Situated Knowledge in the Workplace: An investigation of the factors that influence the transfer of learning.

Thesis submitted for the Degree of
Doctor of Social Sciences
at the University of Leicester

By Margaret Mangion MBA (Maastricht)

University of Leicester

December 2009

Abstract

This study has a single main objective: the investigation of factors that enable the transfer of situated learning at the workplace. This objective is achieved by first carrying out an exploration of 'transfer of learning at the workplace' and the existing notions pertaining to this field. This search led to the discovery of a number of models that so far have mainly been used for the transfer of formal learning. A proposed model was developed as a framework for data collection and analysis with the intention of pinning down 'some' aspects of situated learning at the workplace. The research methods employed, namely empirical data for descriptive statistics and qualitative data offered the possibility of exploring two emerging research questions focusing on how the application of informal learning can be promoted at the workplace and what contextual factors can encourage and facilitate the transfer of learning. Two small-medium-sized firms in the Information Technology sector were used for the study.

Offering insight in the understanding of informal learning at the workplace, this research ultimately concludes that the extent to which situated learning is successfully transferred at the workplace is dependent on a number of factors at individual and organisational levels. A suggested typology builds on the situated learning transfer model and the research findings from the study to further support findings related to the enhancement of the application of learning within the workplace. The research concludes that a great deal of learning takes place in informal settings at the workplace. It was also confirmed that factors related to the individual and the organisation impinge on how this learning is then applied. Focusing on situated learning at the workplace, especially on the study of factors that facilitate the application of this learning makes this study original since it does not specifically and solely address transfer or training from formal learning interventions similarly to most research carried out in the past.

Acknowledgement

Having completed this research, unique appreciation goes to my family to whom this thesis is dedicated. Thank you for being there patiently waiting and supporting me every inch of the way. Without your constant support and encouragement this Doctorate would not have been a feasible achievement.

A big thank you also needs to go to my friends in Malta and in the UK – Yvette, Lara, Ethel, Marvic, Simran and Annette are only but a few. Although I was often a wet blanket, they put up with me, and tried to motivate me as best they could. I am also indebted to my friends and colleagues at Panasonic Europe Ltd for offering me a great site for workplace learning and for presenting support in various forms. This gave me the 'luxury' of making myself more aware of what I was researching by experiencing it. Thank you for providing such a great environment.

Special thanks also goes to my supervisor Daniel Bishop who with constant motivation through the ups and downs of these last few years has always been there with constructive feedback. I have learnt the 'art' of being a social scientist thanks to the various approaches I was encouraged to take, and the different perspectives through which I could view the research. The greatest benefit emerging from this research was the possibility of actively thinking and discussing issues pertaining to learning in the daily lives of employees. A big thank you also goes to Dr John L. Scott, whom I met accidentally and who sparked my interest in learning at the workplace.

Finally I would like to express my gratitude to all the respondents who took time to see me and to trust my judgment in relation to their feedback. I appreciate the openness and honesty shown throughout the process.

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Chapter One

Introduction

Overview

This thesis is a study of factors that influence the transfer of situated learning at the workplace. Ultimately the aim of the study is to highlight features in organisational life that potentially enhance processes and factors impacting on learning transfer within the workplace. It is thought that through such enhancement, the intellectual resources of the organisation can be captured and exploited more effectively.

This research takes place in the context of advancing globalisation and the 'knowledge economy', where attention has increasingly focused on knowledge, skills, learning and intellectual assets as sources of competitive advantage. Singer and Edmondson (2006), for example, state that learning is nowadays considered to be critical for organizational performance. The ability to develop and use skills and competencies of the workforce have taken predominance in the race for competitivity and the achievement of competitive advantage. This phenomenon is expressed by Eliasson (1994, 77) who states that:

> "Human competence dominates economic performance at all levels. Its hallmark is heterogeneity to the extent that in each agent certain dimensions of it are unique and not (directly) imitable or communicable."

In this way, commentators have increasingly sought to draw a connection between skills, competitiveness and performance (see also, for example, Hysong, 2006; Singer and Edmondson, 2006). Simultaneously, there has been a growing interest not in only learning, but also in the *transfer* of learning, namely the extent to which learning is applied to work. In fact, issues of transfer of learning have gained momentum over the years owing to the purported link with improved performance as a result of positive transfer.

Traditionally, adding value through skills and learning was seen to be possible through training instances. More recently, however, writers became concerned with the *application* of that learning. For example, Rita C.M. Vermeulen (2002: 366) starts off the abstract of her paper by stating that:

> "For training in a corporate setting transfer of training is essential. Yet time and again research shows transfer is a problem."

The same feeling is shared by Holton and Baldwin, (2003). Improving transfer of training becomes a mission for these authors who go on to develop a 'conceptual framework for managing learning transfer systems' in their publication *Improving Learning Transfer in Organisations*. Their work marks a development of existing models of transfer, most notably Baldwin and Ford (1988).

Vermeulen recalls instances where she attended a training course, left full of enthusiasm feeling competent that she could change the world, to then find that she never practiced

what has learnt. She calls this the 'transfer gap'. This is a phenomenon that hits a large number of course participants on a daily basis around the world. In the classroom, the new concepts learnt seem to make sense, they look feasible and applicable. Participants in the training room feel empowered and competent enough to implement new methods, while possibly motivating other colleagues not attending the course to follow suit. Transfer issues take place later; when the trainee returns to the workplace due to the appreciable workload or support problems. Numerous studies focused on these concerns in relation to transference of training material back to the workplace (Baldwin and Ford, 1998; Holton et al, 1996). There is thus, an established literature that has explored and analysed barriers to the transference of learning from the training context to the workplace. This study will build on such work, but its main contribution is that it looks beyond the transference of 'training' and takes into account the importance of *informal* and situated types of learning; how is the transference of such learning to be understood?

Transfer of Learning – Taking a new approach

Researchers have previously focused on various areas influencing the level of transfer occurring in organizations. These areas refer mainly to transfer as a result of training interventions in classroom settings. Some of the areas that have been studied previously include the following:

- Training design factors, (Ford and Baldwin, 1988)
- Environmental factors, (Noe and Schmidt, 1986)

- Individual predisposition in grabbing the opportunity to transfer knowledge, (Huczynski and Lewis, 1980)
- Instruments that influence the level of transfer, (Kirkpatrick, 1994; Holton, 1996)

In the research areas mentioned above the results indicate a series of conclusions that identify, describe or measure factors that influence transfer in formal learning situations.

This study takes on a new approach. The factors that influence transfer of learning will be explored taking into consideration the situativity of the workplace as an environment where learning takes place. However, this is done away from the 'classroom'. A situated aspect will differentiate this study from most others as it focuses on learning that takes place on a day-to-day basis in the firm. The transfer of knowledge within the organisation is therefore strongly contextualized. The 'software' or 'people issues' (Bate and Robert, 2002) existing in an organisation also influence the 'type' of knowledge that is created and transferred within it. A higher sensitivity to characteristics of different contexts in the organisation where knowledge is created and applied is therefore critical.

As will become clear, the conceptual background of this study draws significantly on theories of situated learning. According to such theories, the individual learns from and as a result of relationships with other individuals, routines and activities. Contextual references such as organisational norms are therefore created. Whether the learning is authorised, official, or not it takes place anyway all the time (Tracey et al, 1995). The information internalised by the individual is, in turn, transformed into knowledge to be

applied at appropriate moments. This process, whereby individuals acquire knowledge and skills – *and the necessary contextual understanding to be able to apply it appropriately* – is central to the concept of situated learning in communities of practice. (Greeno, 1998; Lave and Wenger, 1991) Lave and Wenger (1991:35) refer to learning as being a crucial part of generative social practices in the real-world. This learning occurs, is embedded *and applied* in specific cultural, social and organisational settings. Formal training, on the other hand (with which most existing studies of transfer are concerned) generally occurs in a separate context from where it is applied. We might therefore, hypothesise that factors influencing the transference of situated learning are, to some extent, different.

Thus the objective of this study is to investigate factors that enable or limit people in their intent to practice what they learn at the workplace under situated conditions, with the ultimate aim of providing a basis for the improvement of learning transfer within organisations.

The over-arching focal question is as follows: w*hat individual and organisation-level factors enable and encourage the transfer of situated learning, and how can existing models of transfer be improved upon to take account of such factors?* More specifically this broad question is broken down into two main areas for the focus of the study:-

1. How can the application of informal learning be promoted at the workplace?
2. What contextual factors can encourage and facilitate the transfer of learning at the workplace?

The study attempts to address these questions in an effort to obtain a clearer picture of the dynamics for the effective transfer of situated learning. This will be carried out through an in depth literature review and analysis of the research findings. On the basis of existing research on transfer, a model of 'situated learning transfer' is constructed and used as an analytical framework for the empirical investigation, which focuses on case studies of two Maltese IT companies.

The research questions above have been developed in order to channel the study in specific directions, namely the firms' attitude vis-à-vis learning and knowledge sharing, the personal development on the part of employees following situated learning instances, and the actual implementation process whereby the new competencies learnt are rendered explicit and put into practice. Culture is of imperative importance for the study since it encompasses a multitude of facets including managerial styles.

To explain the research questions in a little more depth:-

1. *How can the application of informal learning be promoted in the workplace?*

This research question targets the implementation of new learning within the organisation. According to Tracey et al., (1995) learning takes place all the time; therefore it follows that this happens at the workplace too. According to Eraut (2004), learning takes place naturally during work processes. Thus what are the situational 'cues' (Goldstein and Roullier, 1993) that encourage individuals to apply what they have observed, or reflected on? Will this research confirm studies of Chiaburu and Marinova (2005) where the

application of new skills was positively correlated with support? The aim of this study is to explore the awareness and extent of application of informal learning taking place at the workplace. In the next research question a continuation of the process discussed above can be observed.

2. *What contextual factors can encourage and facilitate the transfer of learning at the workplace?*

Mai, (1996) states that, "every organisation is to some degree a learning organisation but (organisations) are differentiated by the degree to which they learn better, faster, or more completely." In their study about the factors that influence informal learning in the workplace, Berg and Chyung (2008) compared the engagement in training situations and in informal learning situations. According to their study, factors impinging on the extent of informal learning and its transfer include personality, the work environment, relationship with colleagues and physical proximity to colleagues. The conclusions of the research undertaken can potentially see some of these contextual factors emerge (or refuted) as a result of the data gathered.

The research questions were designed to lend structure to the investigation, but also to leave the study open to the identification of different factors impinging on the transfer of situated learning at the workplace. In the next section the structure used to pursue this research is outlined.

Structure of the Study

The structure of this study follows the objectives stated earlier; to carry out an investigation of the factors that enable or limit individuals in their intent to practise what they learn at the workplace.

Chapter 2 presents a review of existing literature. The chapter starts with a discussion on the origins of the idea of transfer of learning and its definitions. The major issues and debates in the field are explored and compared through juxtaposing the political standpoints of the various approaches in view of the transfer of learning. The literature review also highlights the inevitable discrepancy created between formal and informal learning and its relation to the workplace. The major contribution of this research is that it focuses primarily on the transfer of situated learning at the workplace, informal and incidental in nature rather than on the transfer of skills learnt on formal learning opportunities (though these are addressed where necessary) . In formal situations the most common issues and debates circled around the barriers of learning transfer are mainly related to the work environment and the climate within the organisation. The major theories are compared and the main issues highlighted in an effort to lay the epistemological and ontological grounds for the proposed research. Finally the chapter reaches its conclusion with the generation of the analytical framework to be used in the empirical investigation. This framework – the 'situated learning transfer model' – is based on existing models of transfer such as Holton's and Baldwin's.

