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UNIVERSITY OF CAPE TOWN

FACULTY OF EDUCATION

**Learning informally on the job: reflections from the coalface.
A case study of a municipal water reticulation depot
in the City of Cape Town**

A dissertation presented in partial fulfilment of the requirements for the Degree of

MASTER OF PHILOSOPHY IN EDUCATION

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Declaration

I declare that *Learning informally on the job: reflections from the coalface. A case study of a municipal water reticulation depot in the City of Cape Town* is my own work, except where indicated, and that it has not been submitted before for any degree or examination at any university.

Signed:

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Abstract

This dissertation explores questions relating to informal learning by workers in a municipal workplace. It aims to understand what knowledge workers have about their work, how they have learnt what they know, the context within which learning happens and how power relations impact on the learning process. The study seeks to foreground the knowledge of workers in a context where such knowledge is generally ignored or devalued.

The study draws on the literature on workplace learning that recognizes learning as a socially situated process. It makes use of the conceptual framework of situated learning, but draws on various critiques of this conceptual framework as a way of deepening the analysis.

The research adopted a case study methodology as I was interested in exploring detail and depth in a specific context. Data collection involved mainly observations of workers at work and informal interviews in the field, and these were supplemented by semi-structured interviews.

The findings indicated that much informal learning about work takes place amongst workers in a work team, largely through modelling, but that this learning is shaped by power relations between workers. The findings show also that workers' learning, and their perceptions of their learning, have been impacted on by moves towards the formalization of learning. In the context of the pervasive emphasis on formal training and qualifications, studies which focus on workers' informal learning are an important counter –balance in the workplace learning research field.

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Note: Racial terminology:

It is unfortunately a reality of South African life that racial terminology remains relevant. However, the use of racial categories in this dissertation does not in any way indicate support for these distinctions, but is used sociologically to explore differences. To make clear the social construct of racial groupings I have used inverted commas around the terms.

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Acronyms used:

| | |
|---------|--|
| COSATU | Congress of South African Trade Unions |
| DM | Distribution Maintenance |
| DOL | Department of Labour |
| DPLG | Department of Provincial and Local Government |
| DPSA | Department of Public Services and Administration |
| FEDUSA | Federation of Democratic Unions of South Africa |
| GEAR | Growth, Employment and Redistribution |
| IMATU | Independent Municipal and Allied Trade Union |
| LGSETA | Local Government Sector Education and Training Authority |
| LGWSETA | Local Government & Water Sector Education & Training Authority |
| LOGOLA | Local Government Leadership Academy |
| NPM | New Public Management |
| NQF | National Qualification Framework |
| RPL | Recognition of Prior Learning |
| SALGA | South African Local Government Association |
| SAMWU | South African Municipal Workers' Union |

CHAPTER 1: INTRODUCTION

1. DESCRIPTION OF THE STUDY

This research used a qualitative case study to focus on informal learning in the workplace. Drawing on workplace learning literature, I approached the case study with the understanding that informal learning processes are essential in equipping workers to carry out their jobs (Davis, 1992; Fenwick, 2001; Livingstone and Sawchuk, 2005). The research explored the question of what it is that workers learn informally, how they learn it, what context they learn it in and the power relations that shape the learning process.

The case study chosen focused on informal learning in a public sector workforce, specifically a municipality. The particular site chosen was a water depot, Hillstar, in the City of Cape Town. It has a long history, first as the main water depot for the Cape Town municipality pre-1994, and then as a key 'resource' depot for the amalgamated City of Cape Town post-1998.

In approaching this research, I assumed that the process of restructuring local government, as well as the introduction of other labour-related legislation and systems, begun after the first democratic elections of 1994, would impact in various ways on the depot and on the process of informal learning.

In the next section I set out the aims of my research. I then go on to outline my rationale in pursuing this subject. Finally I focus on the broad social and political context within which my case study was located.

2. RESEARCH AIMS

The aims of the research were:

1. To determine what knowledge is acquired by workers informally on the job, that enables them to carry out their work.
2. To explore workers' experiences and perceptions of how informal learning takes place.
3. To examine the broader workplace context and its impact on informal learning.
4. To examine the power relations underpinning the informal learning process in a workplace.

These aims helped me to clarify what I was attempting to achieve, and provided the framework to guide the fieldwork.

Learning happens in specific workplaces, and the positioning of that workplace in broader society needs to be understood in order to develop a deeper understanding of what, how, when and where that learning takes place. As Fuller, Munro and Rainbird argue:

Without a contextualized analysis, the treatment of questions of access to and control of learning opportunities, as well as what is learned and how, is likely to be limited. ... by locating workplace learning in context, clearer understandings of the factors influencing the learning environment and processes can be gained, and insights about the sorts of changes which may lead to its improvement can emerge (Fuller, Munro and Rainbird, 2004: 4).

In the case of learning in a municipal workplace, it is therefore important to understand the broader context of local government.

3. RATIONALE FOR RESEARCH

My initial interest in my research topic was sparked by my work in the South African Municipal Workers' Union (SAMWU)¹, which partly involved exploring the

¹ I have been employed as the National Education Officer for SAMWU for the last six years, and as a provincial education officer for SAMWU for three years before that.

impact that local government restructuring was having, both on workers and on service delivery.

In the post-apartheid period, local government, in a process that stretched over more than a decade, was restructured with the stated aim of consolidating disparate systems of local government into one coherent system, creating 'sustainable human settlements' and extending service delivery to all (Department of Constitutional Development, 1998: ix). It was envisaged that through this process greater equity would be achieved as well as redress of past inequalities.

The White Paper on Local Government outlined a number of different service delivery arrangements that municipalities could draw on in order to deliver services more effectively and so achieve the goals of greater equity and social redress. These options included privatization, public-private partnerships, contracting out, and corporatisation (Department of Constitutional Development, 1998: 94). SAMWU has long been opposed to privatization (SAMWU, 1989) and the commercialization of local government services (SAMWU, 2003) and has instead argued that local government itself should be the vehicle for service delivery (SAMWU, 1997).

In 1997 SAMWU drew up an action plan for a pilot project which began to outline an approach to restructuring, or 'turning around' service delivery, particularly water services, so that they would be more effective and inclusive but still remain as a service delivered by the public sector (SAMWU, 1997: 2). This plan identified the need to draw on the "experiences and understanding of SAMWU members [workers]", who are "at the coalface of service delivery" (SAMWU, 1997: 8), as the basis for developing this public sector alternative to privatization. The approach taken by SAMWU was similar to that of other trade unions internationally who are opposed to privatization and seek to achieve public sector reform by, among other things, "empowering front-line workers to make use of

their expertise and knowledge” (Webster and von Holdt, 2005: 410). In the approach taken by SAMWU and other trade unions internationally there is an implicit understanding that workers on the job do have knowledge, expertise and skills, which can be a rich source of information and ideas about how to improve service delivery; but that the existence of this knowledge, expertise and skills is often not acknowledged or drawn on by management.

On the face of it, the White Paper on Local Government, like the SAMWU action plan, recognized the “considerable knowledge and expertise” of front-line workers (Department of Constitutional Development, 1998: 96). However, since the publication of the White Paper, it seems to me that neither the national nor the local state has done much to acknowledge concretely front-line workers’ knowledge and expertise, or to develop it. This is confirmed by Atkinson who writes “much of the emphasis regarding municipal restructuring has been placed on the higher echelons of municipal establishments. The role of the front-line staff is seldom discussed” (2003: 130). This is not unique to the municipal workplace, or to South Africa. Livingstone and Sawchuk (2005), drawing on a study conducted in Canada in five union locals, argue that “informal learning and tacit knowledge has been heavily relied on to actually run paid workplaces” (2005:2), although this is not recognized by management. They go on to argue that workers’ informal learning is often “denied, suppressed, degraded or diverted” by management (ibid).

In the ten and more years since the SAMWU document was drawn up, it has become clear that in many instances, local government in South Africa is in a weak state, unable to deliver adequate services to all its constituencies (Atkinson, 2003; Atkinson, 2007; Pieterse and van Donk, 2008; Hemson, Carter and Karuri-Sebina, 2009). Municipal protests about service delivery, stretching back to at least 2005 are an indication of this. In an attempt to deal with local government weaknesses, DPLG put in place ‘Project Consolidate’ which aims, through national and provincial government interventions, to strengthen and build

the financial, institutional, and service delivery capacity of local government (Pieterse and van Donk, 2008: 53).

One of the reasons frequently cited as an explanation for the weakness of local government is its lack of capacity, particularly the lack of technical, professional and managerial skills (Pieterse and van Donk, 2008: 53; Ndletyana and Muzondidya 2009: 29; Voice, 2005: 8). In looking to build the capacity of local government, DPLG's National Capacity Building Framework has identified skills shortages in areas such as engineers, technicians and artisans, urban planners, environmental health, emergency and disaster and management (DPLG, 2008: 12). These are the skills of those higher up the grading system. It seems to me that there is very little focus on workers lower down in the job hierarchy, beyond recognition of the need for more basic literacy and training skills (ibid). There is little consideration of whether workers at lower grades have skills and valuable knowledge, what those skills and knowledge are, and how they acquire them.

And yet, I would argue that if government is to take seriously the need to draw on the experience of workers 'at the coalface' in order to improve service delivery, it needs to focus on the skills and knowledge these workers have, how they have acquired them, and what hinders and what facilitates learning.

This dissertation is an initial attempt to redress the imbalance of national and local government's focus on the skills and knowledge of managerial and professional levels of local government; by looking at what ordinary workers on the ground have learnt on the job and how they learnt it.

4. THE CONTEXT

4.1. Local Government Restructuring

While my research looks at informal learning, it does this in a very specific workplace context, that of local government. In this section I will briefly outline the

key trends within local government restructuring in order to provide a background to my case study.

4.1.1. International context: neo-liberalism and New Public Management

Internationally, neo-liberalism has been the dominant form of capitalism from the 1970s/1980s onwards. Privatisation, which is the withdrawal of government in favour of the private sector, is at the core of neo-liberalism (Samson, 2004: 32). In a narrow definition, privatisation involves the selling off of state assets. A broader definition, however, recognizes that privatisation involves a much wider array of ways in which market relations are brought into the public sector, and the public sector is commodified (McDonald and Ruiters, 2006: 10).

Commercialisation of the public service has become a dominant trend internationally since the 1990s. This involves bringing private sector ways of operating into the public sector and is “a process directed at establishing private sector management principles, values, practices and policies within public sector organisations” (Greenberg, 2006: 3). It includes practices such as cost recovery, performance targeted salaries, management autonomy and ringfenced decision making (McDonald and Ruiters, 2006: 12). These practices and policies are collectively known as ‘new public management’ (NPM) or ‘new managerialism’. The main aim of NPM is to modernise the state and bring it into line with neo-liberal policies more generally (Bardouille, 2000; Desai and Imrie, 1998).

New managerialism is not just about how the services within a municipality are organised, or about the elevation of the role of the manager, it is also about how the running of the services is structured. McDonald argues that there is “the ‘Taylorization’ of services”, with services cut up into smaller and smaller discrete functions, which are separated from each other, “and analysed for efficiency improvements, mechanization (e.g. prepaid meters), outsourcing, and possible downloading (e.g. do-it-yourself sanitation systems in low-income communities)” (McDonald, 2008: 182). There is also increasing automation of more skilled jobs.

The result of this is that workers are increasingly alienated from the work process as they do a smaller and smaller part of what is involved in actually delivering services to the community.

4.1.2. Restructuring in South Africa: Commercialization of local government

In the process of negotiating a transformed local government post 1994, the ANC government drew extensively on neo-liberal trends of privatisation and commercialisation, despite an overt political commitment to redress past inequalities and meet the needs of all South Africans. As van Donk and Pieterse put it, "South African urban policies were characterised by a form of schizophrenia: being torn by neo-liberal financial and institutional precepts, on the one hand, and social development and environmental redistributive precepts on the other" (2006: 117).

Local government, faced with enormous challenges of political, institutional and administrative amalgamation and of extending service delivery to all; and fearing a lack of capacity, as well as facing a real lack of finances because of the austerity policies of the Growth, Employment and Redistribution (GEAR) policy (Pape and McDonald, 2002: 5), turned to privatisation and public-private partnerships, which involved not only direct private sector involvement in service delivery but also an emphasis on principles such as full cost recovery for services delivered (Greenberg, 2006: 22-23).

After an initial flurry of large-scale privatisation at local government level there was a shift towards more low-key but pervasive outsourcing, corporatisation and commercialisation in municipalities across the country (McDonald and Ruiters, 2005: 3).

In line with strict fiscal controls imposed on local government by the National Treasury, the number of local government employees has also fallen; from 1997

to 2003 for instance, the number fell from 238 000 to 203 300 – a 14% drop (Ruiters, 2006: 129). This, as Ruiters argues, had a severe impact on the ability of local government to deliver services. It has also resulted in an increasing use of a range of externalised forms of labour by municipalities – from subcontracting, to labour brokers, to the use of temporary and casual labour.

The general trend across municipalities in South Africa, particularly in the metropolitan centres, has been towards the commercialisation of local government. For instance, the City of Cape Town fully adopted a corporatist approach to restructuring after the 2000 local government elections (Greenberg, 2006: 23).

4.1.3. Restructuring in the City of Cape Town

The history of the City of Cape Town over the last 15 years has been one of frequent shifts in who holds political power in the city; and all the consequences that this has for policy, who is employed in key managerial positions, and workplace restructuring. However, as McDonald points out, “behind the façade of party political debates lies a much deeper convergence toward the development and implementation of outward-looking, market-orientated urban reforms” (McDonald, 2008: xix). It is, as McDonald argues, a neo-liberal city (2008: 6).

Today, the City of Cape Town is a unitary structure, with 22 subcouncils. It has been a long and arduous road for management and workers alike to reach this point - a single amalgamated city which brings together the almost 60 local authorities (both white local authorities, black local authorities, administrations, and various other decision making bodies) that existed under apartheid (McDonald, 2008: 101). Before amalgamation, the local authorities, although physically next to each other, with no distinct geographical break between one local authority and another, were run as completely separate entities. Each had its own systems, infrastructure and support personnel (McDonald, 2008: 104).

Combining these authorities into one required an enormous upheaval of systems, ways of operating, staff and management.

McDonald and Smith characterise the City of Cape Town as one in which there is “commercialisation and the embracement of market principles, with the objective of balancing the financial bottom line and ‘running the city more like a business’” (2004: 1462). There is a strong impression among officials that private sector involvement in the delivery of municipal services is either inevitable, or a positive and necessary step towards improving efficiency in the delivery of services (McDonald, 2008: 196).

4.2. Workplace learning in the public sector

Restructuring internationally in the public and private sector over the last 30 years has impacted on how knowledge acquisition, skills and learning in the workplace are perceived. Some have argued that this restructuring has opened up opportunities for workers, and marks an improvement in the working lives of workers, because there has been a shift away from Fordist-type production to a more flexible division of labour, with flattened hierarchies, and the re-uniting of conception and execution, often termed post-Fordism (Piore and Sabel, cited in Kumar, 1995: 47). In the ‘new times’ we now live in, knowledge has become highly valued, and workplaces are increasingly perceived as ‘learning organisations’ (Mulcahy, 2000: 217).

Other writers have questioned whether post-Fordism and the notion of the knowledge society have in fact benefited workers. As Foley points out, despite all the shifts and restructuring of capital, “capitalism remains essentially the same” (1999: 13). However, the discourse of the knowledge society and workplaces as learning organizations has become entrenched, with companies placing greater emphasis on vocational training and on-the-job learning, with “education and learning, long seen to be of great intrinsic value and of some economic use, now ... central to production” (Foley, 1999: 13).

In the next section I go on to look at how this increased emphasis on vocational and workplace learning has found expression through the National Qualifications Framework system established in South Africa. However, before doing that I look, in this section, at the concepts of a 'knowledge society' and the workplace as a 'learning organization' within the context of the public sector reform I dealt with in section 4.1. above.

The discourse of knowledge management and of the workplace as a 'learning organization' has found its way into the process of public sector reform. In the United Kingdom for example, knowledge management practices have been implemented as part of the public sector reforms (Currie, Waring and Finn, 2008: 363). According to Currie, Waring and Finn, one of the foci of these reforms in the United Kingdom is on the "contribution that the effective management of knowledge across organizational and professional boundaries can make to improve public services" (2008: 363), with public organisations encouraged to become 'learning organisations'.

