacting with the person?

I think it is really the amount of experience each has. Between him and me, we've been in the business for about the same time. He's been here about 10 or 15 years longer than we have - so he's been through the wars and all those sort of things and he also talks to some of the negativity. If you look at it here - you pick it up on some of the previous points that I've made - here you are willing to challenge more so it is around you not accepting status quo and hence you challenge because you are new into the organisation and you are allowed to do that, whereas this person has probably seen some of those challenges and has gone through organisation. So there is a bit more negativity coming through on this side because of the fact that this person has either been exposed to a recommendation that we are putting forward on the table or just length of time in the business.

Which do you learn more from? The one with more experience at KSR or less experience at KSR?

Six of one and half a dozen of the other! Well, this one probably more because you need to take experience into account and find out why something that you are introducing into the company has failed, so you learn from past failures. Also taking and recognising the fact that they have got a fair amount of knowledge and have been through the wars and hence whatever you recommend or challenge you use their expertise and their knowledge base to prove. Obviously there's the energy and excitement factor. You would hope that he had energy and excitement about 10 - 15 years ago! So he would have been through those sort of things, and also be able to steer you in the direction of who to challenge if he buys into the concept. He'll know who the people are who you will have to convince to introduce something new.

How frequently did you interact with him?

We have... he is part of the exec team so we have, I'd say formal interactions with him, I'd say, one, two, three, four formal interactions on average per week and then ad-hocs if there are things over and above the four about another three, three - so in total seven interactions per week.

And if you ask him for help with something that he has already experienced, how does he help you with the answer?

I think he specifically gives more of the 'tried and tested'. He doesn't really help you solve it; he just gives you the solution. So he is "we tried that and it didn't work and we tried that and it worked".

And do you prefer this type of problem solving?

I use that knowledge and that solution that he gives me to try and improve it. Because if it is a solution that he says didn't work or did work, then use them to find a better solution. I won't challenge just for the sake of challenging but use the knowledge to improve.

[Rating elements against constructs]

Ok, that's the end of the comparisons section. Could we now rate each of these? Imagine a scale from 1 to 5, like this.

Where would you place G.S?

[Rating Construct 1]

G.S - I'd give him a 2

M.J - 1

M.A - 4

W.A - 2

J.A - 1

And L.A - I'd give him a 3

[Rating Construct 2]

Same story here, that's a 1 and that's a 5.

G.S - 3

M.J - 2

M.A - 2

W.A - 3

J.A - 1

L.A - 3

[Rating Construct 3]

G.S - 2

M.J - 3

M.A - 4

W.A - 2

J.A - 1

L.A - 2

[Rating Construct 4]

G.S - 2

M.J - 2

M.A - 3

W.A - 2

J.A - 2

L.A - 4

[Rating Construct 5]

G.S - 3

M.J - 2

M.A - 4

W.A - 2

J.A - 2

L.A - 2

[Rating Element 6]

G.S - 5

M.J - 3

M.A - 2

W.A - 4

J.A - 5

L.A - 2

[Rating Construct 7]

G.S - I would need to categorize relative to myself - 2

M.J - 4

M.A - 1

W.A - 3

J.A - 5

L.A - 3

Well, this is the end of the research interview. Thank you very much for your time.

No problem, it was great. Feels like I've filled my reflection quota for the year!

[End]

University of Cape Town

A3: Transcriber Service Contract



Engineering Management Programme
Department of Mechanical Engineering
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TRANSCRIBER SERVICE CONTRACT

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Project: Master's Dissertation Research Project

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Appendix B

The following chapter offers a discussion for a viable system for learning. First, an understanding of the Viable System Model is presented. The following two sections discuss the concepts of variety and recursion in the Viable System Model. Finally, the viable system for workplace learning is presented.

B1: Understanding the Viable System Model

Stafford Beer developed the Viable System Model (VSM) to support problem diagnosis in human organisations and assist with their improved functioning. The VSM comprises of a system interacting with its *environment*. The system is composed of two parts: the *Operation* part which involves all the basic operations of the system, and the *Metasystem* part (see Figure B.1) which provide services to the operation part (Walker, 2006). These two parts are further divided into five important systems. In order to operate effectively in its environment, a viable system requires that these five systems (S1, S2, S3, S4, and S5) are present, and they effectively create an integrated 'whole'.