Chapter 3 discusses the essentially qualitative methodology adopted throughout the study. The study is set in the context of situated learning of new knowledge and its application on the job in organisations with factors influencing this transition investigated. Throughout the methodology chapter, the epistemological concepts are unpacked along with the reasons with justification for the approach used in the study. The methods used to analyze the discourse reviewed in the available literature include interviews with stakeholders and workshops with participants. The chapter highlights issues and problems encountered whilst collecting and analyzing data with ethical considerations taken into account throughout the study concluding the chapter.

Chapter 4 entitled "Research Findings and Discussion" deals with the analysis of data collected. The findings are predominantly based on three main aspects including respondents' perceptions of aspects of learning and factors affecting the transfer of situated learning pertaining to the organisational level effect. The study also addressed the 'individual' as an important element in the transfer of learning. The section on the individual level effect identifies the respondents' views related to personality characteristics amongst others. These findings appear to address aspects of the situated learning transfer model that emerged as a result of the literature review. The chapter comes to a close with a discussion on the findings and recommendations for future research.

Chapter 5 is the concluding chapter of this study. It incorporates a graphic representation of the findings together with a summary of key issues emerging from the research. A

typology emerging from a combination of the situated learning transfer model and the findings is also disclosed in this chapter. This typology includes, as its main areas, organisational enhancers of situated learning transfer, instances of situated learning and contextual elements.

The research starts to unfold in the next chapter through a detailed review of available literature pertaining to the area of transfer of learning.

Chapter 2

The Literature Review

Overview

The structure of the study follows the main objectives of the research: to carry out an investigation of factors that enable or limit individuals in their intent to practice what they learn. The research is distinguished from most others owing to its focus on investigating factors effecting transfer of learning at the workplace rather than determining effectiveness of training programs as in Baldwin & Ford, (1988) for instance. The main outcome of this review is a composite 'situated learning transfer model' which builds on and aims at advancing existing models (e.g. Kirkpatrick, 1996; Holton, 1996). This model is then used as a guiding framework for the empirical part of the study.

Throughout this chapter, a literature review is carried out discussing issues pertaining to the different facets of learning within the organisation, in view of how learning through both formal and informal methods can be transferred to the workplace. The history of research on transfer and its evolution over the years are taken into consideration under different aspects, including the evaluation of training, and different issues surrounding transference of new learning material. In doing so, this chapter provides the rationale for the research. It discusses various facets of the research questions in an effort to identify a logical framework for this study.

The unfolding of the major debates and issues on the term 'transfer of learning' sets the scene for this chapter. The relevant issues are various, ranging from economic performance and effectiveness at work to organisational climate. While considering the debates and issues that are stirred up by the issue of transfer of learning, one cannot avoid making a reference to other major issues, namely workplace learning in its different forms and an exploration of types of different forms of evaluation of learning instances together with training measurement models. These topics will be considered throughout this chapter, together with the investigation of different concepts and theories.

The current social aspect of the research problem is then seen in the context of the origins and definitions of the topic. Meanings and understandings of this frequently misused term (transfer) will be investigated so as to establish the meaning of the term for the study leading to an exploration of key theories and concepts governed by the topic. The main theorists and their methods will be juxtaposed.

In an effort to create an emerging composite model that can be used to address the research problem and to investigate factors that affect learning transfer from situated learning opportunities to the workplace, the main outcome of the chapter is an emergent model of the influences on learning transfer. This is referred to as the 'Situated Learning Transfer Model'; it builds on previous models, in particular Holton's (1996) but, crucially, aims to go beyond the confines of such models by recognizing the importance of informal learning.

In subsequent chapters, this model is used as the basis for exploring the determinants of learning transfer in empirical settings.

Contextualizing the proposed research.

Learning takes place continuously. It has become a common belief that for firms to improve their effectiveness learning needs to be at the heart of their operations (Grugulis and Stoyanova, 2005). Conversely, this belief has been questioned by some (Faerman and Ban, 1993 in Leberman et al. 2006) as there seems to be little hard evidence suggesting a link between training, improved performance and employee attitude. Learning opportunities, however, are often over-looked especially when the learning is not deliberate. In acknowledgement of this shortcoming, the study attempts to recognise varieties of learning beyond the formal and the strictly intentional. This will entail the exploration of the different types of learning, both in formal and informal settings, since, potentially, both take place during an individual's life cycle at the workplace. Learning will feature under the different hues of the situations where it occurs; in the training room, during meetings, while working on projects, during mentoring instances, while having 'water tank' discussions (Davenport & Prusak, 1998) or even with trial and error practices on individual basis. The major strength of the study is its focus on situated learning. However, with the premise that both types of learning, formal and informal are thought to be important for organisational prosperity, instances where reference to 'training' is made in this review are not considered unusual.

This review will now move specifically to the issue of transfer and learning transfer models. According to Vermeulen, (2002), transfer in organizations is often a problem. For this reason, taking into consideration the extensive literature on the transfer of learning and Holton's (1996) HRD Evaluation and Research Measurement Model a hypothetical model of learning transfer is constructed, and presented later in the review. This model is then empirically applied and evaluated, as outlined above. More detail pertaining to the proposed model named 'the situated learning transfer model' is described in later sections. The model takes into consideration different aspects of the workplace learning process, and aims to identify various factors that impact on the transfer of learning at the workplace. This learning is extended to job-related skills acquired through the process of work and formal training opportunities while other skills not directly related to the job are also considered.

The end result of the study shall see the refinement of the situated learning transfer model, through the analysis of data collected, together with recommendations that could make learning a more visible part of working life. The contextual factors that promote and/or inhibit the transference of learning material to the workplace will play a major role since these factors impinge on the end result within organisation.

Before moving on, it is worth emphasising that most of the previous studies have kept formal learning as the main area of research for transfer of learning. This project is different and of value because its main interest is identifying factors that affect transfer of

learning also from an informal learning perspective. In this respect, Cheng and Ho (2001: 104), state that more efforts need to be devoted to the investigation of 'relationships between work-environment factors with learning and transfer so as to develop intervening strategies by adjusting these factors to a favourable level. The study aims to pursue such an investigation.

Summary of the research objectives:

As will become clear through this literature review, the research is intended to:

1. Investigate factors that enable or limit employees to practise what they learn mainly through situated learning at the workplace.
2. Highlight methods by which the identified factors can be manipulated to optimize the level of transfer.
3. Suggest possible improvements on existing models of learning transfer as a result of insights from the literature review and empirical research.

Working definitions.

The main focus of the literature review is workplace learning, after taking into consideration work carried out in research and policy making communities. The review will discuss different forms of learning and their desired effects. In recent years, writers and researchers have increasingly sought to emphasise the idea that learning does not only happen in class. It is now described as continuous; part of everyday life and, therefore, it

also happens at work (Billet, 2001). Reference will also be made to different concepts within the broad term 'learning'. Formal and informal learning are often used to distinguish mostly between on-the-job and off-the-job learning (though the distinction is not always this simple, of course). This is done in view of Stern and Sommerlad's (1999: 1) assertion that workplace learning has acquired visibility and saliency because, "it sits at the juncture of new thinking concerning the nature of work and about the modern enterprise in a global economy". The behaviourist and individualist notion of representing learning in terms of a teacher (expert) pouring out knowledge or accepted truths is no longer seen to constitute the beginning and end all of learning. The contested nature of this type of learning will not be discussed here. However, the classroom setting as a means of knowledge acquisition will be explored below.

Definitions of the main terms used throughout the literature review are given below since 'many texts use these terms without any clear definition or employ conflicting definitions and boundaries' (Malcolm et al., 2003: 313). It was thought that defining the working definitions upfront could signpost the research.

Transfer of learning:- referring to formal training instances, Holton, Bates, Seyler and Carvalho, (1997), define transfer of learning as the degree to which trainees apply knowledge, skills and attitudes they gain in training to their jobs. In the framework of the study, transfer of informal situated learning occurs in the same context in which the learning occurred that is the workplace. For the purpose of the study, the term learning

transfer is used interchangeably with the term application referring to application of newly learnt material to workplace situations.

Learning:- Marsick (1987:4) describes learning as, 'the way in which individuals or groups acquire, interpret, reorganise, change or assimilate a related cluster of information, skills and feelings.'

Formal Learning:- this definition taken from Malcolm et al (2003: 314) illustrates the conventional view of formal learning as a static and rigid process:-

> "acquisitional and individual learning; vertical or propositional knowledge within educational institutions."

A more detailed definition is given by Gerber (1998: 168)

> "… that is organised by professional educators, where there is a defined curriculum or programme, and which often leads to a qualification or credential, e.g. a degree or diploma in engineering or health science."

Informal Learning takes place in settings where knowledge and expertise are in a dynamic relationship within the contexts in which they emerge and are used.

Malcolm et al (2003: 314) appropriately define informal learning as: *'concerned primarily with learning outside educational institutions: everyday learning.'*

Gerber (1998: 168) also defines informal learning as follows:

> "…in which people learning from their experiences, e.g. how to improve one's communication skills though working on a team that builds portable housing accommodation".

They go on to quote Sfard, (1998) in saying that "this dimension focused largely on workplace learning drawing on socio-cultural theories of learning within a broadly participatory perspective." It is felt that this definition captures the essence of what is intended by informal learning for the aims of the study since it gives a multidimensional perspective of the concept through social and cultural issues (discussed below). Formal and informal learning at times are superficially considered as separate models. The debate unfolds in a subsequent section where the possible combination or mutual exclusivity of each one is briefly explored.

Following Garavan, (1997), the induction and practice of new methods through both formal and informal methods of learning such as mentoring and coaching on the job shall be referred to as **learning instance/opportunity**. In his 1997 paper, Garavan considered the difference in meaning and the increasing alignment for the terms training, development, education and learning. Ultimately, he concludes that training, development and education should be considered as an integrated whole, with learning acting as the glue that keeps them together.

Incidental learning. within the category of informal learning (Marsick and Watkins, 2001) we find incidental learning taking place outside formally structured activities. These activities could include '*interpersonal interaction, sensing the organisational culture or trial-and-error experimentation. As such incidental learning is never planned or intentional*.' (Marsick and Watkins, 1990). In developing the concept of incidental learning, Marsick and Watkins (2001: 25) define it as '*a by-product of some other activity, such as task accomplishment, interpersonal interaction, sensing the organisational culture, trial-and-error experimentation, or even formal learning*.'

Their work echoes that of Eraut (2007; Eraut et al, 1998), which seeks to challenge the traditional emphasis on formal learning, and promotes the situational aspect of learning. In this vein, one of the main tenets of Eraut's work is the view that learning is very often a 'by-product' of normal workplace activity.

Against this expanding background of research on informal and incidental learning, the study seeks to explore how employees can apply what they already know and what they learn during their life cycle at the workplace. This does not refer solely to material learnt at a university or acquired from a course in a classroom setting (although such learning is not excluded). It is recognized that a great deal of learning takes place in situated conditions through social interaction. (Lave and Wenger, 1991). The workplace and workers are set in a social, political and economic context within which they interact. However, it must be noted that notwithstanding the learning that takes place in situated contexts and the work

that Lave and Wenger did in the area, it must be acknowledged that the political dimensions of the workplace play a critical role in the process of learning. In fact, the authors themselves recognise that their study of situated learning does not explore such political situations where power could impinge on the type of learning taking place. Fuller et al (2005:54) make reference to 'boundaries' in employment contexts. Boundaries and power levels within the organisation affect the way in which the learning constitution at the workplace takes place.

It is therefore difficult to draw a clear demarcation between the two types of learning at the workplace. These concepts, which will be explored at greater length below, also open up the debate on the sharing of new information in situated contexts.

The application of the new 'learning' acquired at the workplace shall be referred to as **Transfer**:- Cheng and Ho (2001) quote Baldwin and Ford (1988) and define transfer of training as:

> "the application of knowledge, skills and attitudes learned from training on the job and subsequent maintenance over a certain period of time."