A number of initiatives have been implemented in countries like the United Kingdom which have knowledge management and the development of learning organisations at the centre of the 'modernization' of the local government agenda (Currie, Waring and Finn, 2008; Durose, 2009; Rashman and Hartley, 2002). Many of these initiatives focus on learning among the management level (political leaders, senior management and operational management) who interact across local authorities, and share 'best practice'.

In contrast, and of more relevance to my research given my focus on front-line municipal workers, Durose (2009) focuses on the 'local knowledge' of front-line workers, who she defines as "public sector staff with some responsibility for delivering policy and services together with engaging with communities as part of their everyday work" (2009: 35). They include health improvement officers,

community development workers, youth workers, and sports development officers.

Durose (2009) argues that these workers develop 'contextual understanding' which allows them to actively engage with the community and provide needed services. Front-line workers are able to use "their own 'readings' of the local situation" and the 'local knowledge' that they develop to actively engage with all members of the communities they work in and develop meaningful interventions (Durose, 2009: 47). As Durose says, their 'local knowledge' allows "front-line workers to 'bend' the rules of policy to the relationships that front-line workers have to negotiate in their day-to-day work" (2009: 44 - 45).

In South Africa, the national and local state, as part of public sector restructuring, has adopted wholeheartedly the notion that we live in a knowledge economy and that government must view itself as a learning organisation. The Department of Public Services and Administration (DPSA) in particular has positioned itself strongly within a knowledge economy, arguing that "in this knowledge economy knowledge is at the core of all the functions in government and is viewed as the raw material for what government does to meet its mandate" (DPSA, 2003: 1).

The Department of Provincial and Local Government² (DPLG) has also emphasised the importance of local government as a 'learning organisation'. In the White Paper on Local Government, DPLG positioned local government as a learning organisation, with one of the key characteristics of developmental local government being that of 'leading and learning' (Department of Constitutional Development, 1998: 21). I argue that this is very much an outward orientation, which focuses on local government taking the lead in developing innovative, flexible policies and is linked with other goals such as that of ensuring local economic development. It is focused on the learning that a municipality does as

² The name of the department was changed after the 2009 National General Elections to Cooperative Governance and Traditional Affairs.

an organisation, rather than the learning that happens among workers who actually deliver the services, in other words, those at ‘the coalface of service delivery’.

In the White Paper (Department of Constitutional Development, 1998) learning that takes place on the job, by those who work for the municipality, is linked to building capacity in local government. The paper identifies some of the reasons for lack of capacity in local government as stemming from pre-1994 characteristics such as “hierarchical grading systems and narrow job definitions” which have “deskilled jobs at the front-line”; “inadequate training, the lack of opportunities to influence job content and organisation and poor management practices” (Department of Constitutional Development, 1998: 96).

The White Paper (Department of Constitutional Development, 1998) goes on to argue that:

If capacitated and empowered, front-line staff can utilise the considerable knowledge and expertise of those who actually perform delivery functions to enhance effective operations. Strategies to develop the skills of front-line staff should be included in the integrated human resource development strategies of municipalities, which should cover capacity building, training, staffing, and labour relations (1998: 96).

The implication of this, I argue, is that the ‘considerable knowledge and expertise’ of front-line workers is only going to be recognized and valued once these workers have gone through formal training. In effect, this serves to de-emphasise the already existing knowledge and understanding of front-line workers rather than foreground it in ongoing processes of improving service delivery.

The South African Local Government Association (SALGA)³ also perceives local government as a ‘learning organisation’. At a Consolidation of Municipal Transformation Programme Knowledge Sharing Conference held in 2006,

³ The national body representing organized local government.

SALGA highlights the importance of “promoting the development of Municipalities as learning organisations” (Mabe, 2006). In carrying out its objective of the “enhancement & mobilisation of existing capacity with the local government sphere” (Mabe, 2006: [2]), SALGA identifies three programmes, all of which are aimed at management and councillors, namely “councillor induction programme”, “executive leadership development programme”, and the SALGA and DPLG Knowledge Sharing Programme⁴ (Mabe, 2006: [3]).

Over the years DPLG has undertaken a number of initiatives aimed at sharing knowledge and ‘best practice’, building capacity, and developing skills. These initiatives include the establishment of the Local Government Leadership Academy (LOGOLA), which focuses on developing leadership capacity among councillors and senior managers (LOGOLA/ICMS, 2004); the Knowledge Sharing Programme (see footnote 4); and the Consolidation of Municipal Transformation Programme (CMTP) which has, as one of its components, a “capacity building and knowledge management strategy” (DPLG, 2005).

I argue that the approach to local government as a ‘learning organisation’ reflected in all these initiatives by DPLG and SALGA emphasises learning and knowledge sharing between municipalities, and among management and councillors. I have found little or no emphasis on recognizing and enhancing the learning that happens at ‘the coalface of service delivery’ by front-line workers.

This is perhaps not surprising considering that the commodification and commercialisation model of local government restructuring places a great deal of emphasis on the role of the manager. “Managerialism values management’s perspective as the only rational and legitimate one” (Hassen, 2003: 136). It is therefore not surprising that government’s application of the notion of ‘local

⁴ This was an initiative of the Department of Provincial and Local Government and SALGA which was launched in 2003. It focused on building learning networks between municipalities and was also meant to have a knowledge sharing portal on the internet.

government as a learning organisation' focuses almost exclusively on the learning and knowledge of, and between, managers rather than workers.

There is little evidence that the approach to knowledge management in the City of Cape Town is any different. The Water Services Development Plan for the City of Cape Town does, however identify a sub-goal for efficient and effective water services institutional arrangements as "to create an environment that develops and utilizes the skills, competencies and innovation potential of all employees are developed and utilized to meet the objectives of the organization" (City of Cape Town, 2007: 49).

4.3. National Qualifications Framework

The development of a new education and training system in South Africa post 1994 drew on international trends of an increased emphasis on vocational training and on-the-job workplace learning. Colley, Hodgkinson and Malcolm (2006) have characterized this period internationally as one where "education and employment policy focused on the formalization and codification of knowledge that had previously been highly non-formal, often through the introduction of competency-based assessment and qualifications" (2006: 66).

In South Africa the new system was captured in the National Qualifications Framework (NQF), which incorporated the vocational and workplace training that 'white' workers had had access to in the apartheid years, and sought to extend a new system to all workers regardless of 'race'. One of the overt aims of the system was to address previous inequalities and injustices in the education and training system that had prevailed in an apartheid South Africa (Lugg, 2007).

There was a strong emphasis in the NQF on codifying existing knowledge, and of recognizing knowledge and skills through the process of awarding qualifications. It was envisaged that all individuals would be given the opportunity to acquire qualifications and to have the knowledge and skills learnt informally on the job

formally recognized through the system of Recognition of Prior Learning (RPL). One of the key innovations of the NQF was to replace the apprenticeship system with that of learnerships. Learnerships integrate formal learning situations with workplace learning experiences, and in so doing, are meant to contribute to integrating more formal academic education and workplace learning; increase access to education and learning opportunities; and ensure that education and training meets the needs of the labour market (Garraway, 2005: 94).

However, thirteen years after the new system was first introduced, there have been a number of trenchant critiques made of both the system itself, and the way it is being implemented (Allais, 2007; Cooper, 1998; Samson and Vally, 1996).

Cooper (1998) and Samson and Vally (1996) emphasise the 'losses' involved in formalizing all learning, and in the context of these critiques of the system of formal qualifications and training, it seems important to go back and look at what learning is continuing to take place outside of the formal training system, and how the two systems impact on each other. This dissertation is meant to be a contribution to that process.

4.4. Employment Equity

The introduction of a new training dispensation in South Africa has been closely linked to the drive for greater employment equity in the workplace. Employment equity was championed by the new democratic government post-1994 as a way of redressing some of the past inequities. The legal imperative for employment equity is contained in the Employment Equity Act of 1998 (DOL, 1998a), which legislates for workplaces to aim to remove any discriminatory practices from the workplace, as well as to ensure that there is equitable representation of people from the designated groups (those previously disadvantaged) in the workplace.

One way of achieving employment equity targets is to ensure that workers are trained and then moved into more skilled jobs. As the Employment Equity Act

states, affirmative action measures in the workplace include measures to “retain and develop people from designated groups and to implement appropriate training measures, including measures in terms of an Act of Parliament providing for skills development” (DOL, 1998a: 15 (2) d ii).

Like any other workplace employing more than 50 employees, municipalities are required to implement the Employment Equity Act.

4.5. Skills capacity and training in local government

Prior to 1994, training in the local government sector was dealt with through two pieces of legislation, which set up two training bodies. These were the Manpower Training Act of 1989, which set up the Local Government Education and Training Board, and the Local Government Training Act of 1985, which set up the Training Board for Local Government Bodies (Department of Constitutional Development, 1998: 103). The existence of these two training infrastructures led to training that was fragmented and inequitable. In the context of apartheid, training was also orientated towards managers, supervisors and ‘white’ workers. As the Local Government White Paper argued, the system prior to the transition to a new system was “unable to generate a common national vision of training objectives or a systematic human resource development strategy” (Department of Constitutional Development, 1998: 103).

In an attempt to overcome the problems of the past, and in line with the requirements of the Skills Development Act of 1998 (DOL, 1998b), the Local Government and Water SETA⁵ (LGWSETA) was established in 1998. The LGWSETA later became the Local Government SETA (LGSETA) when training in

⁵ Sector Education and Training Authorities (SETAs) were established in terms of the Skills Development Act of 1998 and consist of equal representation from organized labour and organized employers in the specific economic sector that the SETA is responsible for. The SETAs are responsible for overseeing education and training in the sector through mechanisms such as a sector skills plan, and the establishment of structured learning programmes.

the bulk water sector⁶ was shifted as an area of responsibility to the Energy SETA in 2005 (LGSETA, 2006: 3). The LGSETA has, however, continued to deal with training in water-related services which fall within the jurisdiction of municipalities, such as water purification and the water reticulation system⁷. The LGSETA is responsible for establishing a sector skills plan, based on the workplace skills plans submitted to it by all municipalities, as well as establishing learnerships, skills programmes and apprenticeships (LGSETA, 2007: 8). The LGSETA currently has 19 registered learnerships (LGSETA, 2007: 9). It is only in the last few years that three learnerships for water services have been established, all three at NQF level 2. They are “water purification process operations”, “wastewater process operations”, and “water reticulation services” (LGSETA, 2007: 9).

5. CONCLUSION

This chapter has sketched the context of local government restructuring in South Africa over the past 15 years, locating the approach taken in this restructuring process to trends evident in international restructuring of the public sector. It has focused in particular on the notion of the public sector as a ‘learning organisation’ and how this has found expression in local government in South Africa.

In particular I have sought evidence of a focus on the learning of workers at the front-line of service delivery, and how this is being incorporated into the conceptualisation of local government as a learning organisation. From the documentary evidence I was able to access it seems that front-line service delivery workers are largely absent from any conceptualisation of local government as a learning organisation, except in brief passing references. The

⁶ The bulk water sector largely consists of the Water Boards, whose main responsibility is storing and transporting bulk water to municipalities.

⁷ Water purification takes place in an operating plant which processes water so that it is drinkable and can then be transported via the reticulation system, which is a network of pipes, to tap.

focus is, instead, on learning experiences of senior management and political leaders, and on developing 'best practice'.

In the next chapter I will develop my conceptual framework by focusing on the literature on workplace learning, and in particular the literature that foregrounds workers informal learning.

6. STRUCTURE OF THE DISSERTATION

Below I provide an outline of how the rest of this dissertation is structured.

In **Chapter 2** I focus on the conceptual framework that will inform my analysis. The chapter is structured around four key questions that operationalize my research aims, and concludes by identifying important themes that have emerged that will inform the analysis of my empirical data.

In **Chapter 3** I discuss the methodological approach I adopted and the methods of data collection that I used. I also discuss the process of data analysis and presentation as well as the ethics of my research and possible limitations.

In **Chapter 4** I set out an initial analysis of my data, structured around the same four questions that shaped chapter two.

Chapter 5 seeks to deepen the analysis presented in chapter four. It is structured around four cross-cutting themes that emerged out of both my conceptual framework and my data.

CHAPTER 2: CONCEPTUAL FRAMEWORK

1. INTRODUCTION

As shown in the previous chapter, the shifts internationally to neo-liberalism since the 1970s/1980s have resulted in privatisation, commodification of public services and the commercialisation of state organs, both at a national and local level. These same trends are reflected in local government in South Africa.

An integral part of the shift towards neo-liberalism has been changes in the approach to education, including the education, training and learning in the workplace. As Colley, Hodkinson and Malcolm argue, the shift to neo-liberalism brought with it the “marketization of learning” (2006: 66). In terms of the dominant ideology, education is no longer seen as a right but as yet another commodity that has to be bought and sold on the open market. It is no longer valued for itself, but for its economic value to the needs of the global capitalist market, and also as a source of profit in itself.

Companies increasingly characterise themselves as ‘learning organisations’ within a ‘knowledge economy’, with the emphasis on using workplace knowledge to remain competitive.

It is ‘soft’ processes like innovation, competence and learning which are claimed to create economic competitiveness, whether at the enterprise level or that of the nation (Mulcahy, 2000: 219).

As shown in the previous chapter the notions of businesses and workplaces being ‘learning organisations’ have now also migrated from the private sector into the public sector.

With the commodification of learning and knowledge, and the importance attached to knowledge for the competitiveness of a company, it is not surprising

that in the last ten to fifteen years there has been an increased focus on workplace learning, both formal and informal, and theorization about workplace learning (Fenwick, 2001: 3).

I draw on a body of workplace learning literature that critiques an economic, instrumentalist view of workplace learning and knowledge (Fuller, Munro and Rainbird, 2004: 3). This approach to workplace learning recognizes that the “rosy democratic vision [of post-Fordist rhetoric] often conceals unchanged power structures and divisions of labour” (Fenwick, 2001: 5). For many of these writers, a focus on workplace learning should involve a more social orientation to learning and should be about enabling “more life-giving, democratic, and productive workplace learning environments and education” (Fenwick, 2001: 3).

Many writers (Boud, 2006; Fuller, Munro and Rainbird, 2004; Garrick, 1998) have argued for the need to go beyond the narrow limitations of focusing on the economic benefits of workplace learning, competency-standards, accreditation, and codifying informal learning. As Boud (2006) argues, a narrow focus on accreditation and formalizing workplace learning can result in the learning that does take place in the workplace being “distract[ed] from and destroy[ed]” (2006: 88).

It is within the tradition of understanding workplace learning “as a socially situated process” (Fuller, Munro and Rainbird, 2004: 8) rather than within an instrumentalist view of workplace learning, that I have located this research.

2. KEY ISSUES IN WORKPLACE LEARNING

As I indicated in the introductory chapter, my research focuses on informal learning among workers in a municipal workforce and it is from the literature dealing with informal workplace learning that I have drawn in order to identify the key issues and concepts that will inform my research.

There is a wide variety of definitions used to describe formal, informal and non-formal learning within this literature (Colley, Hodkinson and Malcolm, 2006). Billett (2004: 118) argues against fitting workplace learning into neat categories of formal or informal. Rather, most learning situations have elements of both informal and formal learning. Billett (2004) argues that if learning is defined as formal it is assumed to be more 'meaningful' and therefore to have more value, whereas learning defined as informal is presumed not to be open to interventions which can make it more effective. As he argues, learning does not have to happen in a formal institution, or through formal instruction for it be "highly structured" (2004: 119).

Colley, Hodkinson and Malcolm (2006) concur with this approach of not pigeon holing learning into discrete categories. Where Billett (2004) is highlighting the reality that much workplace learning is structured, even if it is not institutionalized, Colley, Hodkinson and Malcolm (2006) argue that trying to pigeon hole learning can result in a situation where researchers "ignore the social structures and covert formalities of power relations that exist in community and workplace settings" (2006: 60).

Fenwick (2006) is also critical of defining formal and informal learning as two completely different entities, pointing out that the formal/informal binary aligns with the mind/body binary that often underpins the approach to experiential learning. The same critique would apply to both binaries – that by setting up such a binary, learning becomes stripped from context and "embeddedness in the material and social conditions that produced that knowledge" (Fenwick, 2006: 43).

Colley, Hodkinson and Malcolm (2003) make an argument for learning to be understood in terms of the balance between formal and informal elements in a learning situation, "for informal and formal attributes are present and interrelated,

whether we will it so or not. The challenge is ... to recognise and identify them, and understand the implications of the particular balance or interrelationship in each case” (Colley, Hodkinson and Malcolm, 2003: 64).