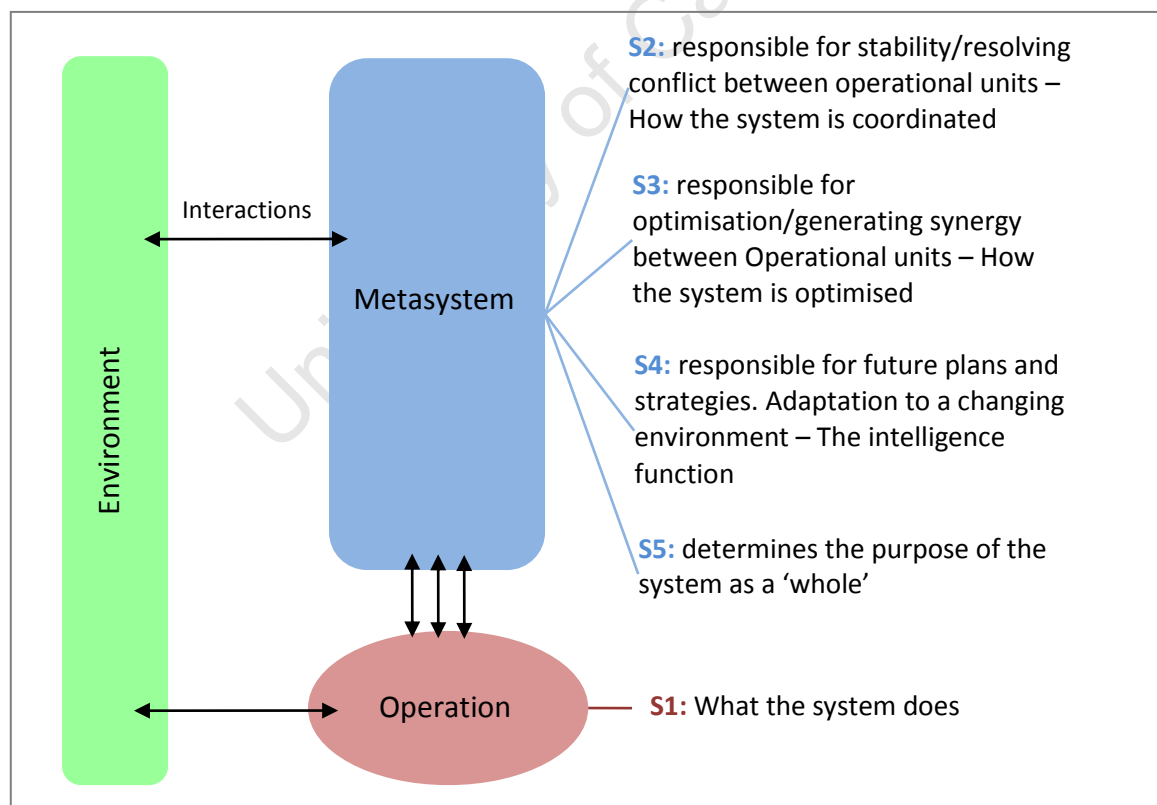


Figure B.1: Components of VSM - Adapted from Bustard, Sterritt, & Taleb-Bendiab, 2006; Walker, 2006

Walker (2006) offers the following line of thought on which the 'whole' is based on:

- ❖ System 1 (S1) carries out the operations.

- ❖ A way to deal with conflicting interests (which result from the interactions occurring in S1) is required. System S2 has the responsibility of conflict resolution and ensuring stability.
- ❖ When System S1's interactions are stable, a way to optimise the interactions is needed. This is the responsibility of System S3.
- ❖ With a set of optimised and stable operating units, a way to ensure its survival in changing environments is necessary. System S4 assesses the environment for concerns and opportunities, and creates plans.
- ❖ Finally, the 'whole' system must operate within a similar overall context and direction. System S5 achieves this by providing policies and procedures to ensure completeness of the system.