Given that the focus of the study is transfer of learning in a broader sense, this definition is only used for conceptual purposes related to the 'application of knowledge, skills and

attitudes learnt'. The element of formal learning through off the job training is not the focal point of this study.

Workplace learning: - the foundation for the application of new learning.

For some time now, there has been growing consensus that instability in the modern working environment has become a key ingredient that challenges organisations constantly (Argyris and Schon, 1978). Under this view of constant change, the importance of treating learning as an ongoing process rather than a sporadic event becomes increasingly emphasised (Senker and Hyman, 2004). As part of these developing debates over the nature and importance of workplace learning, the significance of informal learning has come to the fore.

Traditionally, learning has been associated with classroom settings and "the role of informal learning was largely neglected" (Eraut, 2007), directing emphasis and capital on formal learning like training programs. Billet, (2001) criticizes this conventional view stating that it is ill-focused and that the absence of 'qualified teachers' does not make the workplace an inferior learning environment. This claim by Billet further justifies the research in view of the contribution that it could make to workplace learning under situated conditions through the investigation of factors that impinge on the transfer or application of this learning. Workplace learning has also been criticised as 'unstructured', another affirmation that Billet, (2001) discounts, claiming that norms, values and common practices themselves provide a structure for learning experiences. Marsick and Volpe

(1999:4) on the other hand claim that the value of informal learning is due to it being 'predominantly unstructured, experiential and non-institutional'. The cultural and structural characteristics of the organisation may therefore shape the 'learning landscape' and affect the effectiveness of the application of informal learning. Lave, (1990) refers to structure as the 'learning curriculum', emphasising the difference from a 'teaching curriculum', as learning takes place in a social context through engagement and co-participation in real activities with other members of the workplace community. In this research the curriculum refers to the structure of learning opportunities in situated instances. Gherardi et al (1998) introduce the concept of the 'situated curriculum' which is embedded in the habits and traditions of the community. The focus of the thesis addresses the value of the often neglected aspects of the transfer of informal learning within the workplace through situated conditions as opposed to other more evidently, apparent learning taking place formally which captured the attention of most research until recently. The 'situated curriculum' (Gherardi et al., 1998) could emerge as an important factor in the process of the transfer of such learning.

Although best practice methods regarding what conditions 'prompt access and utilisation for learning' are yet to be fully understood (Marsick, 1994:28), much research has been conducted with the aim of exploiting and utilizing better the knowledge residing and created in organisations. For example, we might turn to Tennant et al's (2002) claim that Japanese industries have managed to tap on the right combination of training and extraction of new knowledge deposited in the organisation through exercises of continuous improvement such as the balanced-scorecard or the identification of the Seven Wastes in

manufacturing. In this model, workplace learning is seen as context-based and culturally bound. Processes and routines set in place within the organisation could provide fertile grounds for situated learning that individuals unknowingly tap on to improve organisational performance. Individuals in these organisations appear to learn tasks pertinent to the requirements of their roles within the organisation (Muhamad and Idris, 2005) thereby, potentially, experiencing a more straightforward process in terms of applying what they learn to their work. . 'Adaptive learning' (Appelbaum & Goransson, 1997) can be observed through everyday activities and other structured initiatives allowing employers to see the benefits of learning interventions (Tennant et al, 2002). This however, is not intended to be generalized to all workplace learning situations. In a similar vein, Nonaka and Takeuchi's (1995) well-known work explores the ways in which 'tacit' knowledge can be rendered explicit, and therefore more amenable to codification and conscious application. Their research therefore directly relates to the ways in which the learning transfer process can be improved by recognising the importance of informal learning and uncodified knowledge.

Informal learning, therefore, is considered important, as many writers see it as a key determinant of organisational success as it takes place in daily working situations (Tjepkema, 2002) without having any clear goals a priori. Therefore, most of the time, the learner is unaware of the process. Fuller et al, (2003c) explored the relationship between informal learning and performance. Their essential conclusion is that, although not proven, there appears to be evidence to support a connection between informal learning and

individual and organisational performance and this suggests that such learning is at some level being transferred, or applied.

There is perhaps a growing recognition that informal learning is important. However, there has arguably been a tendency in some quarters to assume that the process of applying informally-acquired knowledge is largely unproblematic. For example, the work of Eraut et al. (1998), while illuminating ways in which different types of informal learning occur, has little to say about whether and how such learning impacts on the way in which people work. Their broad qualitative study of learning in engineering, business and healthcare enterprises concluded that that there are two main highlights emerging from interviews carried out: on the whole, learning from other people and the challenge of the job itself proved to be the most important dimensions of learning. Unfortunately the difficulty of measuring informal learning and its impact makes it difficult to define its actual benefits. The fact that indicators cannot necessarily fit different situations for measurement also constitutes another issue for the affirmation of informal learning at work. In general, the processes by which instances of informal learning are 'transferred', and thereby impact on work behaviours, are little understood. It is hoped that the study will go some way towards addressing this gap in the current literature.

Is Learning an Embedded Process?

Raz and Fadlon (2005) view learning as situated. They claim that meaning is embedded and highly contextualised while the knowledge that is transmitted is not entirely

'objective'. It follows that in such a social aspect, knowledge could therefore be imbued with influences from the social environment, habits and the community where it is taking place. Edmondson (1999) claims that knowledge is embedded in interactions and shared beliefs. Aspects of interaction, the ones indicated by Prusak and Davenport (1987) where individuals discuss informally in social exchanges by the 'water tank' lead to the focus of the study. How do individuals then go back and apply what they spoke about when needed? In his studies about photocopier technicians, where troubleshooting and learning from experience and listening to others played an important role in gaining expertise on the job, Orr (1990, 1996) highlights the discrepancy between procedural learning and accidental or informal learning. A 'didactical' process is not apparent as skills are seemingly developed through the process of work itself. Orr's work also supports and justifies the need created by this research to identify factors that impinge on the application of learning in the workplace.

Billet (2004) further supports the validity of embedded learning and its contextual aspects in his conclusions by saying that individuals instinctively and, at times unconsciously, start to learn new methods of doing business as a result of changes around them which instigate alterations in their thinking patterns and behaviour. In this instance, Billet also implies that the application of learning is taking place successfully, although there may be a lack of awareness. Damarin (1993: 28) further personifies the process of situated learning by stating that "knowledge is viewed as co-produced by the learner and the situation; engagement of the learner in this situation is critical". Damarin sees contextual learning as a key ingredient along with the actors, a concept which has been discounted in many

learning transfer models as they mainly focused on trainee characteristics, training design and work environment aspects. As will be discussed in greater depth in later sections, we can note that Holton (1996) incorporates the different elements that include the norms and values of the firm under the heading of 'environmental elements'. However, this element appears to be missing in Kirkpatrick's model.

The importance of such embedded or situated learning has also been emphasised by those writers who have used apprenticeship as a lens for examining collective workplace learning and transfer processes. For example, Lave and Wenger invoked the concept of social cognition through their idea of a community of practice in order to highlight the importance of social interactions to the effective transfer of learning. Here the learners take part in a community of practice (Lave and Wenger, 1991). Participation in the practices of the community, over time, enable the learner (or 'novice') to acquire the necessary knowledge, skills, abilities and attitudes and, crucially, to apply these in appropriate ways. This is often seen in craft or trade apprenticeships (McLellan, 1994; Fuller and Unwin, 2003). *"…Cognitive apprenticeship supports learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity*" (ibid., p.5).

The study of Fuller and Unwin (2003) which focuses on new entrants (apprentices) in three different companies highlights the role of workplace environment vividly together with the effect it had on the learning process of the apprentice and seems to echo this principle. The value of creating the need and the want to learn – and to apply that learning – was created

in one company through a programme that struck a balance between 'formal' learning at the college and 'informal' learning at the workplace. Apprentices were gradually involved in company life, including residential courses and job rotation, an experience that was not shared by their counterparts in other companies. Apprentices in other companies became proficient in one community of practice but were unaware of the needs of other communities within the organisation, thus being unable to picture the company as one whole. In turn, this would lead to perceived misunderstandings of organisational goals and priorities since no experience of what goes on in other sections takes place. Application of new learning in this case is only limited to the department where it takes place. Adaptation and application to other areas of the organisation could be more difficult due to lack of information and experience that the individual may have in other sections. Through their study, Fuller and Unwin challenge the simplistic assumption that all new entrants go on to become competent employees in a linear process. Fuller and Unwin's (2003) expansive learning environment framework addresses the integration of new starters with experts by suggesting that encouraging new entrants to gain a broad experience across the organisation could in turn have a positive effect on the application of new learning across the organisation.

In view of Fuller and Unwin's (2003) 'expansive' and 'restrictive' approach to apprenticeship, apprentices develop as persons according to the opportunities or 'learning territory' they are exposed to within the organisation (intrinsic motivation aside). Fuller and Unwin (2003) describe 'expansive' environments where the opportunities to learn are plentiful. They also describe 'restrictive' environments where opportunities to learn and to

apply new learning are limited. Providing opportunities to reflect on their practice, to think ahead and plan their career, and the opportunity to 'develop new identities through belonging to multiple communities of practice', would make apprentices mature and accountable workers, as well as ingrain them into a goal setting culture rather than approaching processes with no clear end in mind. This meta-cognitive stance would put apprentices in a position to evaluate tasks performed and identify points for improvement. It must be noted at this point that both vertical progression entailing greater responsibilities usually associated with a higher pay and title, and horizontal progression involving the assumption of broader responsibilities throughout the work experience are vital to the successful integration of new comers into any community of practice. Learning is however continuous (Eraut, 2007) and so is the possibility to transfer newly learnt material to situations at the workplace. This progression within the workplace is of particular interest in this context as it could potentially confirm the research questions in view of the factors that influence the transfer of situated learning.

In summary, we can say that interest in the following modes of (non-formal) learning has increased significantly in recent years. However, as will be discussed, this interest has not perhaps been matched in studies of transfer.

The ultimate aim of the research is to identify factors that affect the application of new learning. Accordingly, the purpose of this section is to provide a brief background to the research evidence on informal and situated types of workplace learning. However, as will

be seen below, the most popular models of learning transfer (Baldwin and Ford, 1988, Kirkpatrick, 1994, Holton, 1996), do not address informal learning or the informal transfer of learning. Workplace characteristics, namely the work environment and contextual characteristics such as the nature of the task and the learning experience, also need to be taken into consideration when planning for transfer (Belling and Kim, 2003). Such concerns have arguably often been neglected in existing models of learning transfer. The next section outlines the predominance and relevance of learning transfer in training programs, until recently and moves towards the need and validity for the application of informal learning.

Transfer of learning material to the workplace: why is it important?

Many writers have discussed and insisted on the importance of effectively designed and strategically-integrated learning interventions, and on initiatives that facilitate and promote the transfer of learning. However, as will be seen, many have also identified the barriers to such initiatives, namely the subjective individual conditions or contextual factors inherent within the organisational context. Writers and policy makers have in recent years advocated the need for organisations to capitalize more on their human and intellectual assets in order to enhance their competitive potential. This need is expressed by Donovan et al., (2001: 221) when they state that:

> "New forms of business structure and management are required to effectively exploit intellectual assets leading to a renewed focus on the development of human resources. At the same time the pace of change has

quickened leading to a growing emphasis on the need for continuous upskilling"

The issue of learning transfer has become increasingly popular with HRD researchers (Kontoghiorghes, 2004) in line with the growing interest in the knowledge economy. Notwithstanding claims that learning is considered to be important for future organisational success, the effectiveness of training is often challenged by organisations on the grounds that it can be extremely difficult to demonstrate a positive return on investment. It has been reported that despite the vast amounts of money organisations spend on employee training, only about 10% – 15% of it is actually transferred back to the workplace (Baldwin and Ford 1988; Broad and Newstrom, 1992; Burke and Baldwin. 1999; Facteau et al., 1995) in Constantine Kontoghiorghes, (2004). Such evidence suggests a pressing need to understand better the transfer process.