In expanding on their argument they make a number of claims about learning situations. Among these claims are that the balance between, and interrelatedness of formality and informality present in all learning situations shapes how effective the learning is in a particular situation; that learning must be understood as happening in a particular context; and that issues of power and oppression must be taken into account when unpacking the learning that is taking place within that context (Colley, Hodkinson and Malcolm, 2003: 65).

The issues that Colley, Hodkinson and Malcolm (2003) have identified as important in developing an understanding of learning dovetail with the issues that have informed my research questions, namely:

- What knowledge is acquired through informal learning at the workplace?
- How does learning take place?
- What is the context of learning, ie. where and when does learning take place?
- What are the power relations involved in the learning process?

The rest of the chapter is structured around these four key questions.

3. WHAT KNOWLEDGE IS ACQUIRED AND VALUED IN THE WORKPLACE?

Barnett (2000: 16) makes the point that knowledge is socially determined and what is regarded as valid knowledge depends on the particular social, political, and cultural context of the time. He goes on to argue that in the 21st century we are seeing a shift from ‘knowledge as contemplation’ to ‘knowledge as action’, with the result that working knowledge, in other words, knowledge produced in

the workplace, is becoming increasingly important. However, it is important to note that in the context of a capitalist system, the working knowledge that is produced is that which is “orientated towards production, profit and growth” (Barnett 2000: 16).

Boud and Middleton (2003: 198) have identified three important areas of knowledge gained in the workplace. These are:

- mastery of organisational processes
- negotiating the political
- dealing with the atypical.

Mastery of organisational process refers to the acquisition of knowledge to deal with ongoing, routine work tasks. It involves knowing how to do the actual work. Negotiating the political refers to the ability to deal with workplace relations and power dynamics within the workplace. Dealing with the atypical involves dealing with non-routine tasks, solving problems, overcoming obstacles.

Some of this knowledge, particularly that involved in mastering organisational processes, involves concrete skills and regular routines. However, much of the knowledge, particularly in relation to negotiating the political and dealing with the atypical, is tacit in nature. In other words, it is “knowledge ... gained in situ, through interactions not with propositions, theories or formally expressed facts about the world, but in direct engagements with the world in particular settings as they arise, especially in the domain of work” (Barnett, 2000: 17). Experiential theorists like Schön (1996) talk about knowing-in-action – in other words, the knowledge or common sense that is implicit in our day-to-day reactions to situations and the way that we deal with them.

This emphasis on the important role of tacit knowledge was expounded by Lave and Wenger (1991) with their development of the situated learning theory. They argue that much of the knowledge that is acquired in a community of practice by

newcomers is not the concrete skills and abilities needed to do the job, but knowledge about attitudes, identities and objects of the community of practice. For Lave and Wenger, the process of becoming a full participant in a 'sociocultural practice' is more important than learning 'knowledgeable skills' (Lave and Wenger, 1991: 29).

Schugurensky argues that informal learning "usually results in tacit knowledge" (2006: [2]). In other words, the very nature of informal learning, which is not organised, has no set curriculum, and no set textbooks, lends itself to learning in a less conscious way, or as Gamble articulates it, through "modelling rather than explicit verbal instruction" (2001: 186).

Livingstone and Sawchuk point to the importance of tacit knowledge in the workplace, arguing that it is often workers' informal and tacit knowledge that is "heavily relied on to actually run paid workplace" (Livingstone and Sawchuk, 2005: 2). Webster and Leger (1992: 63), in a study of black mineworkers in South Africa highlighted this by pointing to the tacit safety knowledge of black miners. This knowledge is learnt informally, from fellow workers, and is tacit in nature, but is absolutely essential in contributing to the safety of the black miners.

Despite the prevalence and importance of informal learning in the workplace, writers such as Livingstone and Sawchuk (cited in Cooper and Walters, 2009), and Grossman (2009) have highlighted that this knowledge is seldom valued by management. Instead of the "rich curriculum of experience" (Cooper and Walters, 2009: xvi) being recognized, much of it is "denied, suppressed, degraded or diverted" (Livingstone and Sawchuk, 2005:2).

Many workers end up being underemployed (Livingstone and Sawchuk, cited in Cooper and Walters, 2009: xv) because their skills and knowledge are not recognized, with those lower in the job hierarchy, with consequent little power, the least likely to have their knowledge recognized (Livingstone, 2001: 311).

Societal inequalities, namely “class, urban-rural divides, gender and cultural inequalities” (Cooper and Walters: 2009, xv) are replicated in ‘hierarchies of knowledge’ (Grossman, 2009: 208) with the result that ‘everyday knowledge’ (Grossman, 2009: 215) and much informal learning, is marginalised.

In emphasizing the role of tacit knowledge in the workplace, it is important not to forget that learning of more specialized skills also happens. Gamble (2001) unpacks craft pedagogy to show how tacit knowledge and specialised knowledge fit together, and how both kinds of knowledge are transmitted through a largely tacit process.

4. HOW LEARNING HAPPENS IN THE WORKPLACE

This section will focus on three perspectives on how learning happens in the workplace: experiential learning, co-emergent learning and situated learning. All three perspectives provide useful insights into the learning process, although all three also have shortcomings.

4.1. Experiential learning

According to theorists such as Kolb (1993) and Schön (1996), learning takes place through active reflection on concrete experience with the learner’s reflection on his/her experience mediated through the meaning and knowledge that she/he brings into the concrete situation. “Experiential learning is the central process of human adaptation to the social and physical environment” (Kolb, 1993: 148). Understanding learning through an experiential learning lens allows us to emphasise that “local, particular and embodied” learning, as opposed to expert knowledge and claims of “universal validity”, is valid and important (Fenwick, 2006: 42).

Where Kolb (1993) focuses on learning in specifically educational contexts and emphasises learning through reflection on experience *after* the experience,

Schön (1996) focuses more on learning in the workplace and emphasises learning through reflection in the *midst* of experience. Schön (1996) develops his approach to experiential learning through critiquing the technical rationality model of learning, which emphasises a fixed body of specialised knowledge which must be acquired before it can be 'applied' in practice. In contrast, Schön argues for learning to be understood not only as reflection-on-action, but also as reflection-in-action.

The experiential model of learning has important insights into how learning takes place, and how knowledge is acquired. It foregrounds the importance of experience in the learning process, and how the experience is mediated both by the experience and meaning the learner brings into the situation, and by their reflection on the concrete experience.

However, numerous critiques have been made of this model of learning. These include critiques of the emphasis on the individual in the learning process at the expense of understanding workplace learning in a broader organizational context (Fuller, Munro and Rainbird, 2004: 3); and the problem of seeing learning in binary terms, in other words, sharp separations between mind and body, formal and informal, theoretical and practical and so on (Fenwick, 2006; Michelson, 1998).

4.2. Co-emergent learning

Fenwick (2006), while critiquing experiential learning, argues against any wholesale abandonment of the 'experiential learning discourse', and instead argues for an approach she calls co-emergence.

Co-emergence refers to the interaction between people, actions, systems, and objects. It recognizes learning as "woven into fully embodied nets of ongoing action, invention, social relations and history in complex systems" (Fenwick, 2006: 48). In other words, learning takes place through the experience of acting

in a concrete context, where both the experience and the action are mediated by what the learner and others bring into the situation, the complex interactions that occur between the people in the situation, and the environment in which they are operating.

This perspective makes an important contribution to understanding learning in the workplace because it emphasises that workers' learning not only happens in individuals, but also happens through a dynamic process of action and interaction within a particular complex system, between people and the environment around them. Fenwick gives the example of safety knowledge in a workplace:

Experiential learning emerges and circulates through exchanges among both human and non-human elements in a net of action. The foreman negotiates the language of the assessment report with the industrial inspector, the equipment embeds a history of use possibilities and constraints, deadlines and weather conditions pressure a particular job, and workers adapt a tool or safety procedure for particular problems, depending on who is watching. No actor has an essential self outside a given network: nothing is given in the order of things, but performs itself into existence (Fenwick, 2006: 48).

One of the insights afforded by understanding learning through a co-emergent framework is the importance of listening to experience. At the same time, Fenwick points out that understanding learning as happening through complex systems does not “erase pedagogy or dissolve political commitments” (2006: 54). In other words, formal educational interventions do still have a role to play in workplace education.

4.3. Situated Learning

Lave and Wenger (1991) were instrumental in moving the field of workplace learning away from a focus on the individual, to understanding workplace learning as a social activity that takes place in a particular working environment.

Today, much of the writing on workplace learning draws on, or at least takes as its starting point, the work of situated learning theorists to explore and understand the 'social and collective' nature of learning in the workplace (Fuller, Munro and Rainbird, 2004: 4). Within this framework, learning happens not only on a personal level, but also as people are engaged in activities within a community of practice (Fenwick, 2001: 6), with a community of practice 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 and Wenger, 1991: 98).

In a situated learning paradigm, learning happens through participation. A worker learns to do the work while engaged in the actual work process. New workers start off at the periphery of a community of practice, and learn by watching and observing 'old timers'. As new workers gradually acquire the expertise and skills to do the job, they move from 'legitimate peripheral participation' to full participation in the community of practice (Lave and Wenger, 1991).

Gamble (2001) highlights the importance of modelling as a way of transmitting tacit knowledge. By this she means the way in which the master shows a new worker how to do a job by her/his body posture, her/his way of holding and using tools, and the sequence of carrying out smaller tasks within a bigger job. Knowledge about how to do the job is "embodied practice" (Gamble, 2001: 192).

She argues that what is being modelled is 'invisible', or tacit, in that it can't be verbally articulated, written down and codified. The apprentice is learning by watching and copying, and in this process, the apprentice is not always consciously aware of what they are copying, or in what ways they are emulating the master. It is knowledge that can "only be 'caught' and not 'formally taught'" (Gamble, 2001: 191). The apprentices in Gamble's research talk about "stealing with the eyes" (2001: 198) as a way of indicating they can only learn by watching.

As Gamble puts it:

the master models the mutual judgements of hand and eye particular to the craft and the apprentice, while working at a bench and performing any of a number of technical steps, continually observes the master's judgement of original and subsequent efforts (Gamble, 2001: 198).

4.4. Generating new knowledge

One of the critiques of Lave and Wenger's model of situated learning is that it is unable to explain how change occurs in a community of practice and how new knowledge is generated. Lave and Wenger's exposition of learning in the workplace focuses very much on how existing knowledge and practice is passed on, and it sees change in the community of practice as happening in a slow, evolutionary way (Guile and Young, 1998). Billett argues that communities of practice tend to be conservative, and focus more on "protect[ing] and recycle[ing] their knowledge, not critically challeng[ing] and extend[ing] it" (Billett, cited in Fenwick, 2001: 7). This can result not only in no, or limited new learning taking place, but also in incorrect practices, techniques and ideas being passed on to newcomers.

How then can we understand the process of how new knowledge is generated?

For experiential learning theorists such as Kolb (1993) new knowledge is generated out of intrapersonal conflict – the conflict between the learners' existing knowledge, and what they are experiencing. This conflict forces a process of reflection which generates new knowledge (Kolb, 1993: 147). Kolb talks about "new knowledge, skills, or attitudes" being "achieved through confrontation among four modes of experiential learning" – concrete experience, reflective observation, abstract conceptualisation and active experimentation (1993: 148).

Kolb (1993) argues that one of the implications of viewing learning as experientially based, is to see knowledge as something that is “being continuously created and recreated, not an independent entity to be acquired or transmitted” (1993: 155). In other words, even when a learner is being taught a specific body of knowledge, such as how to do a particular job in a workplace, the knowledge that the learner is acquiring is changed by what the learner brings to the situation and her/his reflection on that situation.

Guile and Young (1998), in exploring the question of how new knowledge is created and practices in the workplace changed, in other words, how workplace pedagogy can move beyond the tacit and become expansive learning, draw on Engeström’s notion of transformatory learning. They emphasise the role of the ‘learners’ themselves in transforming existing communities of practice through their ability “to identify contradictions or puzzles within their existing knowledge or workplace practices” (Guile and Young, 1998: 9) which then leads them to new learning. As internal contradictions in the workplace build up, those directly involved in the work develop new knowledge and new learning to deal with the contradictions and problems.

However, the shift from acquiring knowledge, to developing new knowledge requires learners/workers to draw on an external context and set of concepts. Engeström (cited in Guile and Young, 1998) identifies two conditions which he argues must be met in order for new learning to happen. He argues that the learner/worker needs freedom to “question, criticise or reject some aspects of accepted practice and existing wisdom” (Guile and Young, 1998: 10).

He also argues that learners must be aware of the broader organizational and community context, and not just the specific community of practice they are operating in, so that concepts, technologies and ideas external to the community of practice can be drawn upon. This allows the learners/workers to locate

contradictions and puzzles within their community of practice within a much broader context, and in attempting to deal with these puzzles, develop new learning. Fuller, Munro and Rainbird (2004: 3) concur with this, arguing that workers' learning will be limited if they are not able to draw on theoretical and scientific contexts and 'underpinning knowledge' which might not be accessible to them directly on the job. Drawing on their research into the Modern Apprenticeship system in the United Kingdom, Fuller and Unwin note the "pedagogical value of incorporating coherently planned on- and off-the-job learning experiences" (2003: 410).

However, as I noted in the introduction to this chapter, writers such as Boud (2006) and Garrick (1998) have cautioned against the whole scale formalizing of workplace learning. Garrick (1998: 52) argues that this shift has affected what is regarded as valid knowledge.

5. THE CONTEXT OF LEARNING

Learning is not the primary focus of the workplace, but it is a necessary process in order for the work to be carried out. It is often difficult to separate out where learning begins and ends in the workplace. As Boud puts it, learning "takes place continuously, at workstations, in tearooms, in conversations in transit, whether it is sanctioned as part of work or not" (2006: 79). In other words, learning is embedded in work.

The work context, power relations and organisation of the workplace has a profound impact on the learning that takes place and the knowledge that is acquired and valued. As Fuller, Munro and Rainbird argue, "the character of the learning environment is not fixed but is an outcome of the changing relationship between organizational factors, social relations and individual agency" (Fuller, Munro and Rainbird, 2004: 8).

In other words, the nature of the workplace, the way that the work process is organized, the relationship between employees and employer, the relationship between general workers and supervisory staff, the opportunities for progression; all impact on what learning takes place, how, when, and very importantly, the value that is ascribed to that learning. In addition, the ethos of the workplace, which includes the extent to which difference and diversity are recognized, shape what is regarded as valid knowledge in the workplace (Fenwick, 2001: 8).

Fuller, Munro and Rainbird point out that “those employees whose knowledge and skills remain tacit are more likely to have their competence underestimated and their contribution to the organization undervalued” (2004:3). It is likely, I would argue, that workers at the lower levels of the grading system in a workplace, such as general workers, rely heavily on tacit knowledge, and therefore are more prone to have their knowledge and competence undervalued.

6. POWER RELATIONS IN THE LEARNING PROCESS

6.1. The role of the ‘master’ as the authority over knowledge

In expounding their theory of situated learning, Lave and Wenger (1991) draw on empirical data from various apprenticeships. In arguing that it was their location in a community of practice that moved newcomers to a situation of mastery, Lave and Wenger downplay the hierarchical, ‘expert’ role of the master: “mastery resides not in the master but in the organization of the community of practice of which the master is a part” (Lave and Wenger, 1991: 94). They emphasise that learning happens because of the collective learning process, in other words, “intricate structuring of a community’s learning resources” (Lave and Wenger, 1991: 94), rather than through a process of the master teaching newcomers in a hierarchical relationship.

Gamble (2001) has argued that this ‘equalising’ theory of learning runs the danger of leaving out a key component of how specialised knowledge is learnt.

She argues that in fact the asymmetrical relationship between master and apprentice and the transmission of knowledge is an essential part of the pedagogy of craft knowledge (Gamble, 2001: 198). For her, modern apprenticeships, within which category she includes learnerships introduced into South Africa over the last 10 years, with their emphasis on 'acquisition pedagogy', can result in "'mastery' forever elud[ing] the self-directed, lifelong learner" (Gamble, 2001: 198). In modern apprenticeships, the emphasis is on the learner 'acquiring' knowledge themselves, albeit with the assistance of modules, courses, work experience and so on; whereas in traditional apprenticeships the emphasis is much more on transmission – in other words, an expert passing down expert knowledge and a particular identity to the learner.

Gamble (2001) is pointing to the importance of recognizing power dynamics within the work/learning situation, and within those power dynamics recognizing where authority over knowledge resides. In her empirical study, authority lies squarely with the 'master', who - through a process of modelling - transmits (largely tacit) knowledge to apprentices. Thus she emphasises the pedagogical importance of the 'master' or senior worker. In doing this, I would argue that Gamble does not sufficiently critique the power relations inherent in such a learning situation, nor explore the implications of these power relations for workers.