B2: Variety and the Viable System Model

The VSM developed from the field of cybernetics and system theory (Clemson, 1984). Variety is the measure of the number of different states in a system, which increases with complexity (Hilder, 1995). For example, a light switch has a variety of 2 (on or off). However, variety depends on context and the observer. For example, if the variety of a dimmer switch is determined by observing its brightness, it will have a different number of states, depending on who is observing. According to Hilder (1995), humans are complex and can have infinite variety. To cope with such variety, we use variety attenuators. Our perceptions and motives *filter* the variety of our environment. We select parts of the environment which we deem relevant and ignore the rest. We also amplify our variety to increase our power over the environment. Using our intelligence we “amplify the effect of our actions”, through variety amplifiers (Hilder, 1995, p. 14).

Similarly, a system amplifies and attenuates aspects of its internal and external environment. Hilder argues that systems within the VSM maintain homeostasis. In order to cope with its environment, the Operation (S1) needs to match its variety to that of the system's environment. In the same way, in order to manage the Operation, the Metasystem (S2, S3, S4, and S5) needs to match its variety to that of the Operation. They absorb the variety from their environment, by attenuating it and amplifying its own variety back to it (Hilder, 1995). “Control can be obtained only if the variety of the controller is at least as great as the variety of the situation to be controlled – in short, variety absorbs variety” (p. 21). For a system to be viable, it must be able to attenuate and amplify variety to maintain stability.

B3: Recursion and the Viable System Model

The VSM is a recursive system that offers its conceptualisation as a series of nested systems. Each viable system contains smaller viable systems and is embedded in larger viable systems, similar to 'Russian dolls' (Walker, 2006). The different levels in this model are called 'Levels of Recursion'.

For this study, triple level of recursion is used, with Recursion 1 as the system-in-focus (see Figure B.2).

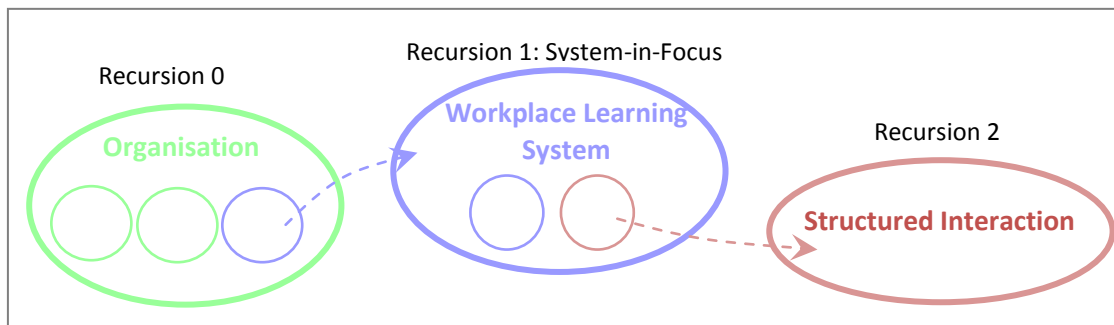


Figure B.2: Triple recursion with System-in-Focus.

System-in-Focus: Viable Workplace Learning System.