It is frequently said that training programmes are very often inspiring and motivating for participants. Throughout interventions and at the end of the program, many feel that they have learnt much useful material that could be applied to the daily work routine to improve processes (Donovan et al, 2001, Vermeulen. 2002). However, many writers have claimed that, once back at work most of the ideas if not all, are doomed to vaporize in the face of 'routine' that does not allow flexibility to introduce new thoughts. In such scenarios, a participant does not get to practise what was learnt. This transfer gap (Vermeulen, 2002) occurs each time participants fail to apply, or at least practise what was learnt on a training

course. Often employees do not struggle with the training material; they are merely prevented from having the opportunity to put the new knowledge to good use, therefore preventing positive job performance changes (Holton, et. Al. 2000; Rossett, 1997). This transfer gap is becoming increasingly accepted in literature on education and training, but, until now writers have focussed their efforts on understanding the (non-) application of formal learning rather than the existence of informal learning. Understanding the triggers for situated learning and opportunities for use of such learning are considered to be important elements to be addressed by the study as opposed to most formal learning solutions. In contrast to formal learning, the informal type occurs as a by-product (Eraut, 2007) of incidental conversations or other social happenings at the workplace that go unnoticed but potentially influence individual ways of behaviour and attitudes. Informal learning could therefore be considered as a critical input into the learning fabric of organisations.

On the other hand, literature on transfer may still have much to tell us in terms of organisational conditions, favourable or otherwise, influencing the application of knowledge and skills. For example, although training and acquisition of new knowledge are seen as the way forward in an ever, more competitive business world, their value is often discarded in the face of 'priorities'. Donovan et al., (2001:221) claim that:

> "Yet despite the substantial investment of valuable resources, the information and skills that are learned in training may never be actually applied on the workplace."

Several factors have been highlighted in relation to this claim. The work environment, trainee characteristics and motivation to transfer (Baldwin & Ford, 1988) are the most common and known causes to which the ineffectiveness of training has been attributed since the early days of research on learning transfer. Yet, as previously observed, these studies, and the models of transfer produced, have tended to focus exclusively on the transfer of learning from formal learning environments. There is thus something of a gap in the literature in terms of transfer of informal learning, and it is this gap that the study aims to address. The problems involved in measuring the extent to which learning is transferred is clearly an issue for organisations bound by financial burdens that often do not justify results expected by employers. Economic approaches to evaluation of training, in fact, are inclined to focus on the return on investment of the training intervention. In Human Capital Theory, for instance, the focus lies very much on returns to investment in training (Becker, 1993). This arguably does not provide a balanced perspective however since there are other factors involved. Donovan et al. (2001) find Holton's evaluation and research measurement model more 'holistic' in its approach as it encompasses factors on different levels in an organisation.

Whether training takes place on-the-job or off-the-job, whether employees are aware of the learning process or not, the intake and absorption of new material take place in individuals all the time (Billet, 2001, Eraut, 2007). Non-formal types of learning, and the 'tacit' forms of knowledge to which they can give rise, are increasingly seen as crucial organisational resources in workplace learning literature. Many writers argue that this stored knowledge needs to be shared and regenerated to improve organisational competitiveness (Senge,

1990). In attempting to explain how this might occur, Nonaka and Tackeuchi (1991) and Dixon (1999) separately make direct references to the organisational learning cycle. Essentially, this cycle involves the learning and sharing of experiences at the workplace with the aim of relentlessly capturing all potential resources and making knowledge available to all. Knowledge is therefore created and used through collaboration. Dixon, (1999) identifies four steps within this cycle:-

1. Widespread generation of information
2. Integration of new information into the organisational context
3. Collective interpretation of information
4. Having authority to take responsible action based on the interpreted meaning.

According to Dixon (1999) and Nonaka and Takeuchi (1991), this organisational learning cycle must be constantly in operation so that new knowledge is created, captured and shared in teams (Nonaka and Tackeuchi, 1991). In such accounts, creating situations where employees learn together in a workplace setting contextualises the learning crystallisation in the organisational memory because of the situativity of the action or process learnt. Nonaka and Takeuchi (1995) illustrate this with an example how, through various mechanism like quality circles, Honda encouraged employees to share their knowledge in order to come up with new products. Such activities could potentially have a high value in the application of learning taking place at the workplace: - thus, the transfer of material learnt through different situations could be facilitated and shared. These practices could potentially have important implications on team performance.

In formal learning situations, the challenge for implementation surfaces when trainees try to transfer new 'knowledge' on-the-job (Vermeulen. 2002). Often the organisation is not ready to allow flexibility for new adjustments and, in such cases trainees not only do not implement what they have learnt but their motivation drops, owing to feelings of confusion, and frustration at the idea that new ways that could improve work processes cannot be put to practice (Holton et al., 2000:333).

The issues questioning the validity of learning situations and a search for a best way to facilitate transfer of learning to the workplace do not stop there. The effectiveness of training programs is also often linked to a financial output by business entities. In 1997, a study carried out by Lakewood Research (in Holton et al. 2000) indicated that in the United States alone companies with over one hundred employees invested $58.6 billion in direct costs on formal training. The study highlights that out of the total expenditure including all direct and indirect costs only 10 percent is indicated as resulting in an improved on-the-job performance. Holton and Naquin (2005:258) refresh this position by stating that "in 2003, $62 billion was spent by publicly traded organisations with more than one hundred employees on formal training." If we accept that business organisations require some evidence of return on their investments, then we should also perhaps accept that they will want to see that employee development activity has a tangible and positive impact on the way in which they work. For these reasons alone, investigating informal methods of learning embedded in everyday activity and their application at the work place could potentially tap on cost effective and readily available sources of knowledge.

For instance, Rodriguez and Gregory, (2005) studied transfer of learning in the service industry. With a twist on the direct impact on outcomes, improved performance was not seen through the cost saving perspective, but rather from an improved service level leading to repeat business by the client. They focused on the human element in the picture in view of high quality service leading to increased revenues. Rodriguez and Gregory, (2005) took an approach resonant with the aims of the study; formal learning was considered in terms of 'the importation' of new knowledge into the organisation. Some questions in the interview schedule in the data gathering exercise clearly refer to instances where off-the-job learning opportunities could have meant the application of new knowledge on the job either individually or by spreading the practice among colleagues. The aim here is not to measure the transference of such skills empirically but rather to probe into the importance given to application of off-the-job learning opportunities by members of staff, and to investigate reasons why such knowledge is not always applied on the job.

The emerging picture might appear to suggest that many writers are fairly pessimistic about the practical assimilation of newly acquired knowledge into everyday workplace issues. Some consider investments in training as rather futile attempts at improving competitivity (Schonewille, 2001; in Rodriguez and Gregory, 2005, Kontoghiorghes, 2001). These comments could potentially provide yet another opportunity to learn more on the impact of informal learning at the workplace and how it is applied to improve processes and organisational effectiveness.

Given that evidence in favour of informal learning is still emerging, and that data regarding formal learning interventions are substantial, it is felt that referring to formal learning, namely training in contrast to informal learning, could better substantiate the study. Tennant et al., (2002) state that compared to the European manufacturing companies, the Japanese in particular can boast higher levels of transfer and can claim success as a result of training initiatives. Quoting Womack et al. (1990), Tennant et al. (2002: 231) state that, 'performance improvements in terms of cost, quality and delivery' are better as a result of training in Japanese companies. This certainly does not necessarily mean that pedagogical foundations of training are better in Japan than in Western countries. The possibility is that transfer sees more success stories in Japan because it is planned for strategically and designed into the jobs themselves. Tenant et al. (2002) claim that a number of approaches used in Japan, like the 'balanced score-card' are aimed at developing organisational and individual competencies to enable the achievement of business goals. It is felt that these activities encourage the transfer of learning at the workplace as strategic planning pertaining to long and short term business goals are directly related to training (Tennant et al., 2002:231). The 'Japanese approach' to strategic planning is said to involve appropriate job design to maximise employees' skills following learning interventions and a performance driven environment where goals are set at the outset. Linking business models such as quality circles, seven wastes and policy deployment has proven to be a winning combination for many Japanese firms. Employing such a wide perspective of the role of training; arguably leads to the necessity of creating a harmonious synchronization between different departments in firms. Hence, a link exists between strategic direction and implementation of new knowledge by organisations and the role of training. In

exploring this link, Strach and Everett (2006: 57) found that knowledge management 'is embedded in the Japanese organisational system as a consequence of other management practices and methods'. According to these authors, the spontaneity and intentional overlap of different backgrounds and expertise help to promote successful knowledge transfer.

In their research on building a theory on knowledge transfer in Japanese multinationals, Strach and Everett (2006:60) examined the main difference between Japanese and Western firms in view of transference of newly learnt material. They found that (based on Hedlund and Nonaka, 2003) 'while articulation is stressed in Western firms, internalisation is prevalent in Japanese companies.' In this case, articulation refers to knowledge that is changed from its tacit state to its explicit state, therefore increasing the potential for transmission of data. Internalisation goes a step further and can potentially be interpreted as the equivalent of 'transfer of learning' in that 'articulated knowledge is experienced in its unconscious form, essentially altering the knowledge from explicit to implicit' (Strach and Everett 2006:60).

This section has outlined some of the current thinking on learning transfer, the importance accorded to it and various contextual barriers that can inhibit transfer. It is thus becoming clearer that most of the current learning transfer studies ignore the aspect of learning through forms other than training programs.

Referring once more to informal learning, it is important to keep in mind the role of 'experience' in the learning process. Ingram and Simons (2002) found that transferring experience can be time consuming and laborious and individuals may choose not to apply what they experience in future owing to these factors. It is felt that the research is predominantly different in intent as it addresses the importance of informal learning where no formal training interventions have occurred. Indeed, the workplace learning literature increasingly rests on the conclusion that most learning takes place through the process of work itself. There is no apparent intervention, no teacher or trainer, just the 'learner' doing his/her job and interacting with other individuals. Yet, while such learning is now being viewed as important, the processes through which it is applied are only dimly understood. Leberman et al (2006) claim that:

> "Transfer relates to both process and outcome. Every time learning occurs, previous learning is used as a building block."

This assertion by Leberman et al, (2006) is also referred to by Enos et al. (2003). They claim that making connections between past experiences and current situations plays a critical part in supporting the transfer of learning. Other research also seems to suggest common grounds between the new learning situations and actual work situations (Stolovitch and Yapi, 1997). But there is still some way to go in terms of fully appreciating how informal and situated learning impact on work behaviours. How, we may ask, is such learning 'transferred'? What challenges, barriers or enablers are faced in the application of this less formal learning?

Key issues facing the transfer of learning at the workplace

While acknowledging that 'learning is critical for organisational performance in the current economic landscape (Singer and Edmondson, 2006), this section will now address some common themes relating to factors purported to support or inhibit the effective transfer of learning. For example, the issues of organisational environments and individual characteristics will be explored, in accordance with the conventional paradigm of learning transfer, where most of the work has addressed specifically issues and challenges of transferring learning from *formal* learning situations.