6.2. Impact of workplace power relations on learning

Writers such as Fuller, Munro and Rainbird (2004) have critiqued Lave and Wenger (1991) for not sufficiently acknowledging power relations in a community of practice. They argue that those "whose institutional position is weak, such as part-time workers, those with few if any educational qualifications, and those located at the bottom end of the organizational hierarchy" (Fuller, Munro and Rainbird, 2004: 10) have much more limited access to learning opportunities in the workplace, or to having their learning acknowledged and valued.

Billet (2004: 116) identifies issues such as gender, race, language, status of the worker, and access to relevant cliques as factors shaping opportunities or barriers to learning.

Fenwick highlights the importance of understanding the cultural context of learning in the workplace and its impact on who has access to learning or not. She cites the question, “what cultural capital in this workplace is accorded dominant status, and which group invests in it?” (Fenwick, 2001: 9).

7. CONCLUSION

I have structured this chapter around the four key questions that informed my research aims. Emerging out of the discussion of these four questions, a number of themes and concepts have been identified which will be drawn upon in analysing my data.

In this chapter I have pointed to some of the literature, such as that of the situated learning theorists (Lave and Wenger, 1991), which emphasizes the centrality and importance of informal learning in the workplace. Learning in a community of practice is a key concept that I will draw on in analysing my data. While they emphasise the collective nature of learning, Lave and Wenger (1991) tend to ignore power relations, their impact on the learning process and who has access to that learning.

Gamble (2001), in contrast to those such as Billet (2004), who argue for the impact of power dynamics in learning situations to be addressed, emphasises the role of the ‘master’ in ensuring learners acquire mastery. Gamble is useful in that she highlights the role of ‘modelling’ in the learning process. Writers such as Livingstone and Sawchuk (2005), Grossman (2009), Schugurensky (2006) and Webster and Leger (1992) affirm the importance of tacit knowledge and the tacit

form of learning that happens in the workplace, while at the time noting that this knowledge is often marginalised and undervalued.

Fenwick's (2006) exposition of 'co-emergent' learning is useful in emphasising that learning happens in a specific context, as part of a whole system, which impacts profoundly on the learning process. This approach incorporates the important insight from theorists such Kolb (1993) and Schön (1996), that learning is an experiential process.

If learning is to be understood as a process within a context, then it is important to interrogate the broader societal context, as well as the specific workplace context, and their impact on the learning process. For writers such as Guile and Young (1998) and Fuller, Munro and Rainbird (2004), the ability of workers to draw on an external context and set of concepts is essential if transformatory learning is to take place. This might involve combining formal and informal learning, although writers such as Garrick (1998) have raised some of the dangers of formalizing informal learning.

Having highlighted the key themes that emerged out of this chapter, I turn, in the next chapter, to an explanation of how I conducted my empirical research.

CHAPTER 3: METHODOLOGY

1. INTRODUCTION

My research focused on workers' informal learning at work. As explained in Chapter 1, my own work experience led to my interest in focusing on informal learning in the public sector, and more specifically in a municipality.

This chapter focuses on key areas related to the methodology of my research. Firstly I look at the question of research design and why I chose to gather my data via a case study. Following this, I focus on the specific case study I identified for my research, outlining the basis for my choice and how I achieved access, and providing a short profile of the workplace. This profile informs my subsequent discussion of data collection methods and selection of research subjects. I then go on to outline my approach to analysing my data, how it is presented in this dissertation, and issues of reflexivity and ethics I needed to consider in conducting my research. Finally I highlight some of the limitations of this research.

2. RESEARCH DESIGN

According to Yin, a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2003: 13). It seemed appropriate, therefore, to adopt a case study approach when the phenomenon I wished to study was informal learning that is an integral part of the day-to-day work process. It was also appropriate to make use of a case study because my interest was in exploring detail and depth in a specific context, and trying to understand the systems, people and infrastructure working together as a coherent whole. The advantage of a case study approach is that it allows the researcher to focus in more detail on real events, and to “test views

directly in relation to phenomena as they unfold in practice” (Flyvbjerg, 2006: 235).

I focused on a single case study rather than on multiple case studies because, given the limited scope of my dissertation, and the time available to do it in, I chose to prioritise exploring one context in-depth.

3. SITE FOR DATA COLLECTION AND GAINING ACCESS

My case study was a water depot in the City of Cape Town. A key reason for this my choice was pragmatic, and had to do with access. Although my role in SAMWU has a national focus, I wanted to focus on a local case study in order to ensure ongoing access for data gathering⁸. I therefore turned to SAMWU members and officials working out of the Cape Town metropolitan branch office in order to help me identify a local site.

My first step in locating a local site was to explore different possibilities with the chair of the Cape Town metropolitan branch, who is a full-time shopsteward and qualified plumber. He directed me to the site I ultimately choose as my case study, Hillstar water depot. There were two main reasons for this choice:

- He could facilitate my access to the depot, as it was his former workplace.
- The depot has a long history, first as a water depot for the old Cape Town City, and now as a water depot for the City of Cape Town. This would allow me to develop a sense of how processes of learning have changed over time.

The full-time shopsteward directed me to an initial interview with the District Manager for Water and Sanitation in the City of Cape Town. This interview served two purposes. Firstly, I obtained his permission to approach the depot directly for my data collection. Secondly, I was able to gain useful background information on history and work process of the depot.

⁸ The office I work from is located in Cape Town.

I then made contact with the Depot Manager of the Hillstar depot. I had a short interview with him, which mainly focused on gaining his permission to observe the depot teams at work and interview the workers.

4. PROFILE OF THE CASE: HILLSTAR DEPOT

Hillstar is one of eight water depots for the City of Cape Town. It is responsible for maintaining and operating the reticulation system in three City of Cape Town districts (about a third of the city) (DisM⁹).

The water depot moved to Hillstar from Albion Springs, Newlands in September 1986 (DepM). Until 1996, when, through the restructuring process, Cape Town became one of six subcouncils in the City of Cape Town, Hillstar was the main water depot for the then-City of Cape Town. As such, it was well-resourced and effective at delivering services in the largely 'white', middle class areas of Cape Town. Today it still has a legacy of being a well-resourced depot. "Hillstar is considered to be a major resource centre for the city" (DisM)

4.1. Profile of the work process

In order to understand the learning process as it unfolds in a specific work context, it is necessary to paint a picture of the work process itself.

There are five categories of operational teams at Hillstar, with each team representing a different level of response to maintaining the water reticulation system. The first level response teams are the **distribution control teams**, also known as the turncocks. Turncocks are the first team to respond to complaints or problems:

⁹ The convention I have adopted for referencing my respondents is explained in section 7 of this chapter. It is also set out in appendix 1.

Our job is to assess the situation. We're called to situations such as burst pipes in meter, burst pipe in road. We might find water seeping into a property. We then decide who needs to go out and sort out the problem – maintenance, plumbing or mains laying – depending on the size of the job (Turncock).

Apart from responding to emergencies and callouts, the core of their work is shutting down the water mains and turning the water back on again, involving some skill (DepM); and checking the water pressure readers, situated in steel boxes in the street. These readers record the water pressure in that area for each 24 hour period.

The second level response teams are the **distribution maintenance teams (DM teams)**, who are responsible for handling small jobs. For instance, they deal with minor leaking pipes or small burst pipes, up to a diameter of 50mm, replacing meter washers, installing new meters and renewing valves and hydrants. They also carry out tasks such as plating the poles¹⁰. Their work largely focuses around the meter which connects the municipal water supply and a private household or business.

The third level response teams are the **plumbing teams**, who deal with more complex jobs, and handle bigger size pipes, up to a diameter of 225mm. They deal with such things as connections to the mains at new building sites, moving meters outside properties, checking water pressure problems, and fixing burst pipes. Their work focuses on the pipes which run from the main water pipes to the household or business.

The mainlaying teams deal with the mains pipes, in other words, the large network of pipes that carry water across the city. Their job is to replace or lay these pipes, which have a diameter greater than 225mm. Unlike the other teams, who generally do a number of jobs in one day, the mainlaying teams work in one

¹⁰ Plating the poles involves fixing a small steel plate to a street pole. The plate uses symbols and numbers to indicate where the nearest fire hydrant is, and where the valves on the mains are.

particular area for a number of days. They set up 'camp', which is left over night in the charge of a security guard, and consists of caravans or huts which house the tools, equipment, materials and workers' belongings that will be needed for the duration of the job.

All four of the teams outlined above are involved in ongoing maintenance work, but also respond to emergencies and specific problems in the maintenance network.

The last category of teams is the **non-payment teams**, who are responsible for dealing with water users in the City who are in arrears with their water accounts. They carry out disconnections and restrictions to the water supply, as well as reconnections¹¹. Some of their work does overlap with that of the DM teams in that they clean hydrants and valves, locate meters, and install new meters and temporary taps when needed.

4.2. Profile of job hierarchy

There are a number of job designations at Hillstar, arranged in a hierarchy of positions. Each job designation has a particular set of tasks and jobs that are allocated to it. Roughly they are:

- Labourer: regarded as unskilled work, and involves digging trenches and other manual work;
- Labourer leading hand: regarded as semi-skilled work, and involves handing tools to the plumber and working with the spanners;
- Handyman: regarded as semi-skilled work, with workers allowed to do certain work under supervision, such as laying the pipes;

¹¹ In the context of poverty, lack of access to services, and vast inequalities, disconnections and restrictions imposed because of non-payment is a highly politicised issue in working class communities.

- Senior handyman or plumber's mate. regarded as a skilled position. If the foreman is not around, the senior handyman takes over, being responsible for making sure "that the work gets done" (P1(W));
- Operational foreman: this is a skilled position. On the plumbing trucks this position is generally held by a qualified plumber, but it is possible to be a foreman without being a qualified plumber;
- Superintendent: this is a skilled position, based in the depot rather than in one of the teams, and involves managerial oversight of and control over one of the category of operational teams. So for instance, there is one supervisor for the DM teams, another for the plumbing teams. The superintendent is responsible for tasks such as allocating jobs for the day and monitoring work done.

4.3. Profile of workforce

Hillstar is one of the largest water depots in the City of Cape Town, with about 400 workers (DisM). Almost the entire operational workforce is male, with female workers concentrated in the administrative section¹². It is only since 2008 that women have been employed to go 'out on the road'. At the time of the research there was only one female foreman, recently appointed, on a non-payment team.

The workforce is predominantly 'coloured', reflecting a history of the Western Cape being a 'Coloured Labour Preference Area' under the apartheid government. There has been a conscious attempt to shift this demographic over the last fifteen years, to come more in line with South Africa's broader societal demographics by appointing more 'African' workers (DisM).

Until about the beginning of 2008, Hillstar had a fairly stable workforce and the majority of workers had been there for a number of years. Many of them had

¹² Traditionally in South Africa the municipal workforce has been male dominated, with women only employed in typical 'female' posts such as librarians, administrative staff and nurses. Manual or 'blue collar' workers have generally always been male. It is only recently that this has started to shift, although the extent of the shift is unknown.

moved over from the Albion Springs depot and now have between 20 and 30 years experience on the job. Many of those who started off as labourers in the 1980s are now handymen, senior handymen, and in some cases have progressed to foreman or superintendent.

The City of Cape Town Water Services Development Plan notes that there has been a delay in finalising the staffing levels for water services, which, they acknowledge, has affected workers' morale; and there has, at the same time, "been a significant loss of staff as part of the City's strategy to reduce the staff levels through natural attrition"¹³ (City of Cape Town, 2007: 172).

4.4. Profile of trade unions

There are two trade unions at Hillstar: the South African Municipal Workers Union (SAMWU), which is affiliated to the Congress of South African Trade Unions (COSATU), and the Independent Municipal and Allied Trade Union (IMATU), which is affiliated to the Federation of Unions of South Africa (FEDUSA). Until a few years ago, SAMWU members were in the majority but today IMATU has a majority.

While SAMWU comes from a more militant tradition, IMATU, as Cooper argues, has "a more conservative history and membership base amongst 'white collar' workers and management" (Cooper, 2005: 26). Although SAMWU has traditionally organised 'blue collar' workers, this is now beginning to shift as more 'white collar' workers are recruited into its ranks¹⁴.

¹³ As part of the restructuring of the City of Cape Town, staff levels were reduced from 28 000 to 23 000 (City of Cape Town, 2006/2007: pg no) This can be understood in the context of the trend towards the corporatisation of many of the services in the City of Cape Town, as well as "considerable outsourcing and (sub)contracting of water and sanitation services through the city" (McDonald, 2008: 203).

¹⁴ Evidence for this is anecdotal, as there are no statistics to substantiate it.

5. DATA COLLECTION

In this section I discuss the data collection methods I used and identify my research sample.

5.1. Choice of data collection methods

I wanted to uncover workers' learning on the job and therefore a key source of data collection was observing workers at work. Since workers are out in the field all day maintaining the water reticulations system, I needed to spend time on the trucks with the teams to see and understand the work that they do.

Observation alone, however, would not give me sufficient data to be able to analyse workers' learning. My second method therefore focused on unstructured interviews, which I conducted in the field, often in the form of a 'conversation' whenever the opportunity arose. I had to be flexible in taking advantage of every opportunity that emerged. Yin (2003) has noted that at times, in case study interviews, "the interviews will appear to be guided conversations rather than structured queries. ... although you will be pursuing a consistent line of inquiry, your actual stream of questions in a case study interview is likely to be fluid rather than rigid" (Yin, 2003: 89).

As Schugurensky (2006) points out, informal learning and tacit knowledge are very difficult to observe – they are by nature "embedded" and "taken-for-granted" (2006: 3). I spent a long time talking to workers about their work, using these 'conversations' to explore questions of how they had learnt to do their work and who had taught them.

My third data collection method involved formal, semi-structured interviews with respondents who were either office-based or who I had easy access to while they were at the depot. These interviews served to test and consolidate the data

gathered out in the field, as well as to gather additional information from respondents who were based in the office.

5.2. Research subjects

My aim was not to interview a representative sample in the workplace, but rather to explore in-depth the complexities of workplace learning from the perspective of those directly involved in it at the workplace. I chose to spend time observing teams across all five operational areas so that within one depot I could build a picture of the spectrum of work experiences. The choice of which trucks I travelled with was made by the supervisor each morning, based on which teams were ready to go, and the area that the team was going to be working in.

By the end of my field work, which took place over two months, between May and June 2008, I had spent 23 ½ hours out in the field with various teams. Time was spent with the distribution maintenance teams (DM teams); the plumbing teams, the non-payment teams and the mainlaying gangs, observing and conducting as many informal interviews as I could. I also conducted formal semi-structured interviews with two members of management, one group of foremen, one turncock (1st level response team), and the head of the City of Cape Town's water training centre. I also engaged in one case of unplanned observation at a trade union general meeting. Appendix 1 contains a summary of time spent collecting data, the people I observed and/or interviewed, and the convention I have used for referring to the respondents in this dissertation.

5.2.1. Observation and unstructured interviews in the field

I rode with the Distribution and Maintenance (referred to as DM1 and DM2 teams) and plumbing teams (referred to as P) in their trucks, moving from job to job during the day, observing how they carried out their work and engaging the workers in 'informal conversations'. Once at the site of the job I watched and made notes as the workers went about their jobs.

I did not travel around with the non-payment teams (referred to as NP1, NP2 and NP3), but was rather transported by a foreman (NP(F)) to three different sites where non-payment teams were working. I was able to conduct informal unstructured interviews with the foreman I was travelling with, as well as with the three teams we visited. I was also able to observe the three teams at work at the sites.

On the day that I went out into the field with the mainlaying gangs (referred to as ML1, ML2 and ML3) it was raining. This meant that the teams spent the day sitting in the caravan or hut waiting for the rain to stop. I was therefore able to conduct group interviews with three different teams, although I was not able to observe them directly working. I found that by the third interview I was not getting new information or insights. Rather the interview was confirming what the other gangs had said. I had reached 'saturation point' (Strauss and Corbin, 1998: 136).

I had a broad set of questions in my mind (see Appendix 2), which I had previously worked out, which I used to guide the discussions I engaged workers in. The questions were designed to uncover the actual work that workers do; how they learn to do the work and what helped and what hindered their learning. Questions also probed changes in the workplace over time and how these impacted on learning. I tried to pay heed to Yin's point that in an open-ended interview I needed to ask questions in a "friendly" and "nonthreatening" way (Yin, 2003: 90).