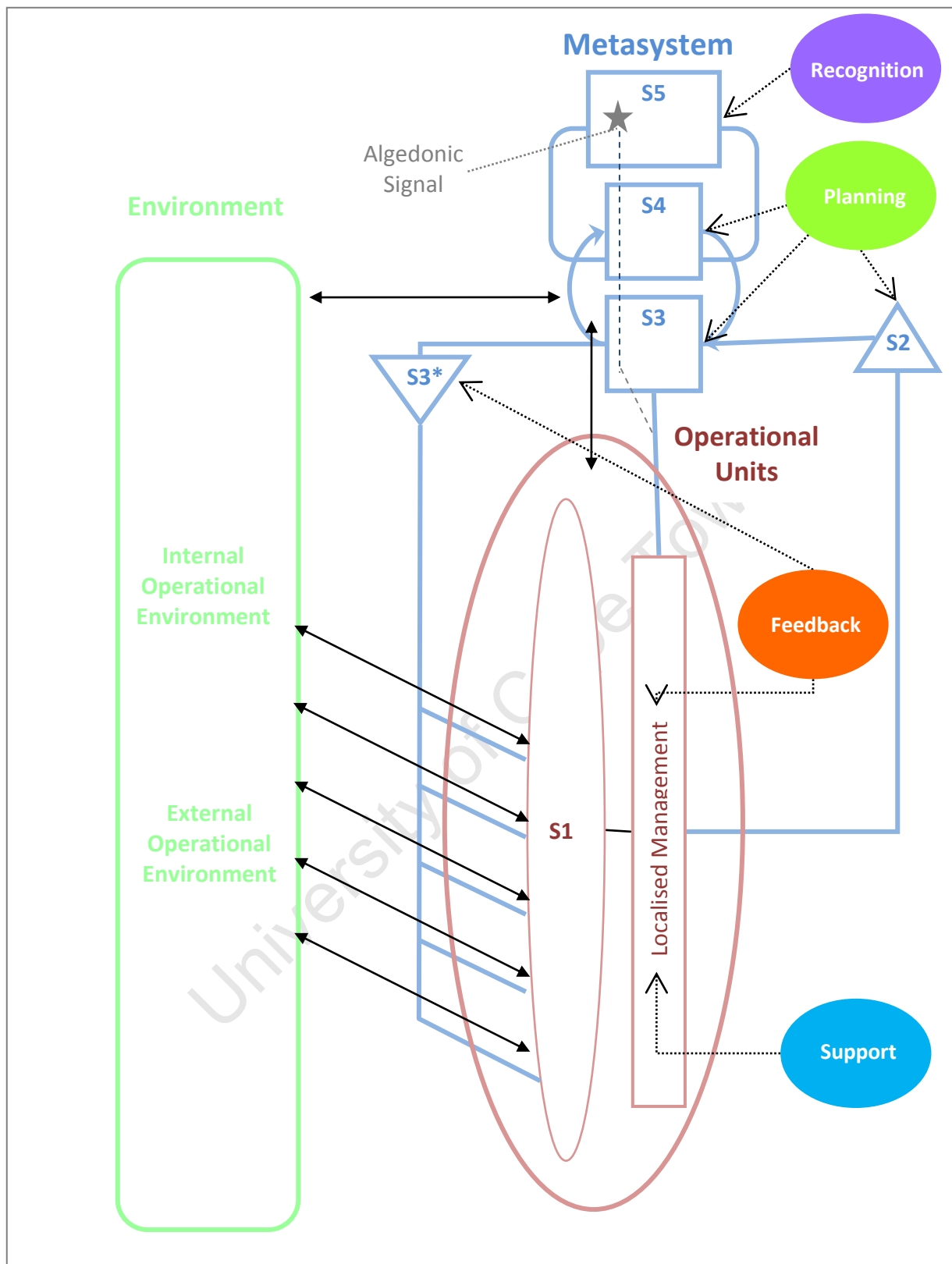
Purpose of System: to facilitate learning for individuals in the workplace, by shaping the WPL mechanisms to enable participation in Structured Interactions.

With the above view of the system in focus (Viable WPL System) the procedures which define the VSM can now be applied. The next section illustrates the learning system, describing the operational units (S1), four elements of the Metasystem (S2-S5) and environmental interactions.

B4: Presenting the Viable WPL System

The results from this study show that the four WPL mechanisms motivate individuals to *Take Initiative to Interact* and enable *Structured Interactions* to take place. In the workplace, systems and activities generate *Planning, Feedback, Recognition, and Support mechanisms (the four WPL mechanisms)*. Collectively, these WPL mechanisms are the driving force behind Structured Interactions, where individuals can engage in *focused* conversations with a *shared interest and language*. Through *constructive inquiry* and *feedback*, being *open to each other's ideas*, and *descriptive explanations* that illustrate *logic*, participants can get to the heart of their problems and achieve the goal of the interaction.