Linking transfer of learning to job competence, Oates (1992), states that ability is related to how individuals draw on different areas of knowledge and bring them together to real situations under the right conditions. He observes that transfer of learning is not an automatic process; on the contrary, a lot of effort has to be invested along with timely interventions. However, there are various difficulties at the learning acquisition stage that are not immediately apparent. Tenant et al. (2002) in their research on UK manufacturing companies identified a number of difficulties including the depth of the training, the relevance of content, and the lack of linkage to the strategic context of organisations. The authors claim that such examples relating to training programmes can prevent learning interventions from improving productivity, overall job performance and satisfaction. In an attempt to trace the connection between transfer and performance, Lynch, Leo and Downing (2006) identified clear themes related to transfer of learning emerging from their research on how programmes based on situated learning theory resulted in change

situations. Workload, receptive teams and learning interventions constituted the main themes that effected transfer of learning in a context dependent learning environment. In the development of work environment factors affecting workplace learning transfer (in training design), Russ-Eft (2002) influenced by Baldwin and Ford (1988), Rouillier and Goldstein (1993) and Holton et al (1997, 2000) identified situational elements that could impinge on the rate and quality of transfer. The situational elements include; supervisor support, supervisor sanction, workload, opportunity to use, and peer support.[1] The element of opportunity to use new learning is also echoed in a study conducted by Cheng and Ho (1998). However, in researching attitudinal and organisational factors on transfer outcome, they added other elements such as transfer reward (intrinsic and extrinsic), and transfer motivation. Although targeted at formal learning interventions, these situational elements could arguably lend themselves to informal learning instances and their transfer to practise in problem solving or other situations. At this point it becomes difficult to determine when learning is taking place to be able to measure the rate of transfer, if available.

Focusing on another human element in the equation of transfer of (learning) training, Cheng and Ho, (2001) observe that:

> "It is clear that practitioners usually adopt a trial and error approach to manage training transfer, which can be costly and time-consuming and cannot deliver a desirable result. They do not have a thorough understanding of the underlying principles, and so they are often puzzled by the training transfer outcomes.

[1] Although seen from a 'training' perspective, these situational factors bear a striking similarity to what Fuller and Unwin (2003) call an 'expansive learning environment when investigating communities of practice and informal learning patterns.

[2] Data pertaining specifically to the IT sector is not currently available. However between January and March

> Therefore, they need to rely on good transfer theories since a good theory that withstands rigorous empirical testing could offer valuable advice"

This statement is further supported by Dunne et al., in Coffield (2000:109),who claim that:

> "the evidence indicates that transfer is unlikely to occur unless intentionally taught for, and that teaching for transfer requires high levels of pedagogical skill".

There is thus some support for the notion that the human element under the form of planning and execution of the learning intervention plays, a critical role in the effectiveness of learning interventions. It is suggested that these aspects are not excluded from evaluation methods that measure the effectiveness of learning instances. This could be another critical observation when on the job learning takes place. With the subject of situativity in the background, Eraut's (2004) stages of transfer of knowledge from education at the workplace could be taken into account. He argues that there are five stages to deliberate upon:

1. Extraction of potentially relevant knowledge from the context(s) of its acquisition and previous use
2. Understanding the new situation – a process that often depends on informal social learning
3. Recognizing what knowledge and skills are relevant

4. Transforming them to fit the new situation
5. Integrating them with other knowledge and skills in order to think/act/communicate in the new situation

Taken from Eraut (2004:256)

Once more, we note concepts similar to those cited by researchers Baldwin & Magjuka (1991, as cited in Tracey et al., 1995), who map out the transfer as starting from the transmission of correct information to the validity and usefulness of a training program or other learning interventions to recipients, the trainees. The crucial difference between Eraut's model and most others is that it is applicable to the transfer of *informal* learning, where tacit knowledge needs to be made explicit before it can be transferred. Other models tend to assume that knowledge and skills are already explicit before the transfer process occurs (stage 1 of his model). Eraut (2004) moves on to a second stage, where the acquisition of newly acquired knowledge is juxtaposed with the identity change or expected behaviour as a result of the learning experience. Social expectations at the workplace could influence the extent to which knowledge is applied and used. It must be noticed that the five stages involve cognitive action and the complete involvement of the human element. Therefore, learner motivation to apply what is learnt needs to be present in order to effectively transfer any newly acquired knowledge.

The workplace plays another key role in establishing the extent of transfer of new learning, including new attitudes and skills assimilated during training interventions (Pidd, 2004) or

as a result of situated learning occurring through the process of work as described by Eraut (2004). Terms, including 'transfer climate' which refer to situational cues and consequences that determine the extent of transfer of new learning (Goldstein and Roullier, 1993), 'supervisory support' and 'peer support' (Burke and Baldwin, 1999) have become increasingly popular in allocating possible factors that influence the transfer of learning and, therefore, the spreading of new attitudes. Identifying possible opportunities to implement learnt skills on the job is another variable acquiring increasing importance, which evidence is shown by Ford and Weissbein (1997), who have conducted extensive research investigating the influences on transfer within workplace situations and scenarios.

Research findings on the exact extent to which transfer is influenced, through transfer climate and support from others at work, is still inconsistent (Pidd, 2004). In support of 'transfer climate', especially in terms of the support or otherwise offered by co-workers, Smith-Crowe et al., (2003), concluded that dialogue, practice and behavioural modelling proved to be effective in promoting transfer skills and knowledge learnt through safety and health training. Smith-Jentsch et al. (2001) illustrate this notion in their research in a flight training environment where supportive environment and co-operative team leaders resulted in individuals manifesting newly acquired skills and attitudes. Chiaburu and Marinova (2005) also found a positive relationship between support and skill transfer. On the other hand, Clarke (2002) discovered that the lack of back-up from co-workers was a major impediment to the effective transfer of learning. The lack of back-up was manifested in everyday attitudes, such as discounting the importance of feedback and emotional support on projects. The findings of Clarke (2002) back up the claim of Roullier and Goldstein

(1993), who concluded that social signals stemming from group practices, such as rules and norms resulting in accepted and shared behaviours, and possibly the resistance to change, could contribute to the transfer climate. However, Axtell et al., (1997), found that what influenced the transfer of 'soft' skills training was not managerial support but rather criteria mentioned earlier, including the trainee's motivation to transfer and the perceived relevance of training. Rouiller and Goldstein (1993) classify transfer climate items into two main categories: situational cues that present individuals with the opportunity to use the newly learnt material, and consequences that affect the further use of newly acquired knowledge on use.

The notion of a 'climate' that facilitates or even encourages the process of learning transfer raises the point that it is not simply organisational structures, systems or mechanisms that can aid the transfer process; the cultural characteristics of the workplace may also have an important role to play. In this respect, some writers have begun to examine particular characteristics of cultures or climates that might support (or inhibit) learning transfer. Bates and Khasawneh (2005) for instance, have researched organisational learning extensively, with a focus on culture and climate and how these could possibly influence the level of transfer in the organisation. They quote Mai (1996) when stating "every organisation is to some degree a learning organisation but is differentiated by the degree to which it learns better, faster, or more completely". The extent to which learning takes place is dependent on culture that is woven into the organisation. The 'shared meanings and manifestations of organisational behaviour' (Kopelman et al, 1990:284) determine the level of involvement of members within the said organisation. In an organisation where

there is a learning culture, the anticipation and adaptation to changing forces in the changing environment are more readily embraced (Bates & Khasawneh, 2005:98). Organisational norms indirectly impinge on the value given to the learning culture embedded in the structure, while the context set for the exchange and flow of communication, including giving and accepting feedback, sharing of ideas and the brainstorming of methods of practice, is tightly linked to the environment fostered in the organisation.

This initial discussion has served to outline the foundations of the literature review and to establish the main definitions used throughout the study. In the next sections, the models that gave rise to and influenced the 'Situated Learning Transfer Model' will be put forward, explored and discussed.

Practical Issues Involved in Assessing the Extent of Learning Transfer

Many writers have considered the practical challenges faced when attempting to assess the extent to which learning has been transferred. For example, the issue of *when* to carry out any assessment is one that has been addressed by Tracey et al. (1995), who noticed that the period covering the return from a training course is crucial in determining the facilitation of transfer. It appears that the time period immediately after training could be the best time to evaluate the outcomes of training interventions and, therefore, the possibility for transfer (Wexley and Baldwin, 1996). Baldwin & Ford, (1988), and Tannenbaum & Yukl (1992),

amongst others, point out that the period immediately succeeding training is a time fame to explore in order to study the effect that training programs have on performance at work. Burke (1997) argues that rigorous empirical investigation of transfer of learning is scarce. On the other hand, numerical findings alone do not produce the quality and nature of results of transfer of learning. Collecting participants' comments about perceived effectiveness of training programmes could put us in a better position to analyse the phenomenon of transfer (Cooke, 2000). The stories of trainees returning to the workplace following training have been given little attention when they could be rich in qualitative evidence that could shed a different light on factors influencing transfer (Cooke, 2000; Baldwin and Ford, 1988; Kirkpatrick, 1998). This area can be considered more problematic in informal or incidental learning. Very often, the learner is unaware of the occurrence of new learning owing to the lack of structure often dominating these learning instances (Marsick and Watkins, 2001). This issue will be further addressed in the chapter describing research methodology. The next section describes the effectiveness of learning by juxtaposing different measurement models.

Conventional Approaches to Measuring the Effectiveness of Learning

The conventional approaches to measuring learning and its 'effectiveness' are now taken into account with underlying principles and assumptions also explored and questioned. For example, conventional approaches tend to have one recurring problem: they only measure 'training interventions'. Informal learning taking place on a regular basis in the firm is not normally made tangible. Devising such a measurement model would be challenging owing

to the contextual elements that make each firm different. A 'one-model-fits-all' (Dewson et al., 2000a,:24) is therefore not seen as possible. Whereas individual characteristics are considered with environmental factors and ability (Noe and Schmidt, 1986), these are normally juxtaposed with the ability of the individual to be formally trained backdrop, rather than with the backdrop of unconscious and constant learning taking place in the firm.

As noted earlier, training often costs organisations a considerable portion of their budget. Cheng and Ho (2001:102) regard is as an 'expensive investment'. Georgenson (1982) states that only 10% of the total training expenditure leads to transfer of training. Determining the effect that such training interventions have on the organisation, along with the cost-benefit ratio through evaluation methods, avoiding waste has become an increasingly important issue (Tennant, C et al., 2002). Thus, there is a pressing interest in developing and refining explanations of how skills and learning can be harnessed and applied to greater effect. In their paper about context dependent learning and transferable skills at the workplace, Lynch, Leo and Downing (2006) describe how in a global economy organisations are seeking to optimise situated learning.

Training evaluation and training effectiveness have attracted considerable attention resulting in extensive training literature (Broad and Newstrom, 1992; Holton, 2003, Holton and Baldwin, 2000). Throughout the years, observing the effects of training have taken different formats and coined different terms, with the most commonly used, however, being 'evaluation' and 'effectiveness' of training. These terms are often interchangeably used. However, Alvarez, Salas and Garofano (2004) argue that these two terms should be

considered separately as they measure different aspects of training. Training evaluation refers to the extent to which the training programme has been of use to trainees and to countercheck learning outcomes set out to be achieved prior to the course. Therefore, fundamentally, training evaluation is related to the methodological approach measuring learning outcomes (Alvarez, Salas and Garofano, 2004). On the other hand, training effectiveness refers to factors that make training programmes a success or failure, which factors include work environment, content of the training program and trainees' attitudes. Therefore, Baldwin and Ford, in their research on training transfer, were also measuring training effectiveness. When comparing both measurement aspects, Alvarez, Salas and Garofano (2004) noted that training evaluation is a tool providing a 'micro view' of training results, whereas training effectiveness sheds light on the organisational training results giving a 'macro view' of the situation.

The criteria used when assessing the effectiveness of training should be a primary concern when carrying out such assessments (Arthur et al., 2003). The authors further submit that it is through the same objectives of the training that assessment criteria to measure effectiveness are to be derived. These criteria can be used to measure the extent to which training is effective, and can themselves, in turn, be linked to mediating factors such as work environment (Holton III, Bates, Seyler, & Carvalho, 1997, Baldwin and Ford, 1988, Noe, 1986). As interest in these factors increased, evaluation models (Kirkpatrick, 1986) emerged together with training transfer models, including, but not limited to: Baldwin and Ford, (1988), Noe, (1986), and Holton et al., (2001). In all these studies, the focus of attention falls predominantly, if not completely, on the transfer of learning from formal

training episodes. An exploration of such studies suggests many factors have been cited as having a significant impact on the transfer process. However, the most commonly-cited variables may be grouped into three broad categories: the nature of the training design, the work environment and trainee attributes (Baldwin and Ford, 1998).