My main method of capturing data was through handwritten notes taken down when I was observing or talking to the workers out in the field. I realized that the workers were more comfortable and forthcoming when I did not use an audio-recorder, and in fact many times it would have been impossible to record the discussion. For instance, when I was in the truck there was too much background noise, and even out in the open it was not always easy to get clear sound.

I took notes both when we were moving between jobs in the trucks, and when we were at work sites. I tried to take the notes as unobtrusively as possible. I realized that as soon as I started taking detailed notes, the workers became more formal and less forthcoming. I therefore tended to make brief notes during the conversations and observations, which I wrote up as fully as possible afterwards.

At the end of every day I would sit down and handwrite as complete a version of all observations and informal interviews as I could, using my field notes as a guide. I found that by doing it on the same day I was able to reconstruct the discussion I had had and paint a picture of what I had seen in great detail. Writing out the initial version helped me to record a fuller version – I simply wrote as I remembered, with my memory jogged by the field notes I had made. When I typed up my notes I found I was automatically tidying up and formatting. I realized that if I had tried to type my first version I might have missed out a lot of the detail, flow and richness of what I had seen and heard.

5.2.2. Formal semi-structured interviews

I had formal semi-structured interviews with two members of management – one who was based at the Civic Centre¹⁵ (referred to as DisM), and one based at the depot itself (referred to as DepM) (see appendix 3). These interviews probed management's views on workers' informal learning and also focused on practical information. These interviews allowed for some triangulation with the field interviews and were useful in corroborating details (Yin, 2003: 99), particularly as both these members of management had started out working on the trucks themselves and were therefore familiar with the situation 'out on the road'.

I had a group interview with about ten of the Distribution and Management (DM) team foremen (referred to as DMF), before I started the process of observing in the field. It was a useful interview for two reasons. It served as an introduction to

¹⁵ The civic center is a shorthand way that municipal employees use to refer to the administrative center of the municipality. The administration is housed in the civic centre which is located in the central business district of Cape Town.

my research for the DM teams, and also allowed me to deepen my understanding of the work of the teams, and how the teams operated, before I went out into the field.

I also had an interview with one of the turncocks (first level response team) at the depot, but did not go out with any of the turncocks on their rounds. By the time I had this interview I had observed a few teams at work already and felt that I had a good idea of how the work of turncocks was done out in the field and would gain more from a more semi-structured interview than from further observation.

I had a formal interview with the head of the water training centre (referred to as DirTrain) (see appendix 4), responsible for training water and waste water workers across the City of Cape Town. This was an important interview as it allowed me to develop a picture of the formal training that existed for water workers.

For all but the interview with the head of the water training centre I took detailed notes during the interview, which I subsequently typed up. The interview with the head of the water training centre was recorded and subsequently transcribed.

5.2.3. Unplanned data collection

I observed one SAMWU general meeting. This was a regular general meeting called by the SAMWU shopsteward to report back on various union-related issues. My attendance was unplanned: I was waiting to go out on a truck on the morning that the union met, and most of the members of the team that I was to observe that day were in the meeting, so I joined them.

Through the meeting I was able to develop a sense of some of the concerns and interests of the workers, as well as some of the issues affecting their morale. It also gave me useful insight into some of the issues impacting on training and learning in the workplace and workers' responses to these.

6. DATA ANALYSIS

At the end of Section 2 of Chapter 2 I identified four questions that operationalized my research aims:

- What knowledge is acquired through informal learning at the workplace?
- How does learning take place?
- What is the context of learning, ie. where and when does learning take place?
- What are the power relations involved in the learning process?

These four questions informed my data analysis, which went through four iterative phases. Each phase refined and deepened my analysis and allowed me to move from “raw data to meaningful understanding” (O’Leary, 2004:196). The first phase took place during the field work and the other three phases took place afterwards.

During the field work, drawing on both an inductive process and my four research questions, I started to identify common themes and issues that were beginning to emerge. In this way I was already beginning the process of analysis albeit in a very tentative and rough way. The themes that began to emerge at this stage, and under which I began to group my raw data were:

- What is it that workers’ learn
- What knowledge and skills is acquired
- Workers’ experience of learning
- What allows workers to learn/conditions under which learning is possible
- Collective learning, individual rewarding
- Promotion
- Team hierarchy and formality
- Management’s attitude to workers’ informal learning
- Worker attitudes to community

- Locating Hillstar within the context of local government restructuring
- Impact of technology on learning
- Formal learning and training

I also started grouping together background information on the case study which I felt was important to help me understand the context. This included information on the history of the Hillstar depot, its area of coverage, the operational teams and support staff working out of the depot, working conditions such as hours of work and overtime, workforce demographics and profile, and trade unions that are active at the depot.

The second phase of analysis involved writing up a description of the case study. In this description I included background information as well as the data relating to the rough themes outlined above. This was a useful step to take as it helped me to consolidate all my data into one coherent overall picture.

My third phase of analysis involved a more rigorous process of examining the data in the light of the four questions that informed my research. This phase of analysis was still largely descriptive but it allowed me to prioritise and categorise my data, and consolidate the relationship between my data and the research questions. In this phase of analysis I began to relate my data back to the conceptual framework.

My final phase deepened the process of relating my data back to the theory, by drawing out key themes that cut across my data, allowing me to draw out the significance of my research.

7. DATA PRESENTATION

I have chosen to present my data in two ways. Chapter 4 draws on the empirical data to explore my four questions and draws on my third phase of analysis as

outlined in the previous section. Presenting my data in this way as a first step allows me to build up a picture of the learning processes that workers at the depot are involved in.

Chapter 5 draws on the fourth phase of analysis outlined above, and seeks to deepen the analysis by drawing out cross-cutting themes and relating them to the theory.

In quoting respondents from the teams I have used the following convention (see Appendix 1): I have indicated the team that they are part of first, and have then indicated in brackets whether they are the foreman, or a worker in the team by using the abbreviation (F) or (W). Where it is necessary to distinguish between different workers in the team, I have indicated this with a number. So for instance, the foreman of a plumbing team is referred to as (P1(F)), while a worker on the team is referred to as (P1(W1)).

When quoting respondents that I interviewed I have used the abbreviations as indicated in table 3 of Appendix 1.

8. REFLEXIVITY AND ETHICS

I was conscious from the outset that there were a number of 'social markers' which positioned me in relation to those I was researching, and which resulted in certain power relations existing, which needed to be 'surfaced' (Scott, 2000: 56), and which might have shaped what my respondents said or didn't say to me.

- I am a 'white', middle class female interacting with municipal staff in order to carry out academic research that might have little direct, immediate impact on their working lives.

- At the same time, I work for a trade union that organises workers in the municipal sector, and which many of the workers at the depot are members of.

In the light of South Africa's apartheid past, the first factor conferred on me a certain amount of power in relation to those being researched, who were largely black, working class men. This could have impacted on how they responded to me and what they told me.

The fact that I worked for SAMWU both helped me, and created potential difficulties. It helped in that it facilitated my access to the workplace. The workers had a certain level of trust in me because I came from an organisation that represented them and their interests. It also helped in that I was familiar with the local government and workplace restructuring context that the depot was located in, both at a broad level, but also at a specific municipal/depot level.

However, I was aware that my connection to SAMWU could also create some complications:

- Both management and workers might view me as representing SAMWU and workers might want to use me as a communication channel between themselves and the union office, or between themselves and management.
- There might be a tendency to confuse an academic project with a union project, with subsequent greater expectations of the outcomes of the project.

I dealt with these complications in a number of ways:

- I did not try to hide my connection to SAMWU, but explained consistently and clearly to both management and those I was interviewing/observing, that while I worked for SAMWU, I was embarking on this research as an independent academic project.

- I also made it clear that as I am based at the head office of the union, I do not have any direct contact with either the municipality or the depot in my work and I could not act as a ‘messenger’ between workers and the management.

During both the field work and data analysis phase, I remained aware that I was being informed by perspectives I had developed in my work with SAMWU.

9. GENERALIZABILITY

One of the difficulties of a case study is that of generalization. A case study is not empirically generalizable, or as Yin terms it, ‘statistically generalizable’ (2003: 32), because it is not a sample of a bigger population and therefore statistical inferences cannot be drawn from it. Rather, Yin argues that case studies should strive for ‘analytic generalizability’, which requires generalizing the findings of the case study research to a broader theory (2003: 37). In this way, the findings of a case study can “enter into the collective process of knowledge accumulation in a given field of in a society” (Flyvbjerg, 2006: 227).

Through a process of relating my findings to the broader theoretical field of workplace learning, which I undertake in Chapters 4 and 5, I aim for analytic generalizability.

10. LIMITATIONS

By the end of my field work, I realized that I had a certain level of understanding of what workers’ jobs entailed, how they had learnt to do their jobs, and how they shared knowledge among themselves. I had also developed an understanding of some of the challenges they were currently facing in terms of development and recognition of that learning.

I felt, however, that this understanding was at a fairly superficial level. The data I had gathered was what the workers were able to tell me, and what I had been able to observe in a limited time period. As Schugurensky (2006) points out, observation and 'self-reporting' cannot always be presumed to reveal the actual learning or learning process that takes place. It is not easy for workers to identify what they have learnt, and how or where it was learnt (Schugurensky, 2006: 5).

To develop a more in-depth understanding of the learning process would require months in the field with the workers, which, given the scope of my research, I was not able to spend.

In the next chapter I go on describe my case study under my four research questions.

University Of Cape Town

CHAPTER 4: FINDINGS

1. INTRODUCTION

This chapter, which sets out the findings of the research, is structured around four key questions:

- What knowledge is acquired through informal learning at the workplace?
- How does learning take place?
- What is the context of learning, ie. where and when does learning take place?
- What are the power relations involved in the learning process?

This chapter is structured around these four questions.

In this chapter, as a general rule, I cite respondents who gave me specific information, or confirmed information; the source of all other data in this chapter should be assumed to be what I observed or gathered through informal discussion.

As noted in Section 4.3 of Chapter 3, the workforce at Hillstar is predominantly male. I have therefore, in general, used the male pronoun throughout this chapter.

2. KNOWLEDGE BASE OF WORKERS

2.1. What knowledge do workers have?

Workers on the trucks learn how to maintain the water reticulation system in the area covered by the Hillstar water depot. From my observations, and discussions with workers, I identified a range of different areas in which workers gain knowledge in order to do this. These include:

- *Geographical knowledge:* Knowledge about the physical environment of different areas within the City of Cape Town, and how this impacts on the job. “The way of making a connection is much the same everywhere, but the situation on the ground might impact on how the job is done” (P2(W1)). The suburbs of Observatory or Woodstock, for instance, have largely clay terrain. This means digging is more time consuming. In an area like Athlone, however, the ground is sandy and the work is quicker.
- *Spatial knowledge:* Knowledge about the layout of the areas they work in regularly so that they are able to find the site that they have been sent to. Workers also build up a visual memory of an area where they frequently work. On the way to a job in Claremont, the plumbing team workers pointed out other building where they had done work in the immediate vicinity. Because of their previous experience in the area, they knew where the water mains lay in the road, and where the valves were. They also need to be able to ‘read’ the geography of an area and judge where underground pipes that might not be reflected on the map are located (ML3(W)).
- *Ability to read maps and interpret symbols:* The mainlaying gangs work from maps, which show the section of streets they must work in, where the intersections are, and where other pipes and cables are. The legend down the side will interpret the colours and symbols used on the map.
- *‘Reading the road’:* Understanding of traffic signals and how to secure the road so that a team can safely work in the road.
- *Knowledge of community:* Understanding dynamics of communities they work in. In the informal settlements, the teams liase with community workers a great deal (DM2). Workers are also very aware of which areas pose a potential security threat because of high crime rates (DM1).
- *Technical knowledge:* Knowledge about pipe sizes, different meters types and the various connections that go with them, different size washers, valves, hydrants and so on.

- *Procedures and systems*: Knowledge of the different procedures and systems that Hillstar has in place for maintaining the water reticulation system.
- *Ability to communicate*: While it is mostly the first level response teams that communicate with the public, all workers at some point interact with the public.
- *Basic hydrolics*: Knowledge of which way the water runs, what normal water pressure looks and feels like, how the mountainous terrain in parts of Cape Town affects the water supply and how water is delivered, and so on.
- *Text literacy*: Foremen have to be sufficiently literate to be able to fill in numerous forms, make basic calculations, read off measurements and so on.

This represents a range of different knowledge areas. Some of the knowledge is learnt explicitly, and some tacitly. For instance, I watched a team (P2) testing water pressure for a resident. The process of disconnecting the meter from the pipe might have been demonstrated and explained by a foreman or senior worker. However, my observation was that gauging visually the pressure of the water running out of the pipe, and judging whether it is running at normal pressure is tacit knowledge which can only be learnt in practice.

I observed that not all workers were familiar with all knowledge areas, but that workers within a team generally seemed to share the same knowledge despite their different job positions. For instance, all the mainlaying gang members knew how to read a map; and all the members of a plumbing team were aware of the geographic and spatial layout of an area. While workers in the lower grades at the municipal depot are often regarded as semi- or unskilled, the above list of knowledge areas shows that many of the workers do, in fact, have a strong base of knowledge that they operate from, and they develop a range of skills on the job.

From my observation, I could see that much of the work that the team does is routine, or has routine elements. I was told (FTTS) that there are a set of operational routines, procedures and systems at Hillstar which have been in place for many years. They represent the Hillstar 'standard'. They include, among other practices:

- Plating poles (see footnote 10)
- House connections (leadings) are put in at 90 degrees to the water mains.
- The stopcock is put approximately ½ metre outside the boundary.

(FTTS)

I was told that even routine work can be unpredictable, take varying amounts of time, and requiring routines to be adapted. For instance, the mainlaying gangs told me that when they need to make a t-connection in the pipes they are laying they must work out, based on the topology and physical environment they are working in, where best the t-connection should be laid. They must decide whether they are going to dig out tree roots that are in the way, or reroute the pipe. At another time, they might have to deal with bees that have taken up residence in a hydrant. A DM team must work out where a stopcock buried under the earth is so that they can switch off the water to fix a burst pipe. A plumbing team, trying to fix a pipe under pressure, must try and work out how to do it – should both connection pieces be on one pipe? Should each connection piece be on separate pipes? Will it be easier to fix the pipe under the water that has by now filled the trench that the worker is standing in?

As one worker said “you have to be a bit of a McGyver¹⁶” (P1(W)). I understood this to mean that workers have to be prepared to ‘make a plan’. In other words, the team must be able to assess the situation, draw on the experience of how other, similar situations have been dealt with, and decide on an appropriate

¹⁶ McGyver was the hero in a popular American TV show who was able to get out of difficult situations using ingenuity and resourcefulness, and whatever materials are close to hand.

course of action for the particular problem confronting them. Workers might have to try two or three possible solutions before they are able to solve the problem.

Some of the ways of 'making a plan' include time-saving and 'quick and dirty' methods that have become consolidated into regular routines over the years. These include practices such as connecting under pressure¹⁷ (P1(F); FTTS), blowing a pipe under the road¹⁸ (P1(F); FTTS), and fixing a pipe using dry ice¹⁹ (P2(F)).

It is not clear when or how these time-saving practices started – almost everyone in the DM and plumbing teams I spoke to said that they had always been around. My speculation is that they are the kind of practices that workers and foremen between them would have developed out on the road, as they sought ways of making the work easier. But it is also possible that they were introduced by a superintendent or a qualified plumber, someone who had a great deal more formal knowledge as well as concrete experience, and was able to bring these two sets of knowledge together to develop quick and easy methods.

It was not clear to me whether informal practices and 'quick tricks' had been developed and consolidated into the work routine more recently. I was not on the trucks long enough as an observer, nor did I have a deep enough knowledge of the water reticulation system, to be able to identify these practices myself. I tried to find out from workers what practices or procedures they used that they had

¹⁷ Connecting under pressure was a method that I observed in practice (P1) and involves workers fixing a broken or leaking pipe without turning off the water. Two pipes are connected while water is gushing out of the one pipe. It means that the mains don't have to be switched off, and therefore saves time, but seems to be a very difficult process. The degree of difficulty depends on the size of the pipes and the water pressure. Where possible, the workers switch on a nearby tap which is above the direction of flow, so that the water pressure in the pipes is reduced and it is easier to make the connection.

¹⁸ The practice involved pushing a copper pipe through sandy ground, from one side of the road to another. It did away with the need to dig a trench to lay the pipe in. It has now been stopped because it sometimes weakened the road structure the pipe was being blown under (P1(F)).