Drawing on the principles of VSM, an understanding of how the interaction between the four WPL mechanisms can create a Viable System for WPL is presented. This system was developed iteratively and Figure B.3 illustrates final version of the Viable WPL System. The double arrows illustrate the amplification and filtering functions within the system. The four WPL mechanisms from this study form part of the five components of the learning system (S1 to S5) and are discussed after Figure B.3.



The four WPL mechanisms function at operational and strategic levels in the organisation. Figure B.4 illustrates this using examples of their functionality.

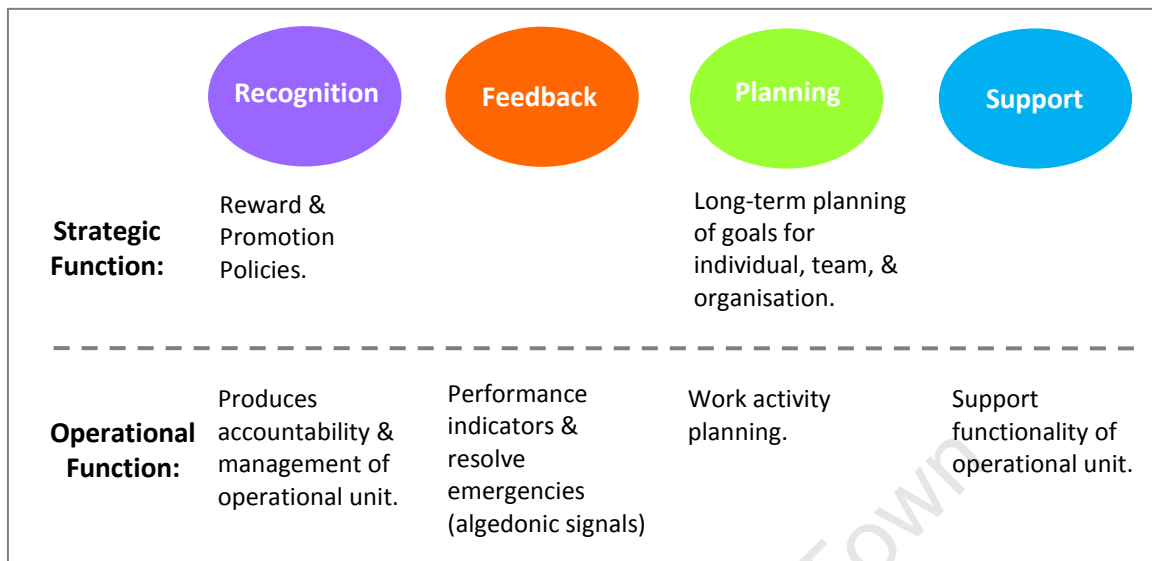


Figure B.4: Strategic and operational functionality of four WPL mechanisms.

System Environment

A Viable WPL System is able to maintain its identity and fulfil its purpose in its environment. The system's environment is composed of workplace activities in which Structured Interactions can take place. These activities take place in both formal and informal settings and take the form of dialogues, discussions and debates in meetings, 'casual' chats, and electronic communications.

System 1: S1 – Operational Unit

The operational unit of the learning system is Structured Interactions. Structured Interactions take place when two or more people interact in work activities (e.g. meetings, 'casual chats', electronic communication). Figure B.5 shows the operational unit for the system.