Various writers have presented their own models for evaluation of training programmes to Baldwin and Ford (1988), for example, the evaluation needs to adopt a 'before' and 'after' approach. Before training, critical individual characteristics, including motivation and readiness to attend the training, may affect the degree of learning taking place and the extent to which that learning will be applied on the job or not. During the training the trainees' willingness to apply the new knowledge can be effected through discussions (Huczynski and Lewis, 1980) and introspective moments created. The work environment to which the trainees return to is also seen as yet another critical factor in the measurement of effectiveness of training (Huczynski and Lewis, 1980).

Conventionally, the transfer of learning has been assessed through measurement of changes in individual behaviour (Huczynski and Lewis, 1980). Adopting such an approach, Huczynski and Lewis developed a three-stage model as a template for assessing the extent of learning transfer to illustrate the interaction of course content, individual motivation and work environment. This model identifies 3 training phases:

Phase 1- Before attending a course: training needs analysis and motivation initiation.

Phase 2 - The training course: when 'learning' or instruction of new knowledge takes place.

Phase3 - Returning to work: this phase identifies management of the work environment in relation to the promotion of transfer.

Although, at first glance, this model (which is representative of much of the practitioner-orientated literature) seems linear and simple, it hides a number of variables influencing the effectiveness of the training intervention. As will be seen in greater depth in the following section, these variables are potentially woven into the process as from Phase 1. A training needs analysis is perceived as a highly effective tool when identifying skills that need to be sharpened for an improved performance. However, individuals may be observed or questioned about tools inherently important for the job, which are unconscious ('or 'tacit' in Nonaka and Takeuchi's terms) skills. For instance, an employee may not be aware of the meaning or expected behaviour when performing a specific task, such as contributing to a working group. Although unaware of the process, the individual would be already exhibiting the skill. However, most models of measuring transference appear to be weak in regards to this area of tacit knowledge.

In Phase 1 of this model, 'motivation' is also a subjective term. It is understood as referring to the positive attitude of the individual and his/her inclination to acquire the new set of skills prescribed. The issues arising from this phase progress to Phase 2 of the model too. An accurate training needs analysis framework could highlight preferred learning

styles of the individual/s undergoing training which should be ideally provided to the trainer delivering the learning material. In practice, however, the implementation of the framework very often falls foul of various confounding factors (Vermeulen, 2002). For example, it is critical to consider the particular needs and capacities of the learner for the success of a learning intervention as Newton and Ellis (2005) found in their research on the Australian Army. More variables in the Huczynski and Lewis model (1980) can also be pinpointed in the final phase which highlights the importance of how the work environment will be managed in relation to the promotion of learning transfer. The manipulation and alteration of ingrained work practices, systems and organisational structures to support the transfer and application of learning are complex and often problematic processes. Yet Phase 3 gives the impression that organisations evolve and change readily, which is hardly the reality. Change itself is a learning process that requires time to be put in place (Johnson, 1998) as it stimulates a number of political issues that an organisation needs to face prior to the expectation that the work environment can be altered.

Kirkpatrick's measurement model is one of the most well known models as it tries to understand the dynamics of training and optimise the transfer of learning. Kirkpatrick (1986) developed a four level evaluation model as outlined below:

Level 1 Evaluation – **Reaction** – measurement of participants' reactions to the training intervention. This normally takes place immediately after the intervention.

Level 2 Evaluation – **Learning** – Here the extent of learning is gauged. What have the trainees achieved at the end of the training programme? Have the learning objectives been met?

Level 3 Evaluation – **Behaviour** – At this point in the evaluation of the training programme, the aim is to understand what differences emerge in the participants' behaviour on the job.

Level 4 Evaluation – **Results** – Here the interest is directed towards the 'bottom-line' of the training program. Is there going to be a change or contribution to business results?

In critiquing Kirkpatrick's approach, Donovan et al (2001: 221) have noted that his model does not address variables affecting learning (as was also the case, as seen above, with Huczynski and Lewis' model). Huczynski & Lewis, 1980, address elements, namely supervisor support and discussions, held prior to and after training programmes. Their research found that such factors facilitate training transfer. Kirkpatrick's model has also been criticised by other writers. For example, Alliger et al (1997) conclude, on the basis of a meta-analytic review, that the model is a 'liability, and that:

> "[Kirkpatrick's model] provides a vocabulary and rough taxonomy for criteria. At the same time, Kirkpatrick's model, through its easily adopted vocabulary and a number of (often implicit) assumptions, can tend to misunderstandings and overgeneralizations (pp.331-332)"

Drawing on such critiques, we can perhaps begin to identify some problems with Kirkpatrick's model, particularly in the way in which he appears to assume a relatively unproblematic process through the various stages of transfer. For example, the most apparent gap appears to be between levels 2 and 3. In level 2, learning is promoted and possible improvements are sought through the use of questionnaires and other feedback measures assessing the learning content of the programme. However, level 3 targeting the individual behaviour taking place after a training programme could be interpreted as a rather reactive process. It is entirely possible that, at stage 2, all learning outcomes are successfully achieved, but, for a variety of reasons, learning does not result in on-the-job behavioural changes. In response to this shortcoming in the Kirkpatrick model, Holton (1996) coins the term 'transfer climate' to highlight the capacity of the organisational environment to provide a context that facilitates, or inhibits, the transfer of learning. Holton's model will be explored in greater detail in the following section.

Notwithstanding criticism of Kirkpatrick's approach various researchers, including Arthur et al. (2003), have found his model valuable in measuring training effectiveness through the use of follow-up questions about the effectiveness of training including "effective in terms of what? Reactions, learning behaviour or results?" (Arthur et al., 2003:235) However, when looking at the four phases closely, it can be noticed that some criteria cannot be directly used objectively to measure the effectiveness of the training programme, even if the evaluation results are positive. For instance 'reactions' can hardly produce results that can be directly linked through the training effectives of a programme. Eden and Bells (2003) quote other researchers (e.g. Alliger and Janak, 1989; Alliger, Tannenbaum,

Bennett, Traver, and Shotland, 1997; Arthur, Tubre, Bell, and Edens, 2003; Colquitt, Le Pine, and Noe, 2000, Noe and Schmitt, 1986) in stating that there is a weak relationship between 'reaction criteria' and the other three criteria. One must note, however, that anecdotal reports can still provide valid information (Tannenbaum and Yukl, 1992, p.425) in the form of valuable qualitative sources of information. In the next section, different models of learning transfer are considered and evaluated with one model of informal learning given prominence. However, it is to be noted that most research is still based on transfer models related to training programmes.

Examining Models of Learning Transfer

In this section, some of the main models of learning transfer are explored, including Holton's (1996) model which ultimately forms the basis of the analytical framework of the study. Amongst various models found in literature addressing the issue of learning transfer, the most influential, however, are Kirkpatrick's (1976, 1986, 1994) evaluation model and Holton's (1996) model. Boud and Walker, (1990) also offered an interesting model more inclined towards the informal learning styles.

Boud and Walker (1990) developed a model describing the promotion of learning from experience. In this model (Fig. 2.1) the reflective process of learning is given considerable importance as a vehicle facilitating the transfer of learning. In general, this could have been a valid model to use as the primary analytical framework for the study owing to the focus

on the learner and the environment in which the learning takes place, the workplace in this case. The skills of the learner and know-how they bring to the firm coupled with the learning experiences presented within it were also of considereable interest. Although the focus of the study falls on extracting factors affecting the transfer of learning in situated conditions, it was felt that this model was not quite appropriate to the requirements of the study. The model appears to target informal learning specifically, which does resonate with the aims of the research. However, the main reason that Boud and Walker's model is not suitable for the research is that it only addresses the process of individual learning through reflection on experience and fails to address issues of situativity which the study aims to uncover in depth. The contextual factors that support or inhibit the process of situated learning transfer are left out of the model owing to its focus on reflective thinking. Although not suitable for the purpose of the research, the Boud and Walker's model was useful in providing a different perspective on learning at the workplace, taking into consideration informal learning methods.

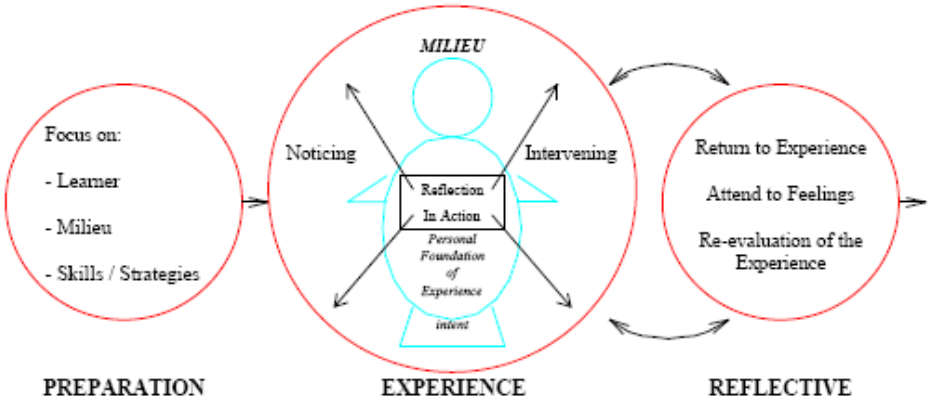

Fig. 2.1 Model for promoting learning from experience (Boud and Walker, 1990)

The review of existing models pertaining to the evaluation of learning and factors that could affect the transfer of learning reveals two other recurring models, mainly Kirkpatrick's (1976, 1986, 1994) evaluation model and Holton's (1996) model. Although a lot of research has been centred around Kirkpatrick's model (Clarke, 2002; Arthur et al., 2003), others have emphasised the strengths of Holton's HRD Evaluation and Research Model as a comprehensive framework for diagnosing and understanding the causal influences of HRD intervention outcomes. For example, Donovan et al (2001) argue that Holton's model 'moves the debate away from a concentration of outcomes to a discussion about how training works and how the factors that make it work can be enhanced in the organisation. Here, notwithstanding claims that the model has not been completely tested yet (Holton 1996) and that it is inclined towards a concentration on the work environment besides factors involving the individual, it is still felt that the HRD Evaluation and Research Model can provide sound foundations for research. This evaluation model was developed by Holton (1996) in response to Kirkpatrick's taxonomy. The framework was identified for the diagnosis and understanding of the causal influences of HRD intervention outcomes.

Using the Geilen (1996) model, Lim and Johnson (2002: 42) have identified results that also lead us back to Holton's (1996) model. Their research highlighted a number of factors that impact on the transfer of learning, namely 'lack of understanding', 'planning for future use', 'supervisor's interest and involvement' and 'difficult to apply due to organisational problems' that can be found in Holton's (1996) HRD Evaluation Research Measurement Model, which has influenced heavily the model developed for the study.

In Fig 2.2, moving from left to right Holton's model tackles 'influences on learning' as its first domain. Holton (2005) claims that his 1996 model is a more comprehensive substitute to Kirkpatrick's model, given that it does not stop at the four level evaluation but can be broken down into sets of outcomes and influences. Holton adds three dimensions to his model that are not addressed by Kirkpatrick, making it wholesome and comprehensive. These elements: motivation elements and environmental elements, including transfer climate, and enabling elements, such as training design, make Holton's model more dynamic. In fact, the foundations of the model lie on the three main elements that surround the learning intervention with the ultimate aim of achieving transfer of new skills and their implementation at the workplace. The outcomes underpinning the model suggested by Holton are:

- Learning: where the achievement of outcomes set to be met by the intervention is reviewed,
- Individual performance: where changes in the behaviour of the individual are assessed,
- Organisational results: where changes across the organisation can be noticed as a result of a possible cascading effect from the initial learning intervention.