¹⁹ The method of fixing a pipe using dry ice means that the mains do not have to be switched off. It basically involves freezing the water in the pipe above the point where the leak or burst was, by using dry ice. The leak or burst could then be fixed without water gushing out of the pipe. This practice was stopped quite a long time ago (P1(F)).

developed themselves, but they weren't able to tell me of any. This might have been because there were none, but it is more likely that these practices evolve tacitly, and workers do not recognise their own role in evolving their everyday practice. They simply see it as 'what we do everyday'.

2.2. Is knowledge codified?

What is taught is not written down anywhere (DepM; FTTS). What needs to be known is passed on verbally and through modelling from worker to worker and from foreman to worker, and worker to foreman. Despite the fact that nothing is codified, there is a very clear set of routines and procedures which govern how the work is to be done (FTTS) and which is passed down from generation to generation of workers. I would argue that this can be construed an example of the tendency of a community of practice to be conservative and to "protect and recycle their knowledge" (Billet, cited in Fenwick, 2001: 7).

At the same time, it is important to note, as Cooper (2005) does, that the workers are embedded in an oral culture, which emerges out of the history and culture of black South Africans (2005: 235). It is therefore not surprising that workers are comfortable with communicating and sharing information verbally rather than through written text.

3. HOW LEARNING HAPPENS

3.1. Learning informally in the field

The way that the work process is structured, with workers in teams out on the road for most of the working day, means that the collective that the worker is part of plays an instrumental role in the learning process. This accords with the notion of learning through participation in a community of practice (Lave and Wenger, 1991: 98). Each of the teams at Hillstar can be regarded as a community of practice which is 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 and Wenger, 1991: 98).

Team work is vital to the work process as well as to the learning process. As one of the management respondents I interviewed said:

Workers spend hours together and depend on each other. The working conditions themselves create team dynamics as workers depend on each other. For example, a team is sent out at night in winter to fix a burst pipe. They are working in a huge hole in the dark and rain to locate and fix the burst pipe. Your safety depends on the other workers watching out for you. It is other workers who will notice if a bank is starting to collapse. Noticing things like that is not something you are formally taught, it is something you learn through experience, over time (DisM).

The importance of working as a team, and learning from each other was echoed by a worker who said:

We don't have problems with anyone keeping knowledge to themselves – we all share what we know, teach others (ML2 (W)).

Workers talk about “stealing with our eyes” (ML2(W)), which echoes the phrase used by apprentices in Gamble’s research (2001). For the workers I interviewed, “stealing with our eyes” means learning by watching the senior workers. In other words, new workers are assimilating the knowledge of the community of practice from the ‘old timers’ and in so doing, moving from legitimate peripheral participation, through “stealing with our eyes”, to full participation, which involves actually doing the work themselves.

The workers in all the teams I interviewed emphasised that it was important to move quickly from observing, to actually practicing the work. New workers were not going to learn, it was felt, unless they started trying to use the spanners themselves, or making a connection, or changing a valve. There needed to be a

rapid shift from 'modelling', ie. showing a worker how to do something, to 'doing'. Without this shift, learning was not going to happen.

The longer you take to teach a guy, the longer he'll take to learn. You need to get him to do it (NP(F)).

I watched a worker try to 'fix a pipe under pressure', where it was not possible to reduce that pressure by switching on a nearby tap. The task involved trying to bring two pipe ends together and connect them, while water was gushing out of the one pipe at high pressure. The worker struggled for about ten minutes, trying various ways of bringing the two pipes together over the gushing water, but eventually had to give up, drenched to the skin and standing in a trench of water. The worker who was struggling with the task was a younger worker, with more senior workers and the foreman standing around (at a sufficient distance so that they didn't get wet), offering advice. Afterwards one of the senior workers, a senior handyman, told me he could have done the connection, "you just had to bend the crinkle in the pipe the other way". However, he went on to say, he hadn't offered this piece of advice, because the young worker had to learn how to do it himself (P1(W)).

It seemed to me that much of the interaction among the team members involves little verbal communication, which points to the tacit nature of the process. My impression was that each one knows their role within the team and has a tacit grasp of how the different roles in the team fit together. This allows them to swap roles easily in order to complete a job. The foreman is able to rely on them doing the job with little intervention. "I can ask them to do something and they know what to do. We know how each other works" (NP3(F)).

I saw this in practice when I was out with one of the DM teams (DM1). The team consisted of the driver, the foreman, and two workers. Once we arrived at the site (a house in Mitchell's Plein) the two workers got off the truck. The foreman confirmed the job with them. Worker A communicated with the home owner while

worker B took a bucket of tools and a large sponge from the truck. He used the large sponge to soak up the water in the meter casing which had leaked out of the pipe because of the perished washer. Once the water level in the meter casing had dropped sufficiently, he turned off the water at the stopcock, undid the meter, took out the worn washer and replaced it. In the meantime, worker A scooped up the dirty water in the gutter into a bucket which he stowed neatly in the truck. Once worker B had finished changing the washer and put the meter back, worker A, without any verbal communication with worker B, asked the resident to switch on an outside tap to make sure the first water that came out didn't have dirt in it which could get into the geyser.

The two workers carried out their jobs with little verbal communication. Each knew what to do, and did it. At a later job I watched how they switched roles mid-job. While worker A had started out locating the leaking pipe, which was buried under boundary stones and a hedge, and working in the trench he then dug, worker B located and switched off the stopcock. At a later point, worker B worked in the trench and made the final connections, while worker A readied the pieces of pipes and connectors. There seemed to be no verbal communication between them before this switch of role happened. One simply moved into the other one's work – seamlessly it seemed to me, and soundlessly.

In contrast to this I watched one team that had been cobbled together with members from other teams affected by absenteeism. When we arrived at the first job, the cobbled-together team milled around the site of the job – a burst pipe – for a few minutes with no-one immediately taking the initiative to start digging, until the foreman intervened. This was in stark contrast to the team outlined above where workers immediately started working. As the foreman on this second truck said to me “it's better when it's just my team - we work better together. Now we have extra people on the team and it doesn't work so well” (P1(F)).

One foreman (NP(F)) was adamant – he would rather work with fewer workers for the day than take ‘boarders’ (workers from other teams) with him. He felt strongly that ‘boarders’ upset the team dynamics, created problems with trust, and upset the smooth working of the team because they didn’t know the style of working of the team.

My sense was that taking a new worker into the team was different – this worker was now part of the team, he/she was going to learn from the team, and adopt the ways of the team. A worker from another team on the other hand would bring that team’s style and cause confusion.

The only instance of more organised training that happens off the road that I was told about involves taking new workers to the test rig²⁰ at the back of Hillstar where they are shown the different types of meters, connections, washers and so on. This training is not routinised, but rather used in an adhoc manner when and where needed (NP(F)).

It was difficult to get a straight answer as to how long it took for workers to be regarded as fully competent in a particular job. Workers argued that “everyday is a learning experience, every day we are learning something new” (P2(W)). As one worker put it “the learning part never dries out” (ML3(W)). I was told that “one day is like one week’s experience because of the different types of tubings, fittings that you are dealing with. If you miss a day you might miss a tubing that you come across in the work that day” (NP(3)). Similar views were expressed by many of the workers.

My observation was that at Hillstar, workers are not working in a fixed, static workplace. It is a fluid, changing environment, with changing geography, weather, building density, type of community and so on. All these factors come together in

²⁰ The test rig at Hillstar is used to test meters, and as indicated, is also used to give workers some training in the various kinds of meters, washers, connections and so on that there are. There are only two accredited test rigs in the country – one at Ethekewini, and one at Hillstar (DepM).

different combinations at different times, which means that working conditions are often different, constantly throwing up new challenges and new situations. This could provide an explanation as to why workers argue that they are constantly learning new things.

However, I would argue there is the danger of workers over-exaggerating the fact that 'everyday is a learning experience'. From my observations it was clear that workers faced many different situations, but often, the work that they do is routine. For instance, I was on a DM truck that moved from site to site, in an area the team was familiar with, changing valves on meters. Different sites might have different kinds of meters, but the way that the workers approached and carried out the work was routine.

It seems more likely, I would argue, that, while 'everyday is a learning experience', there is also a great deal that is the same in the work day, with mostly standard routine procedures, in addition to occasional difficult, unique or challenging job confronting the workers. It is possible that workers over-exaggerate the ongoing learning aspects of their job as a way of protecting their jobs and the level of skills and experience necessary to do the job. It is also possible that they over-exaggerate because they thought it was what I, as the outside researcher, focusing on workplace learning, wanted to and expected to hear.

3.2. Who do workers learn from?

Within the team there is a hierarchy of jobs with the foreman at the top. The hierarchy is, to some extent, echoed by a hierarchy of knowledge with 'old timers' acting as the repository for the knowledge of the team. In general, there is an overlap between the 'old timers' and the senior workers in the job hierarchy.

Senior workers out in the field facilitate the learning process for new workers by demonstrating, or 'modelling', throughout the normal flow of the workday, how to

carry out different tasks. Workers learn much of the knowledge they need tacitly, but sometimes they are more actively 'taught' when a senior worker shows them how to make a connection or change a valve (P2(W)).

'Old timers' in the team, whether they are labourers or senior workers, are also key in assimilating into the job qualified plumbers who are new to the City Council. A qualified plumber²¹ starting work at Hillstar is confronted by a water reticulation system he has not previously dealt with – none of his training to be a plumber covers the water reticulation system of municipalities, and he comes into the municipality as a qualified *domestic* plumber.

When you join with a plumbing qualification you are put with another plumber for another month. But the work is so vast that a month is too little. So it is the labourers who actually train you up – but labourers don't get any recognition for this. Labourers have the knowledge to train you up because of their years of experience (FTTS).

I went to Hillstar as a domestic plumber. Labourers taught me how to work on the reticulation system. Labourers taught the plumber (DirTrain).

I have spoken about the role of the 'old timers' and senior workers in the learning process. The foremen, because of their hierarchical position within the team, play a particularly important role. All the foremen I interviewed showed awareness of their role in facilitating learning by identifying different educating strategies they had developed. These included:

- Consciously moving a new worker from observing to doing through a modelling process. "If I had a new person, I would do the first job, then each of my two team members would do a job and then the fourth job the new one would do" (NP3(F)).
- Starting from what the worker knows already and the way that they are already working. "I start by trying to work out what the guy knows. I try to

²¹ A plumber qualifies by going through an apprenticeship. There is no formal municipal water reticulation system plumber qualification. Instead, plumbers become qualified domestic plumbers and they must then adapt their knowledge to the municipal water reticulation system (FTTS, DepM, DirTrain, DisM).

- understand why they are working hard, or why they are working easily. If they are working hard it is because they are doing something wrong, or not the best way” (NP(F)).
- Using specific jobs to teach workers specific information. “I’m getting her [she had been on the team for a month] to write down the materials used and needed so that she gets to know the materials, because at present she doesn’t know them” (NP3(F)).
 - Pairing off more experienced workers with less experienced workers to do specific tasks. “I’ll put a new guy to tighten a coupling and get an old guy to watch him” (ML3(F)).
 - Using visual means to facilitate learning. “I draw them maps of the different areas we cover” (NP(F)).

Workers told me different things about how much their foreman had facilitated their learning. I deal with this more in section 5.1. of this chapter, from the perspective of the power relations involved between the foremen and the workers.

4. CONTEXT OF LEARNING

At Hillstar, learning happens while workers are out with the teams doing a day’s work. Workers’ immediate context is their worksite and the team they are with; at a slighter broader level their context is the depot. The context is important to understand as it impacts on workers’ learning in the workplace (Fuller, Munro and Rainbird, 2004: 8) and the value ascribed within the workplace to various kinds of knowledge (Fenwick, 2001: 8).

4.1. Workplace relations before restructuring

During the 1980s and 1990s Hillstar had a relatively stable workforce (FTTS; DepM). The Western Cape under apartheid was a ‘Coloured Labour Preference Area’ and hence the labourers at the depot were mainly ‘coloured’, and the

supervisory and management staff were mainly 'white'. Management tended to be paternalistic, and nepotism was rife (DisM). Newly employed labourers were often the sons or nephews of existing workers (DisM). Both management and workers were to some extent complicit in this nepotism. It was of benefit to management because it assisted the learning process (new workers learnt from their fathers or uncles (DisM)) and it was a way of exerting control over the workforce (if a son or nephew was misbehaving or coming late regularly, management would call on the father/uncle to discipline his son/nephew (DisM)). It was also of benefit to workers to ensure that their relatives were employed.

The job designations were very hierarchical as I have outlined in Section 4.2 of Chapter 3, and I was told that promotion was a slow progression through each of the grades. It was not an inevitable progression, however, as the number of workers employed in each of the job categories decreases as the job designations move up the hierarchy. Some of the workers that I interviewed remembered the process of promotions as having been largely under the control of the foremen and superintendents at the depot. "In those days the foreman could give the job" (ML1(W)).

This was confirmed by management who made the point that in the past, "depot management had some freedom to move workers around and promote those they identified as being able and competent" (DepM).

SAMWU was strongly organised in this workplace in the 1980s and early 1990s and, according to one respondent (FTTS), played a role in opening up learning opportunities to some of the workers who were sent for driving lessons. The result is that today some of those workers, who started off as labourers in the 1980s, are foremen on the trucks (FTTS, P1(F)).

4.2. Impact of external change on the workplace

From discussions with a number of respondents it is clear that the restructuring that took place in local government in the late 1990s and early 2000's (see Section 4.1 in Chapter 1), impacted on the workforce at the depot and the relations among workers. While local government restructuring has not, it seems, directly affected the work process ("restructuring hasn't affected how you actually go about fixing a burst water main" (DisM)), it has affected systems like job placement, relocations and promotions – all of which have affected workers' morale (Turncock).

While it might be expected that changes brought about by the end of apartheid and the introduction of legislation which was meant to benefit workers²², would improve the situation of workers, many of the 'old-timers' perceive these changes negatively or have had negative experiences of them.

The first negative change identified by workers relates to the increased centralisation of the administration.

Under apartheid, things got done. We might have complained a lot about the foreman and superintendents, but things got done. Now the civic centre²³ makes all the decisions (mainlaying gang).

Before the amalgamation of all the disparate local authorities into the City of Cape Town, Hillstar had a lot of autonomy (DepM). I was told that this is now being eroded with the centralisation of the city's administrative functions. It could be argued that this is an important part of the process of equalizing resources and access to services across the city, but in the context of the City of Cape Town pursuing neo-liberal policies (McDonald, 2008: 6), centralisation tends to suggest the corporatisation of the municipality, as discussed in section 4.2.1 of Chapter 1.

²² This includes the Employment Equity Act of 1998 and the Skills Development Act of 1998.

²³ See footnote 11.

The second negative experience that workers point to is the centralisation of promotions and appointments (ML1(W)). For many workers at the depot, the whole system of promotions has become more opaque because it is determined by people they never see, who sit far away in a central human resources office, and it involves elements, namely qualifications and certificates, they are not familiar with or which seems out of their reach.

One of the issues that SAMWU has fought about is the need to introduce more objectivity and fairness into appointments and promotions. On the face of it, this is what the City of Cape Town is doing. It seems ironic therefore that workers are grappling to cope with this change. I would argue that the fact that it is 'old timers' who are resisting this change points to the conservative nature of many communities of practice (Billet, cited in Fenwick, 2001) and to workers' attempts to protect their knowledge. On the face of it, the ability of superintendents/management to use subjective criteria in deciding on promotions, can be detrimental to the interests of the majority of workers, but in resisting the shift to a new system, there is a tendency for workers who did benefit to romanticise the past.

So, for instance, one of the foremen I interviewed, who had started off as a labourer, argued that in the old days the foremen and superintendents had been promoted based on merit.

In the apartheid days foreman and superintendent looked at us and saw what we were doing. They saw that were doing more than what approved to do. And that's how we got promoted (ML1(F)).

The implication of this is that for foremen or senior workers the system of promotions in the past was a better system, despite its subjectivities, because it had worked for them. Even those who did not get promoted in the old system at least understood how the system 'worked'.

In the current system it is less clear for the long servicing workers what it is that they can do to improve their chances of promotion. Their perception is that the only way to get a promotion is by having a formal qualification (P1(F)). They resent the fact that while new workers come into the job with qualifications, they must still be shown how to do the actual work by the longer-serving workers, but the latter are left behind when the new workers, with their qualifications, are promoted. “You are here for years, [you don’t get promoted], and then you must teach the new person” (ML1(W)).