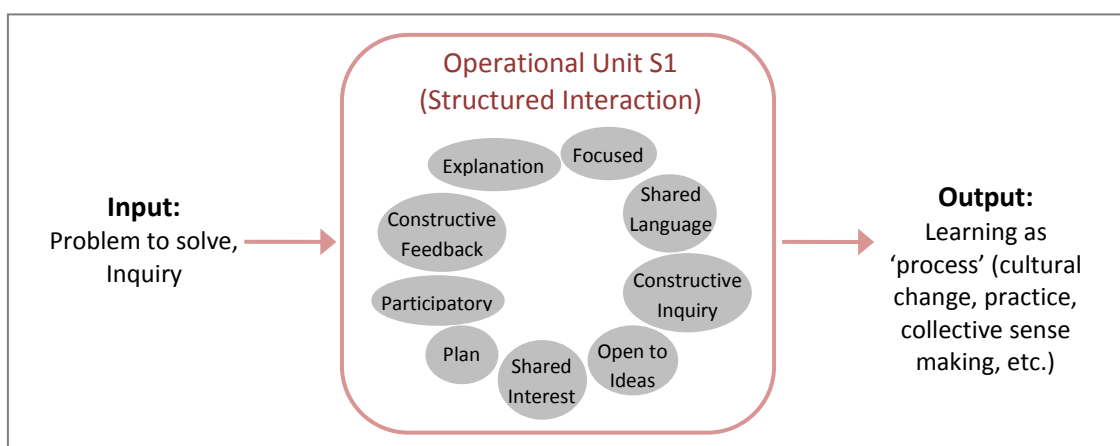


Figure B.5: Operational Unit S1.

S1 Localised Management, Accountability and Performance Indicators:

The operational unit of S1 has a localised management function. This function serves to organise and coordinate the operational units. In this system, the individuals who are interacting fulfil the role of the localised management function. Performance indicators for the units come from the **Feedback WPL Mechanisms** in the organisation that provide feedback to individuals about their work activities, achievements and performance. This is through monitoring and reviewing activities and goals, in order to provide feedback. Self-management and accountability are motivated by the **Recognition and Support WPL Mechanisms**.

System 2: S2 – Coordination

S2 ensures that the operational units interact in a stable manner. If the units in S1 have instabilities left unchecked, they will become destructive, and the learning system will begin to oscillate.

The main conflict experienced by S1 is ‘time’ to participate in a Structured Interaction for the purpose of learning. S2 is achieved through the **Planning WPL Mechanisms** in the organisation that assist individuals with developing, preparing and arranging work activities. Work activity (such as meetings) planning helps to keep S1 units in a stable state.

System 3: S3 – Optimisation

S3 optimises the interaction between S1 units and generates ‘synergy’. S2 deals with the day-to-day issues associated with S1, while S3 has a more strategic focus on the Viable WPL System. S3 resides at the centre of activity, looking for ways to optimise operations. Monitoring and planning functions help to achieve this. Like S2, S3 is achieved through the **Planning WPL Mechanisms** in the organisation. However, in S3 they assist individuals with developing, preparing and arranging work goals (with a focus on long term). Monitoring goal progress provides data for feedback and helps optimise performance.

System S3* (illustrated in Figure B.3) provides a way for the intermittent audit of S1 progress. The Audit “channels” directly enter S1 and are denoted by S3*. They ensure that monitoring and feedback functions are doing what they’re supposed to. This is achieved through the **Feedback WPL Mechanisms** in the organisation. This time they provide feedback to the organisation, from the individuals about their work environment.

System 4: S4 – Intelligence

S4 is concerned with future plans and strategies in the context of the system’s environment (work activities). Again, this is achieved through the **Planning WPL Mechanisms** in the organisation. S4 uses information from the feedback WPL mechanisms to identify trends that may be either beneficial or detrimental to the system and constructs plans (for interactions) accordingly.

System 5: S5 – Policy

S5 ensures that the ‘whole’ WPL System operates towards a shared direction for learning. System S5 achieves this through the **Recognition WPL Mechanisms**. Recognition policies for rewards and promotions create motivation and support for self-management and accountability by acknowledging and rewarding individuals and teams for taking initiative at work, coming up with innovations, making improvements, achieving goals, and sharing knowledge and by promoting guidance and collaboration in work activities and goal achievement between colleagues. Effectively ensuring that Structured Interactions take place in the workplace.

The *star* shown in S5 (see Figure B.3) is an Algedonic Signal that monitors signals passing from S1 to S3. If an emergency occurs, a direct signal is sent to S5 which requests action by S3 and S4. The WPL system achieves this through frequent interaction between the all levels in the organisation. Regular and frequent interactions between members in an organisation ensure that if ‘emergencies’ occur, the **Feedback** and **Planning WPL Mechanisms** can resolve them.

Collectively, the four WPL mechanisms (planning, support, recognition, and feedback) create these five systems (S1, S2, S3, S4, and S5) for viability, generating, it is argued, a *Viable System for learning in the workplace*.