In this simplistic fashion, these outcomes seem easily reachable, however, as the primary and secondary influences addressed by Holton (1996) give a more detailed picture of the model. The primary influences or enabling elements include the trainees' reactions to the learning intervention, their motivation to learn and the ability to understand concepts and

translate them to actual happenings at work. The secondary influence factors include individual performance, self-efficacy, and the learner's readiness to absorb knowledge. Holton's model also takes into consideration 'transfer climate'. This concept was first included by Rouiller and Goldstein (1993) to highlight aspects of the organisational environment that inhibit or facilitate the transfer of learning at the workplace. The transfer climate can be enhanced or limited according to how situational and consequence cues are used (Rouiller and Goldstein, 1993).

According to Holton's model, learning will bring about change in the individual and, consequently, in the organisation only if the participant is motivated to transfer the behaviour change and has the ability and potential to do so within the current environmental conditions. Moving away from the concentration on outcomes to the analysis of factors impinging on the success of training interventions (Donovan et al., 2001), Holton (1996) includes intervening variables including motivation, trainability, attitude to the job, and the individual's personal characteristics as the secondary influences that determine the level of transfer that takes place.

In a later account in which he reviews the evidence relating to his (1996) study, Holton (2005) claims that his model is 'more conceptually comprehensive than Kirkpatrick's simple four-level taxonomy'. This belief is shared by other researchers including Donovan et al., 2001. In Holton's model we can notice basic variations between his analysis and Kirkpatrick's in three main factors: reactions are not seen as a primary outcome. The

second aspect focuses on 'behaviour' which changes to 'individual behaviour' in Holton (1996). Moreover, as mentioned earlier, Holton's model is spread across different strata adding primary and secondary influences to the outcomes. Fig. 2.2 shows Holton's (1996) HRD Evaluation and Research Measurement Model as shown in Donovan et al., 2001.

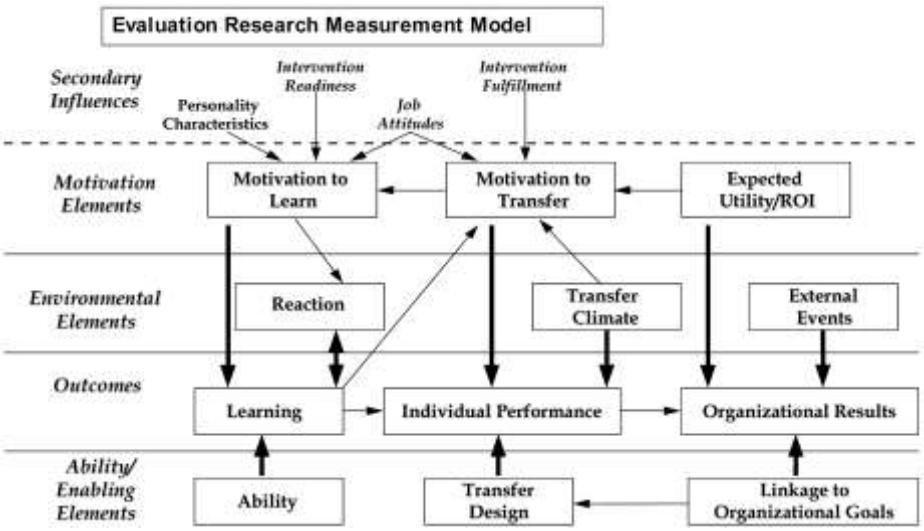

Fig. 2.2 HRD Evaluation Research Measurement Model (Holton, 1996 in Donovan et al., 2001)

In a further development of Holton's model, Holton and Baldwin (2003) develop the learning transfer system inventory (LTSI). The LTSI explores organisational supports and constraints that influence the level of transfer of new knowledge to the workplace, taking individual performance and organisational results into account. In the LTSI, sixteen factors that influence the extent to which learning is transferred have been identified. The model describes 'training specific scales' and 'general scales'. The training specific scales, as the name implies, are tailored for specific training and include learner readiness, superior's

support and opportunity to use. The general scales are more performance oriented and include performance, performance coaching, expectation outcomes and openness to change. Compared to Kirkpatrick's model (1994), this appears to be more comprehensive and tangible since individuals could set measurable targets to assess their performance following a learning intervention. Another important aspect that appears to be missing in Kirkpatrick's model (1994) is the environmental climate. As per Roullier and Goldstein (1993) climate, and especially transfer climate, are increasingly considered as critical. Their research provides strong support for Holton's account of the environmental influences on transfer, identifying such factors as 'social cues' and 'task cues' as crucial in supporting the transfer process.

Although in principle both Kirkpatrick's (1994) and Holton's model (1996) have the same potential limitation in that they are mainly focused on formal training, there are also some critical differences, which arguably paint Holton's model in a more favourable light, for the purposes of forming the analytical framework of the project, for the following reasons:

1. Kirkpatrick focuses his model on behaviours. On the other hand, Holton's model, which focuses on the individual's performance, was considered to be more appropriate as it arguably relates more closely to the *benefits* arising from learning transfer, rather than just its outcomes.
2. The second reason refers to Holton's inclusion of primary and secondary influences on outcomes. This allows for a focus on contextual influences promoting learning transfer. Given that the research is intended to concentrate on factors that affect the

transfer of learning, it was felt that Holton's model was more aligned to the aims of the study.

Holton's HRD Evaluation Research and Measurement Model

As Holton's work forms the guiding structure of the research, it is appropriate to consider it in more depth, particularly in terms of his focus on environmental influences on learning transfer. Environmental factors at work have attracted particular attention through areas related to the atmosphere at work and, in this vein, some writers have developed concepts such as 'transfer climate'. Transfer climate has acquired considerable importance especially owing to its association between the context and the trainees' attitude towards the job and his/her associated behaviour. The climate established in the workplace can also support or inhibit the application of learning on the job (Holton et al., 2001; Mathieu et al.,1992). This claim is sustained by several studies including Huczynski and Lewis, (1980), Roullier and Goldstein, (1993), Tracey et al, (1995).

Holton's model arguably represents an advance on previous transfer models in a number of ways. Whereas Baldwin and Ford (1988) developed a linear model in which they addressed three broad factors influencing the transfer of training, addressing areas such as trainee characteristics, training design and work environment, Holton (1996) developed a complex multifaceted model which views the pre, during and post training factors that could influence and affect the transfer of learning. Furthermore, with reference to Kirkpatrick's model, to which Holton (1996) makes reference as a simple taxonomy,

Alliger et al., (1997) state that identifying the location of a problem in a learning intervention (which Kirkpatrick's approach does) is problematic. Holton's model attempts to transcend this problem by recognising that failure to reach the pre-established outcomes following a training intervention can be caused by a number of contextual factors; thus, he does not attribute failure to the training program itself as would happen with the four-level model designed by Kirkpatrick.

Holton's (1996) model follows Noe and Schmidt's (1986) work that claims that HRD outcomes are a function of ability, motivation and environmental influences at three outcome levels: learning, individual performance, and organisational performance. These factors are identified and included in Holton's HRD evaluation research and measurement model. However, the model goes beyond these constructs and points out secondary influences, especially those that affect the motivation to learn. According to Holton (1996) himself, this model will " account for the impact of the primary intervening variables such as motivation to learn, trainability, job attitudes, personal characteristics, and transfer of training conditions."

It must be noted that the models observed in the previous section appear to assess the relevance of learning in formal settings. The HRD Evaluation Research Measurement Model appears to do this by highlighting three specific areas in the layered model. Transfer of learning is addressed through 'motivation elements', 'environmental elements', such as 'transfer climate', and 'enabling elements', including 'transfer design'. Although,

in relation to transfer of learning, this model appears to be more comprehensive than the Boud and Walker (1990) model for promoting learning from experience and Kirkpatrick's (1976, 1986, 1994) evaluation model, Holton (1996) still fails to explicitly address the situativity of the learning that takes place at the workplace. He thus leaves informal and incidental learning untapped, although many of the contextual influences he identifies could arguably be relevant to the application of both formal and informal learning. In voicing this concern, Enos et al (2003) stress that there is a greater potential for skills learnt informally to be transferred to the workplace. Following these concerns, and using Holton's model as a starting point, the aim of the research is to investigate factors that influence this type of informal workplace learning. It is hoped that the study will contribute to the lack of research examining such factors referred to by Enos et al. (2003).

Learning styles, learning transfer and the individual

As the above discussion demonstrates, existing models of learning transfer have tended to neglect the issue of informal learning. While they have begun to recognise the role played by organisational environments in influencing transfer, they could also, as will be seen below, benefit from paying greater attention to the role of individual agency and cognition in the learning and transfer process. For example, Singer and Edmondson (2006:2) claim that 'learning can be messy, uncertain, interpersonally risky, and without guaranteed results.' Therefore, the question arises under what circumstances, for example, might individuals be motivated to transfer learning, and how is their propensity and ability to transfer learning affected by such internal conditions? In an effort to facilitate strategies

aimed at creating a Learning Society, a critique by Rees et al (1997) purported to provide the basis for the development of a more satisfactory theoretical account in which learning behaviour is conceived as the product of individual calculation and active choice, but within parameters set by both access to learning opportunities and collective norms. Complimenting this thought, the current study will identify areas that instigate individuals to put in practice material or ideologies learnt during such learning occasions.

A growing number of writers have emphasised the importance of the individual and his/her internal state within the learning and transfer process. For example, Knowles (1990) claimed that adults learn and apply learning in a fundamentally different way from children. In accordance with this, he outlined the principles of 'andragogy' (teaching and learning for adults) and separated them from 'pedagogy' (learning for children). However, andragogy has been criticized for being excessively individualistic in its analysis and for ignoring learning in teams and other dynamic environments (Bleakley, 2006). In the same document, Bleakley quotes Davenport (1993) when he concluded that the distinction between andragogy and pedagogy is unfounded. The main distinctions lie in the possibilities of interaction between students and teacher. However, such criticisms notwithstanding, theories of adult learning and andragogy raise some important issues concerning the internal, subjective conditions that may influence the transfer process.

For adults, identifying learning episodes and learning opportunities may not necessarily be a conscious task as the potential for informal learning at the workplace may not be

immediately apparent. Individuals may not be aware that they are learning new information as they go along all the time. This is perhaps one of the key barriers to transfer of learning as the individual would not actively seek opportunities to match areas for the application of new knowledge. The environment at the workplace could be one of the causes for the lack of application of new knowledge (Tennant et al, 2002). This presents a problematic situation, which sees the impact of transfer of learning on performance diminish. Informal learning generally occurs without a planned training intervention. The individual's ability to recognize these learning episodes is therefore of importance. However, it must be noted that if learning can potentially occur informally and unconsciously, is it also possible that the application of learning can occur in a similar way? Individuals may apply what they have learnt without even consciously realising it. In such instances, being aware of what one has learnt may not be necessary.

Evidence from the psychology of learning and cognition suggests that certain personality types may be more predisposed to reflect on and learn from experience (e.g. Belling and Kim, 2004), and an explicit awareness of these types and their preferences could possibly improve the outlook of informal learning at the workplace and how to maximize its use.

Similarly, other writers have emphasised that the perceived validity and importance of workforce development activities may prove to be effective in gaining ownership of adult learners and, hence, in facilitating the transfer process. Speck (1996) states adults want to be involved in the learning that they receive and that, most importantly, they bring with them a baggage of experiences creating diversity in the learning environment. Such

diversity must be accommodated during learning interventions. Ultimately, adult learners need to receive feedback on their performance in order to rectify and reinforce their behaviour.