It is interesting that management also recognizes the issue of new, qualified workers getting promoted over the head of the long-serving workers, and are sympathetic to workers’ unease about it.

It is obviously difficult when a workers has been in the field for years and years and then they are passed over for promotion because they don’t have the required formal qualification – and then new workers come in at a higher slot than them, and the old worker must teach the new worker the job. The old workers become unhappy with this situation (DepM).

I would argue that this concurrence between management and workers can be explained by the fact that the managers I interviewed had started off on the trucks and had been promoted through the ranks into managerial positions. They have an intimate knowledge of the conditions on the ground and the situation in the trucks, and often came across as sympathetic to workers’ concerns as a result.

I made no attempt to confirm quantitatively the strongly held perceptions outlined above by both workers and management. What is interesting is not whether it is a pervasive practice to rapidly promote new workers coming in with qualifications, but rather that there is a strong perception that this is happening. It points to the level of unease among the ‘old timers’ about change. It also suggests that the value workers ascribe to their own learning and knowledge is being undermined

by the increased value, in the broader context of the National Qualifications Framework, that is accorded to formal qualifications.

Many of the workers I interviewed seem to have a great deal of respect for the 'cleverness' of the young workers. I was told that the young workers were not like young workers in the old days: today, young workers are 'witty', they are 'quick thinkers' (P1(F)).

The third negative experience identified by workers relates to the important role that teams, as communities of practice, play in the learning process. Towards the end of 2007, and the beginning of 2008, a large number of new workers were employed to work on the non-payment teams, doing disconnections/restrictions and reconnections, as the geographic area that these teams are responsible for expanded (NP(F)).

The perception of older workers is that this sudden influx of new workers has diluted the learning process and hampered the passing on of knowledge about the job. They argue that the new teams were set up without proper training. Workers on the new teams did not go through a process of learning and assimilating knowledge from senior workers. They were not first assigned to other teams, such as the DM teams, where they could move from 'legitimate peripheral participation' to full membership in the team. The result, according to the long-serving workers, is that jobs are being poorly done, and DM or plumbing teams have to be drawn in to repair the damage. I was told, for instance, that an inexperienced non-payment team might damage the pipes when they were taking out a meter so that when the meter was put back in, it leaked. A DM team would then need to go and repair the leaks (Turncock, DM1(F)).

While one of the longer serving and more experienced non-payment foremen (NP(F)) agreed that the inexperience of the new non-payment teams did create a

problem at times, management at the depot disagreed with this perception (DepM), arguing that the learning process continues as before.

It is unlikely that workers would tell me that they have to repair work incorrectly done by the non-payment teams if this was not true. However, it would be in management's interests not to concede this point as they would not want to be seen to be running a depot where staff are not sufficiently trained. At the same time, I would argue, it is possible that the long-serving workers exaggerate the problem. The reasons for this exaggeration might arise from their general disgruntlement at the changes taking place, the fact that many of them were overlooked for promotion into the non-payment teams as foremen (P1(F)), and their perception that these new young workers will be further promoted over the heads of long-serving workers²⁴.

There is another dimension that I felt was important and needs to be taken into account in trying to understand the changing dynamics between workers in the workplace: this is the question of 'race'. No-one that I spoke to identified the problems they were experiencing as linked specifically to 'race', and 'African' and 'coloured' workers sat together in the SAMWU general meeting. However, I think it would be naïve not to recognise 'race' as a dimension affecting the dynamics of the workforce. The Western Cape has a history of racism between 'coloured' and 'African' workers, which can be traced back to the effects of the apartheid system (Rudin, 1996). In this context it is not surprising that some of the suspicion that the longer-serving, older, Afrikaans-speaking, 'coloured' workforce feel towards the changes that are taking place around them should find expression in some suspicion towards the newly appointed, younger, Xhosa-speaking 'African' workers, who they fear, are going to be promoted over their heads.

²⁴ In the SAMWU general meeting I observed (date) one worker voiced a perception that some of the newly appointed workers had already been promoted out of the non-payment teams into the office. I was not able to establish the veracity of this perception.

It is also important to note that racism can be expressed in tangential ways, for instance through attitudes to language. In identifying possible obstacles to the learning process for newly employed workers, one of the longer-serving workers said “Language can also be a problem - they [new workers] seem to understand but because of language difficulties, there is not proper understanding and they [the new workers] come back next day and do it wrong” (NP(F)).

My perception is that there is a shift taking place in the nature of the workforce which has the potential to result in shifts in how learning and teaching take place. This is a shift from a stable, older workforce with few, if any, formal qualifications, but with a great deal of experience, to a much younger workforce, who have formal qualifications, but little experience. So as the older workers leave or retire, the depot is going to have to deal increasingly with an itinerant workforce, who simply don't have the depth of knowledge and institutional memory that the current senior workforce has.

4.3. Shifts towards a more formal learning system

The City of Cape Town has a recently established an accredited training centre which covers training in water reticulation, waste water operation and water purification. It was established in 2005 (DirTrain), and runs a number of courses, including:

- courses in basic leak repairs for people from the informal settlements;
- Adult Basic Education and Training (ABET) courses;
- short courses in a range of areas like health and safety;
- learnerships in water reticulation, waste water operation and water purification.

It is the learnerships that are particularly relevant for this research. According to DirTrain, at the time of the interview (June 2008), the training centre was running Level 2 learnerships for 30 people – 10 of whom came from the water reticulation

sector, the sector that Hillstar is located in. A Level 2 learnership is about the level of a senior handyman. The aim of these learnerships is to:

improve [labourers], empower them to get better salaries, better positions. Two years ago we had people in council still a labourer after 20 years. [Through the learnership we] try to empower them to get better salary, better positions, so they can become handyman, senior handyman (DirTrain).

Workers are recruited for the learnerships from the eight water depots in the City of Cape Town. According to DepM, Hillstar is hoping to get some workers into the learnerships that are starting at the beginning of 2009, but so far nobody from Hillstar has participated in the learnerships (DepM).

5. IMPACT OF POWER RELATIONS

5.1. Role of foremen and responsibility of the individual

Although mastery over the knowledge in the team is dispersed among the senior workers, my observation was that foremen seem to have the most control over the learning process and new workers' access to learning.

While interactions between foremen and workers that I observed gave the impression that, despite the formal hierarchy, relationships in the team were informal and equitable, I also observed elements that pointed to a hierarchical structure being enforced and the existence of power dynamics within the team. For instance, the foremen were very formally referred to as Mr.... both by other foremen and by the workers. There was an acknowledgement from workers that the foremen had power and sometimes used it negatively against workers. For instance, I was told that foremen shouted at workers 'as part of the process of learning' (P2(W)), and used their position to actively help or hinder workers from learning and from gaining promotion (ML1(W)).

All the foremen that I interviewed who had progressed up the ranks from labourer to foreman, said that their foreman had played a vital role in their learning by allowing them to 'work with the spanners' or make a connection, even when they were 'just' labourers, and handling tools was not, strictly speaking, their job.

At the same time, these respondents individualized responsibility for learning. According to them, it was up to the worker as to whether they took advantage of learning opportunities. They said that some workers didn't want to do anything outside of their job designation. So, for example, a labourer might refuse to make a connection between two pipes.

Some guys maintain that they won't do anything extra. Get guys that just dig hole. I know guys at Hillstar who just do their job – only open up a hole. Don't ask me to bring tools to repair pipe. It's not my job (DirTrain).

Some guys just don't want to learn. They want to just do their own job. Others ask questions, want to learn, are willing to learn (NP(F)).

Others didn't want to learn, or were too slow. Sometimes workers insisted on sticking rigidly to their job description. They were employed as labourers, not employed to do more, they weren't prepared to muck in and help with a connection or whatever. It didn't help workers who refuse to 'hold the spanners' (P1(F)).

The perception was that those workers who got ahead, who got the promotion, were those who asked questions, were willing to try out a new task, and were willing to do tasks that were outside of their strict job designation.

This, however, was not a unanimous view. Other workers, handymen or senior handymen, who had been employed for as many, if not more years than some of those who were now foremen, saw things differently. For them, the problem was not with individual workers, but with the foremen. They identified two problems specifically. Firstly they talked about their foreman maintaining a strict hierarchy in the team, and insisting that workers only do the work suitable for their job designation (ML1(W)). Secondly, they spoke about foremen 'having favourites'.

They facilitated learning for some workers by giving them opportunities to try things out, and shut down opportunities for others (ML1(W)).

5.2. Perceptions of the value of workers' knowledge

Throughout my discussions with workers there was a strong sense that workers are fully aware of the value of their work, and of the learning that happens on the job to enable that work. Workers told me that they are the ones out in the field, and therefore the ones who knew how to do the job and how to deal with any problems that might arise. "Boss sitting in the office doesn't know all this, all the complications of what we have to deal with on the job" (ML1(W)).

Management at the depot also expressed recognition of the learning that happens on the truck: "Hillstar workers use their own head, use their own initiative – and that is why they try out new things in the field" (DepM). This was echoed by one of the superintendents who stated: "I say to workers – you're the ones down there. Find an easier way for yourselves, but do it properly so that there are no leaks" (ML1(F)).

While management at the depot did value the learning that workers gained 'on the trucks', workers in return had respect for the knowledge of depot management, most of whom had worked 'on the trucks' themselves before being promoted. "They know how we do things, they were also plumbers on the trucks – the came from the ground up" (P1(F)). This quote reflects a respect for the learning and knowledge acquired out in the field.

In contrast to this, there is a perception among the workers and foremen that administrative staff and senior management based in the central administration of the municipality don't understand what workers do, and don't value the learning or work that happens.

Now civic centre dictates, but they don't really know what we're doing. Management here, they know the work but they are under pressure from civic centre. That makes them lame ducks. They keep having to ask permission (Turncock).

6. CONCLUSION

A number of key themes can be identified as having emerged out of the interrogation of my data.

Firstly, it is clear that informal learning in the workplace, in a community of practice, is pervasive and vital to the work process. Workers learn a wide range of skills from each other. The role that workers play as educators in the workplace is key to the process of informal learning. Secondly, this learning happens within a particular set of power relations in the workplace, which are shaped by external class, race and gender dynamics. These power relations exist not only between workers and management, but among workers themselves. Thirdly, broader processes of societal change impact on informal learning processes at work in particular ways. In the South African context, the changes wrought by the introduction of the NQF provides a backdrop to these changes. This leads to the fourth theme, which is the impact of the formalization of learning on informal learning processes.

In the next section I go on to develop a deeper analysis of the data, by drawing on these four themes.

CHAPTER FIVE: DISCUSSION ON FINDINGS

1. INTRODUCTION

I set out my data in the last chapter under the four key questions identified at the end of section 2 of Chapter 2. In doing this, I have already presented a basic analysis of the data. In this chapter I will deepen the analysis by drawing out the relevance and significance of my findings under four, broad, cross-cutting themes that I identified at the end of Chapter 4. In doing so, I will draw on the key concepts identified in Chapter 2. The themes are:

- The value of informal learning in the workplace
- Power relations in the workplace and their impact on learning
- The impact of social change on workplace learning
- The impact of formal learning on informal learning

2. VALUE OF INFORMAL LEARNING AND WORKERS' KNOWLEDGE

Although various writers (Billett, 2004; Colley, Hodkinson and Malcolm, 2003; Fenwick, 2006) argue against fitting workplace learning into neat categories of formal or informal, I argue that it is best to understand the learning and training that happens at the Hillstar water depot as predominantly informal, on the basis that there is no set curriculum, no prescribed teaching materials or written texts, and no designated teacher. In addition, it does not lead to any kind of formal certification. Much of the learning is tacit in nature in that neither the person 'modelling' the work for the learner, nor the learner, is conscious of much of what is being learnt in the process. However, there are elements of formal learning in that at times workers are pulled aside to be shown how to do certain tasks in a more formal and structured way. For instance, they might be taken to the testing rig at the back of the depot, as mentioned in section 3.1 of Chapter 4.

As argued in section 3.2.1 of Chapter 4, informal learning in the workplace happens in a community of practice (Lave and Wenger, 1991). The community of practice lens helps to illuminate how new workers, through a process of 'legitimate peripheral participation', learn, and become full members of the team.

The informal learning that takes place at the workplace is recognised by workers who assert strongly that they learn from each other and they value each other as educators (see section 3.1. and 5.2 of Chapter 4); as well as by management, who recognise the importance of the informal learning (see section 5.2), although it is unlikely that they recognise the "depths, range and content of what is known" (Grossman, 2009: 208). Given that until recently virtually no other training for workers was provided, it can be concluded that the municipality has relied, and continues to rely almost entirely on this process of informal learning.

In section 2.1 of Chapter 4 I outlined the range of different knowledge areas that workers have. Some of this knowledge is explicitly learnt, some of it is tacitly learnt and is invisible. It is often the tacit, or 'hidden' knowledge (Livingstone and Sawchuk, cited in Cooper and Walters, 2009: xvi) that workers learn that enables them to do the job quicker, safer and with less effort. For instance, I noted from my observations that it helps to do the job if workers know which areas pose a greater safety risk; the anomalies of different kinds of material; the best way to hold the material and equipment to make a connection; the quickest way of making a connection. Much of this knowledge does not form the 'formal' body of knowledge that workers are expected to acquire in order to do the job, such as the different types of meters and valves, different pipe sizes and so on; but it is an essential body of knowledge none-the-less.

Much tacit knowledge hinges around health and safety issues. DisM's example of workers needing to watch out for each other, "your safety depends on the other workers watching out for you", echoes the findings of research conducted by Webster and Leger (1992) about the tacit knowledge acquired by mine workers

which was essential in warning them about impending rock falls. As DisM noted “noticing things like that [if a bank is starting to collapse] is not something you are formally taught, it is something you learn through experience, over time”.

As indicated in Chapter 1, where I set out the context of restructuring in local government, increasing emphasis is being placed in South Africa on government bodies as ‘learning organisations’ (DPSA, 2003; DPLG, 1998). This is being actualised with reference to benchmarking ‘best practice’ for municipalities; and focusing on interactions between managers within and between municipalities. There is little reference made to, or acknowledgement made of, the learning of workers at the coalface of service delivery, or the importance of sharing and building on that knowledge. This echoes the argument put forward by Cooper, drawing on Jackson and Jordan, and Mojab and Gorman (cited in Cooper, 2009: 284) that “the learning organisation benefits only a small, elite part of the workforce; the majority of workers gain little benefit and are given little opportunity to contribute their knowledge” (Cooper, 2009: 284).

In the discussions about the capacity problems of municipalities, the focus is on increasing the skills of managerial staff, and bringing in more professional and skilled employees (Ndletyana and Muzandiyana, 2009). There is little focus on the skills of workers at lower grade levels, what they already have to offer in the way of skills, and how those skills can be acknowledge and built on.

As my research shows, workers have predominantly acquired skills informally on the job. However, this has largely happened out of sight. Management recognizes it as having happened to some extent, and as being necessary to the ongoing operations of the workplace, but, I would argue, it has not seriously been taken into account or the full value of it understood in the increased focus on workplace learning. What these workers have to offer in terms of years of learning and experience acquired has not formed a core component of a new system of workplace learning that is in the process of being introduced.

3. POWER RELATIONS WITHIN INFORMAL LEARNING

While the community of practice lens is useful in unpacking and helping me to understand the learning that takes place in the context of my case study, there are also weaknesses in the conceptual framework which means that it is not sufficiently able to explain or deal with some of the complexities of the informal learning situation at Hillstar. Some of these limitations include:

- it is limited in helping us to understand the workplace, or community of practice, in its broader political, social and economic context;
- it does not deal sufficiently with the power relations within the workplace, or inherent in the learning process, or the power relations between the workplace and the broader context;
- it does not provide an adequate analysis of how new learning can be generated, and under what conditions this can take place;
- it is limited in helping us to understand the impact of change that takes place within a community of practice when new workers and new attitudes are introduced and there are shifts in the power dynamics within the community of practice.

In this section I focus on the issue of power relations within the learning situation, drawing on a number of writers such as Billet (2004), Fenwick (2001) and Fuller, Munro and Rainbird (2004). These writers argue that in failing to recognize power relations inherent in a workplace learning environment, the community of practice framework does not provide adequate tools for critiquing those power relations.

Lave and Wenger (1991) underplay the amount of 'teaching', with all the inherent connotations of hierarchy embedded in this process, which occurs in on-the-job learning situations. Lave and Wenger emphasise that learning happens because of the "intricate structuring of a community's learning resources" (Lave and Wenger, 1991: 94), rather than through a process of the 'master' teaching

newcomers. This emphasis on the collective nature of learning is a key and important insight, but from my observations and interviews at Hillstar, I argue in section 5 of Chapter 4 that there is a power hierarchy within the community of practice which influences and impacts on the learning process. Control over learning and knowledge production, and authority over what is learnt and who learns it lies with the 'old timers', generally the senior workers, and in particular the foremen, within a broader framework set by the management of the depot.

This power hierarchy is reinforced by the nature of the informal learning environment. With no formal external curriculum, and no formally designated teacher, authority is conferred on senior workers because they possess a body of knowledge about the work process, with additional authority conferred on foremen because of their position in the hierarchical workplace.

Gamble (2001) emphasizes the role of the 'master' in transmitting knowledge, largely through 'modelling'. She is arguing that learning does not only take place within an equitable collective, but that it very specifically takes place through the auspices of a 'master' in whom authority over the knowledge lies.

Although in my case study mastery is more dispersed, the foreman does have more power than other workers in the team. He has power to determine who is given greater access to learning opportunities, who is 'rewarded' through promotions, and so on (see section 5.1 of Chapter 4). New workers coming into a team can end up being excluded from some of the learning processes. It creates a situation where one worker can be given preference over another in the learning process for subjective reasons, and so rewarded over another worker through promotion.

While some workers felt aggrieved by this system, there seemed to be general acceptance of the system because it was the way that it had always been. In trying to explain an inequitable situation where only a few got promoted by

management, many respondents resorted to individualising the learning process and blaming individual workers for not getting promoted. “Others didn’t want to learn, or were just too slow” (P1(F)). Those workers, with 20 or 30 years experience, who had not been promoted as far as foreman, were ultimately blamed by other foremen for not having taken on enough responsibility for their own learning. “[Foremen and supervisors] saw that we were doing more than what approved to do. And that’s how we got promoted” (ML1(F)).

It is not difficult to resort to this kind of individualistic explanation in a social context that places so much emphasis on individual achievements, activities and processes, rather than seeking the explanation in the nature of the capitalist system itself.

New power dynamics have begun to creep into the workplace between the ‘old timers’ and the new workers. The ‘old timers’ are ambivalent towards the new workers, seeing them both as a threat in that they will be promoted faster, and at the same time admiring them for their ‘cleverness’. I would argue that the admiration the ‘old timers’ feel for the ‘cleverness’ of these new young workers masks a distrust that the ‘old timers’ have been made to feel in the value of their own knowledge, which has been gained through years of learning on the job.

4. IMPACT OF SOCIAL CHANGE ON INFORMAL LEARNING

Fuller, Munro and Rainbird (2004) emphasize the importance of understanding the social context within which learning takes place, in order to deepen our understanding of that learning. They argue “by locating workplace learning in context, clearer understandings of the factors influencing the learning environment and processes can be gained, and insights about the sorts of changes which may lead to its improvement can emerge” (2004: 4). The community of practice conceptual framework has been critiqued for failing to

adequately explain the impact of external social change on a community of practice.

Lave and Wenger (1991) emphasised new workers adapting to the community of practice rather than the community of practice adapting to the new worker. This analysis holds when trying to understand learning in Hillstar in the 1980s and 1990s. Workers entered the community of practice and slowly assimilated the identity of the team and the workplace more broadly. This was assisted by the tendency for sons, nephews and other relations of existing workers to be employed (DisM). Following Lave and Wenger (1991), that learning to become a member of a community of practice is about assuming a new identity, these workers were exposed to the 'identity' of a municipal water worker both in the home and work environment.

However, in the context of rapid, broader social change, this explanatory power of the community of practice conceptual framework is weak. Over the last twelve or so years there have been a number of profound changes in the external context in which Hillstar is located. As the political, legislative and social environment shifted post-1994, and a new emphasis on meeting employment equity imperatives and increasing the number of formally qualified staff emerged in terms of employment practices, the workplace began to increasingly employ younger, 'African', Xhosa-speaking workers, many of whom came into the workplace with qualifications (see section 4.2 of Chapter 4). The entry of these workers into well-established communities of practice have led to feelings of unease and distrust among the longer-serving workers, because the new workers are perceived as possessing the means (qualifications) to promotion, with these qualifications and all they represent threatening to disrupt the old order of learning.

The reaction of the 'old timers' to the new workers has re-emphasized the conservative nature of the community of practice (Billet, cited in Fenwick, 2001:

7). Members of a community of practice can seek to protect their community from, and prevent change rather than interact with that change to try and influence it in a direction that will improve their conditions. This can be seen at Hillstar in the way that workers have begun to romanticise the past (see section 4.2 of Chapter 4). Workers perception is that years of experience and the learning and the knowledge they have gained is never going to be recognized because of the entry of new workers with qualifications. Faced with this situation it is perhaps not surprising that workers sometimes look back with nostalgia on the past.

The reaction of 'old timers' to the new workers is closely linked to the issue of formalizing learning, and it is to this that I turn in the next section.

5. IMPACT OF FORMALIZING LEARNING

One of the key changes that has begun to impinge on workplace learning at Hillstar is the introduction of a formal training system. This raises the question of what happens to, and within communities of practice that exist on the ground when more overt attention starts being paid to the formalization of learning.

In the case of Hillstar, the introduction of more formal training (specifically learnerships), and the importance ascribed to evidence of formal training (formal qualifications and certificates), has had a potentially profound effect on the value ascribed to informal learning on the job and the way the informal learning process in the workplace happens.

Writers such as Fuller and Unwin (2003), and Guile and Young (1998), argue that an important precondition for transformatory learning to take place, and new knowledge to be generated, is for workers to have access, through more formal training processes, to more abstract, scientific or 'underpinning' knowledge.

The challenge is how to introduce this more formal training aspect, without undermining the tacit modelling role of senior workers and without completely wresting control over learning from senior workers on the ground and locating it in an institution. The authority of senior workers as the repository of knowledge, who, through a process of 'modelling' passes on that knowledge to other workers, is in danger of being at worst stripped, and at best undermined, and replaced by a piece of paper. Increasingly, in workers' perception, a formal qualification is valued above the learning that workers experience in the field, even if that formal qualification has little to do with what the work entails.

As I argued in section 4.3 of Chapter 4, there is a real danger that in future years the workforce may have high level of formal qualifications, even if at a general level like matric, but have little depth of knowledge or nuanced understanding of the water reticulation system. While I recognise that there is a great deal about the work process that is routine, I do concur with the perception of the majority of the respondents that much of the knowledge that workers use in their work can only be acquired over years of working in the field.

One of the dangers that various writers (such as Fenwick (2006)) point to in relation to the increased formalisation of workplace learning is that learning becomes divorced from context once it is no longer 'embedded' in the work process. Workplace learning becomes abstracted from the very context that produced the knowledge in the first place (Fenwick, 2006: 43).

6. CONCLUSION

This dissertation explores questions relating to informal learning at a municipal workplace. In doing so, it builds on and reaffirms a body of literature on workplace learning that foregrounds the learning that workers on the ground participate in, in a context where the depth and extent of their learning is seldom recognized. The learning that workers are engaged in and the knowledge that

they acquire are largely invisible or tacit in nature and this is partly why the learning is not valued. The other reason for their learning not being valued is because in a capitalist society, the learning of manual workers is generally not taken seriously. It is the knowledge of skilled workers and professionals and managers that is regarded as the knowledge essential to the running of the economy and that is thus the key focus of education and training interventions.

This can be seen in the way that the discourse of organisations as 'learning organisations', which are able to generate knowledge, has been put into practice in the local government sector in South Africa. The focus is almost exclusively on knowledge management and sharing among managerial and professional staff, and largely ignores the contribution that manual workers make to the effective delivery of services and the fact that these workers too have valuable knowledge of, and insights into the work process that are worth sharing and implementing.

What my research has shown is that considerable informal learning and knowledge sharing happens among manual workers, in a community of practice. Workers learn from each other, and are educators to each other. This needs to be acknowledged and recognized more explicitly.

However, it is important not to over-emphasise the collective, egalitarian nature of the learning process. Within the work team there is a hierarchy of knowledge, which largely co-incides with the job hierarchy. This gives the foremen and more senior management in the depot the power to act as gatekeepers to the learning and promotion possibilities of workers.

It is ironic then that moves by the centralised administration of the council to bring more objectivity and fairness into the promotion and appointment procedures has been met by distrust and suspicion by workers at the depot. I argue that this is largely related to the way that this new approach to promotions and appointments has been linked to the formalizing of learning in the workplace. Workers

perception is that they will be blocked from promotions if they do not have formal qualifications. Many of the 'old timers' end up feeling threatened by young workers coming into the workplace armed with qualifications. They question and distrust their own knowledge in the light of the perceived 'cleverness' of the young workers.

Formalizing workplace learning does have benefits, as pointed out by writers such as Guile and Young (1998), in that it can move learning to a higher level (transformatory learning) by exposing workers to more abstract, generalized knowledge. As Boud argues, however,

the new challenge to practice is to find ways of acknowledging how we learn in our many locations and build on that without allowing the act of formalizing learning to distract from and destroy what it is that is being fostered (2006: 88).

My dissertation began to probe workers' learning in one location, that of the municipality. Given the limited scope of the research, I was not able to uncover the extent of the tacit learning taking place and the depth of tacit knowledge that exists. It would be useful to carry out more long-term research which is more effectively able to plumb the depths of workers' tacit knowledge. Until this is done, the knowledge of manual workers will continue to be "denied, suppressed, degraded or diverted" (Livingstone and Sawchuk, 2005:2).

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APPENDICES

APPENDIX 1: SCHEDULE OF OBSERVATIONS AND INTERVIEWS

The table below summarises the amount of time spent collecting data, and who it involved.

TABLE ONE:

| OBSERVATIONS AND INFORMAL INTERVIEWS | | |
|---|--|---|
| | Date and time involved | Respondents involved in observations and informal interviews |
| 1. DM teams | 27 May 2008 6 ½ hours | Team one: DM1 4 respondents Team two: DM2 2 respondents |
| 2. Plumbing teams | 29 May 2008 4 hours 1 July 2008 2 hours | Team one: P1 6 respondents Team two: P2 5 respondents |
| 3. Non-payment teams | 18 June 2008 5 hours | Foreman: NP(F) Team one: NP1 2 respondents Team two: NP2 3 respondents Team three: NP3 |

| | | |
|---------------------|-------------------------|---|
| | | 4 respondents |
| 4. Mainlaying teams | 19 June 2008 6 hours | Team one: ML1 9 respondents Team two: ML2 11 respondents Team three: ML3 10 respondents |
| Total | 23 ½ hours | 57 people |

TABLE TWO:

| UNPLANNED OBSERVATIONS | | |
|-----------------------------------|-------------------------------|-------------------------|
| | Date and time involved | Respondents |
| 5. SAMWU general meeting at depot | 29 May 2008 3 hours | About 200 union members |

TABLE THREE:

| INTERVIEWS | | |
|--|--|---|
| | Date and time involved | Respondents |
| 6. Fulltime shopsteward in SAMWU | 6 June 2008 2 hours (Interview at SAMWU metro branch office) | FTTS |
| 7. Management at depot and senior management | 14 May 2008 1 ½ hours (Interview at coffee shop in Rondebosch) 19 May 2008 30 minutes (Interview at Hillstar depot) 10 December 2008 2 hours (Interview at coffee shop in Observatory) | District Manager for Water and Sanitation : DisM Depot Manager: DepM |
| 8. Group interview with DM foremen | 21 May 2008 1 hour (At Hillstar depot) | DM foremen: DMF 10 respondents |
| 9. Interview with turncock | 11 June 2008 1 hour (At Hillstar depot) | Turncock |
| 10. Interview with director of Pinelands Training Centre | 17 June 2008 2 hours (At Pinelands Training Centre) | DirTrain |

APPENDIX 2: OPEN-ENDED INTERVIEW SCHEDULE: TEAMS ON TRUCKS

Information on workers:

1. Names
2. Length of employment in council, at Hillstar
3. Where do workers live (broadly)?
4. Does anyone live in an area that Hillstar services?
5. Talk about what its like being both a worker and a resident receiving the service.
6. Job designations and job history for each worker. Link this to formal and informal training that they've received.

What the job is workers do:

7. What is the core daily work of the team?
8. What other situations/crises do workers respond to?
9. What is the area covered by the team? What are the particular difficulties/challenges in relation to this area? What makes it a nice area to work in?

Working as a team:

10. How long has team worked together? Do you, and if so, how / when do workers shift around between teams? And between types of teams?
11. What do you do if you encounter a problem out in the field? Do you always work out a way, do you sometimes need to go back for more stocks, or call out someone with more expertise/experience? Who has more expertise/experience?
12. What if one or more team member is absent? Can others do their job?

Learning on the job:

13. How did each worker learn to do what they do?
 - specific skills
 - ways of working/specific approaches/abilities

Has this changed over the last few years?

14. How much/what did you learn from workers around you? And how much from outside the workplace eg. Formal training

Has this changed over the last few years?

15. What have others taught you?

Has this changed over the last few years?

16. What have you taught others?

Has this changed over the last few years?

17. Does management always know what you do/how you do it? Do you want them to know?

Has this changed over the last few years?

18. If you come with a better idea about how to do something, do they listen? Give examples.

Has this changed over the last few years?

19. What do you have ideas about?

- The way work is carried out on site
- The way the work is structured and allocated
- The way the depot is structured

Who could do this job?

20. Do you think women could do this job? Why/why not?

21. What kind of person is the best person/person most suited to this type of job?

22. Could anyone walk off the street and just start doing this job straight away? What would they need to be taught first? Learn first? Experience first?

23. Comment on people coming in with qualifications

Changes and what has caused them:

24. What are the changes?

- how people are employed
- how people are promoted and who is promoted
- way work is carried out
- way work is structured

25. Have they come about because of:

- a) Impact of new technology

- b) All the changes since 1994 – employment equity; restructuring; integration of service delivery; extension of service delivery etc.
- c) Workers input
- d) Depot management decisions
- e) Central city council decisions

Hillstar's ways of doing things:

26. How does the way Hillstar does things differ from the way other depots do it?

27. How come Hillstar does things different? Was it workers being innovative or management?

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APPENDIX 3: INTERVIEW SCHEDULE: MANAGEMENT

Demographics and workplace structure:

1. How many workers in the water depot at Hillstar? How many workers per job category/designation? Do they work in teams? How many per team?
2. What is the breakdown of workers in terms of:
 - age
 - sex
 - languages spoken
3. Explain how management structures work in the depot?

Work process:

4. Take me through a daily/weekly work routine
 - a. Where do workers report at the beginning of each day? At what time?
 - b. What is done every day? What is done less regularly – say weekly or monthly?
 - c. Who does it?
 - d. How do they do it?
5. Changes in work process:
 - a. How has the work process (your answer to number 4) changed over the years? Try and identify the particular times when these changes have occurred either by referring to specific years or specific events.
 - b. What caused each of these changes
 - new technology
 - restructuring
 - the demands of service delivery
 - any other reasons.
6. Who determines/shapes work process?
 - a. To what extent does management in the depot determine how the work is carried out and to what extent is it centrally determined?
 - b. To what extent do you think input from workers has influenced the way that work is done in the depot? Can you name particular incidents or times or events when workers have influenced the work process?
 - c. Have workers over the years evolved particular systems or ways of working? Can you talk about them?

7. New workers:
 - a. Who inducts new workers? Is there a manual or some other document? Or is information passed on orally? Who by?
 - b. How do new workers learn to do their job?
8. Problem solving:
 - a. If a problem develops while the job is being done, how is it solved? What process is followed?

Local Government as a learning organisation:

9. Is there much discussion about local government as a learning organization? About local government operating in a knowledge society?

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APPENDIX 4: INTERVIEW SCHEDULE: HEAD OF WATER TRAINING CENTRE

1. Training in water reticulation within the municipality:

- a. Are there specific courses for those in water reticulation?
- b. What is the content of these courses – broadly?
- c. Who are these courses aimed at?
- d. When were they introduced?
- e. How many have gone on them.
- f. What are the difficulties of developing and running these courses?

2. Skills needed for those working in water reticulation?

- a. What are the skills and/or abilities needed for those working in water reticulation?

3. Water learnerships

- a. Are there any water learnerships?
- b. What happened to them?

4. Formal training outside the municipality?

- a. Are you aware of any formal training courses that exist outside of the municipality for water reticulation in a municipality? For example, at technikons?

5. History of training in municipality and the setting up of the Pinelands training centre

- a. Can you tell about the history of the Pinelands training centre?