Thus, theorists of adult learning seek to emphasise the role played by individual experience in interpreting and applying new knowledge. This has led some writers to claim that designing effective training interventions is not an automatic process or one that can be repeated like off-the-shelf products. The diversity of individual experience needs to be kept in mind. Kolb (1984), promoting the experiential learning process. He claims that taking the individual's previous experience into account is critical for the success of any adult learning opportunity. This model, however, has also been criticised on the basis that it does not incorporate the social relations present at the workplace and because it is perceived weak in its 'explanatory power' (Bleakly, 2006). So, while theories of andragogy may be useful in reminding us that the individual's previous experiences can impact on their ability and motivation to transfer learning, we should still not forget that the social context at the workplace is also crucial in this respect, as identified in previous sections.

The Situated Learning Transfer Model

Based on the previous discussion in this chapter, this section will present a revised, hypothetical model of learning transfer that builds on existing models and aims to address

their shortcomings. This model is then applied in an empirical context, as will be seen in later chapters. Various models of transfer of learning have informed the distinctive areas of the emerging model (Baldwin and Ford, 1988; Broad and Newstrom, 1992; Tracey et al., 1995; Holton 2003). The name of the model: The Situated Learning Transfer Model (see figure 2.2) is linked directly to what it is ultimately aimed to achieve: transfer of learning from contextual settings in the workplace. The different components of the model represent factors that possibly impact significantly on instances of learning transfer. These instances could take place in communities of practice (Lave and Wenger, 1991) during induction programmes and on-the-job learning sessions for new entrants and also, possibly, informally. Some kind of learning is constantly taking place (Tracey et al., 1995). Identifying in which area(s) of the firm the learning resides and finding out how to make this learning transferable is the ultimate aim of the model. Notwithstanding the name 'situated learning transfer model', it must be noted that the learning addressed is not solely directed to situated instances in apprenticeships or in communities of practice inducing new entrants. The model addresses the type of transfer of learning woven in the fabric of the organisation, the one that is tacit and unspoken about (Zuboff 1998). However, aspects of the model, like supervisor support and knowledge brought into the organisation, could also be applied to formal learning situations. Ultimately, the study aims at identifying factors that facilitate or inhibit transfer of learning. Being aware of these factors, one can then design tools to maximize the transfer taking place. This is reflected in Billet (2001:21) who stated that 'learning in any environment will be more or less transferable, depending on the quality of the learning processes experienced'.

Using the Holton (1996) HRD Evaluation and Research Measurement Model and the learning transfer system inventory (LTSI) as the main influences, a new model studying factors that influence the transfer of learning is hereby proposed. In view of the highly contextualized learning constantly taking place in organisations, variables have been identified considering learning transfer within the organisation differently.

Similarly to Holton's (1996) model, the situated learning transfer model sees **learning** at its starting point. Learning lies at the heart of organisational life, it inevitably takes place whether we are aware of it or not. Therefore, it is felt that the level of awareness of this process can strongly impinge on the extent of usefulness to the organisation to improve performance. Roullier and Goldstein (1993) use social cues, such as the behaviour and influence exhibited by other individuals at the workplace, to describe a transfer climate. Such cues could have another effect, that of turning regular processes carried out every day by employees into instances of awareness of these processes.

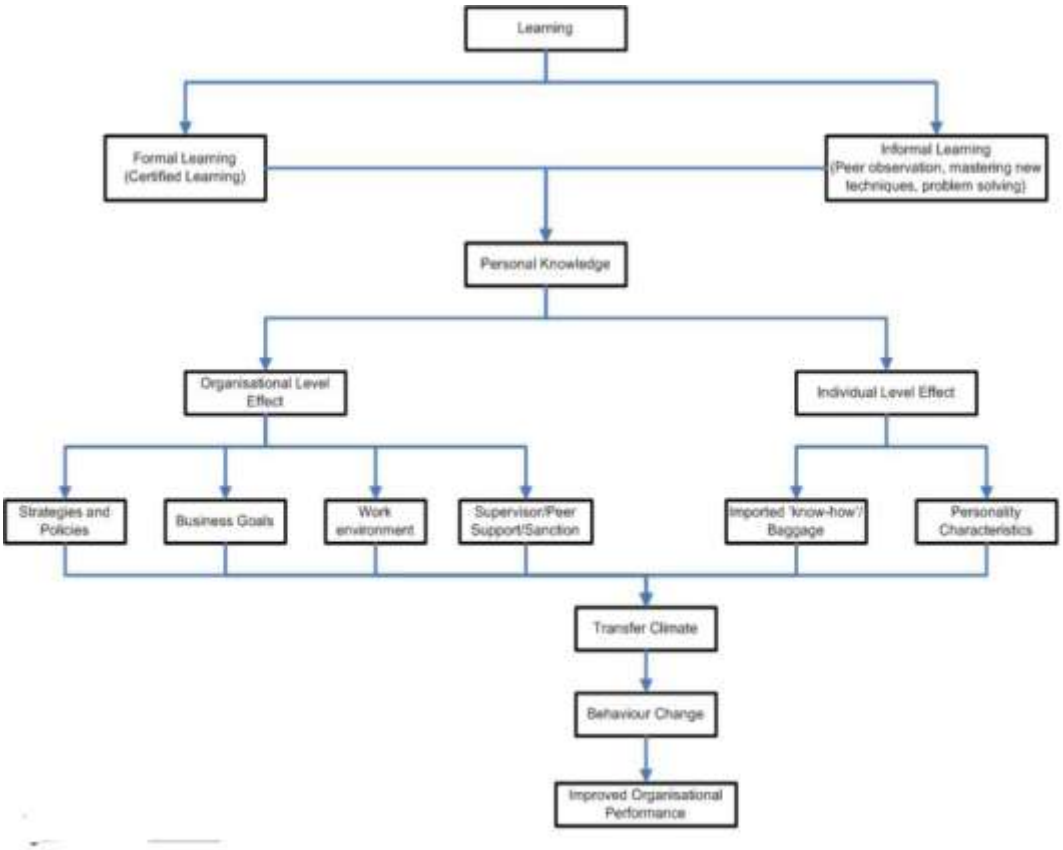

Fig. 2.3 Situated learning transfer model

The model looks at learning broadly in terms of **formal** learning and **informal** learning, since in firms there is normally a mixture of both. Often, employees bring in with them a level of knowledge that they carry around by default. This knowledge could be in the form of certifications or other educational achievements, formally acquired. Accumulated know-how from previous places of work or mere observations also flow into the organisation along with the person building the repertoire of tacit knowledge available in the firm (Smith, 2000). These notions could possibly influence the person's behaviour and attitudes at the place of work, constituting the results of informal learning. In fact, both formal and informal learning are brought together in the model being proposed as the

constituents of the individuals' **personal knowledge**. This, perhaps, is one of the areas where existing models of transfer are lacking and where the proposed model aims to advance current understanding.

The situated learning transfer model then progresses by addressing the work environment variables (Baldwin & Magjuka (1991) that could impinge on the effectiveness of learning and, thus, its transfer. Taking such variables into consideration highlights the multifaceted aspects that shroud learning transfer in organisations to uncover the extent of successful learning interventions. Lim and Johnson (2002) have identified work environment variables like 'planning for future use' and 'difficulty to apply due to organisational problems' that also influence the composition of the situated learning model where work environment variables are categorized as the organisational level effect.

Organisational level effect focuses on variables related to factual occurrences in the organisation as well as abstract facets. **Strategies and policies** and **business goals** represent the factual aspects of the organisational level effect. Taking Lim & Johnson (2002) as an example these variables would address issues identified by their studies such as 'planning for future use'. On the other hand, **work environment** and **supervisor/peer support and/or sanction** are two variables that address concepts not necessarily related to black on white situations, but in many ways still affect the level of transfer of learning at the workplace and the dissemination of new knowledge. Work environment as a variable can be highly valuable as it is broad enough to consider varying issues. A work

environment where communication is valued could prove to be a critical factor for the transfer of learning. The factors identified by Lim and Johnson (2002), such as 'supervisor's interest and involvement' and 'difficult to apply due to organisational problems', were considered in terms of high or low levels of transfer. The concept of Fuller and Unwin's (2003) expansive learning and restrictive learning are also taken into account within the work environment which is aimed to extract information on the atmosphere at the workplace vis-à-vis the transfer of situated learning, as finding elements promoting an expansive culture is considered critical when highlighting factors affecting the transfer of learning.

The other continuum on the model describes the i**ndividual level effect** – a further area where existing models of transfer may arguably be deficient**.** Billet (2001) explored in depth the interdependence of the social practice of work within the workplace and how individual roles come into play. Lave (1996) addresses the issue of multiple differences in how learners shape and use what they know. The model addresses this as imported know-how, a baggage of experience that each employee brings to the organisation. The individuals' **know-how** accumulated over the years through different experiences could be imported and used in the organisation. The model tries to find out how employees feel about the use of previously accumulated knowledge at the current workplace. Different methods of problem solving or levels of mastering new techniques could potentially be shared at the workplace and advantage is gained out of such experiences. The **personality characteristics** of individuals also make a valid ingredient that could potentially influence how and when learning is applied at the workplace (Billet, 2001). Self-efficacy is seen by

Kirwan and Birchall (2006) as another major component linked to personality characteristics.

Transfer climate is seen as the cumulative effect of organisational and individual-level influences on learning transfer. Where these influences are positively aligned, it can act as a catalyst for the effective transfer of learning in the organisation. As observed above, it is a concept coined by Holton (1996), but which remains absent from the work of Kirkpatrick. Climate is the medium that can motivate individuals to transfer new learning into the organisation. According to Holton, transfer climate can be enhanced at an organisational level through support for practices that can make the work environment more appropriate for effective learning transfer to take place. However, one must note that transfer climates can also be 'negative'. In instances of poor transfer climates, the environment risks becoming non conducive for the application of new learning. Brinkerhoff and Montesino (1995) reported lower levels of transfer where the supervisor had fewer interventions with workers, thus not providing a conducive learning transfer climate.

The situated learning transfer model is based on the hypothesis that the criteria mentioned above have a direct influence on the transfer climate in the organisation. The components of the model can be used in different ways that could potentially optimize the transfer climate. Social cues, for instance, during group interaction could impinge on the level of transfer within the firm (Rouiller and Goldstein 1993). The primary and secondary

influences of Holton's (1996) model could also be closely linked to factors that inhibit or hinder transfer climate. The model tries to identify these factors through the research study. It is postulated that an environment where transfer climate is nurtured would consequently lead to a **behaviour change** through the effective use of the newly learnt techniques that are implemented at the workplace. In turn an **improved organisational performance** could be observed as performance benefits in different individual and group learning behaviours (Singer and Edmondson, 2006). However, we should not forget that the relationship between learning and performance is a complex one. We are reminded of this by Grugulis and Stoyanova (2005) who claim that 'hard evidence on the links between skill and performance are hard to find'. The authors go on to say that social systems within organisations are one of the reasons why the relationship between performance and learning is complex. Hysong (2006) contended that managerial skill was found to predict production output, therefore confirming that skill and performance could be linked. In the case of the situated learning transfer model, it is therefore the assumption that behaviour change through new learning taking place at the workplace is possible.

A description of the definitions used for the variables employed follows the illustration of the model below.

Variables	Definition
Organisational Level Effect	
Business Goals	Extent to which the business goals allow individuals the flexibility to practise and implement new knowledge
Strategies & Policies	Rate at which strategies and policies can be changed to include new learning
Work Environment	Extent to which the atmosphere at the workplace facilitates or inhibits open communication and opportunity to share new knowledge, give and receive feedback.
Peer Sanction/Support	Extent to which peers transmit positive and negative response to backup and encourage change due to new knowledge.
Supervisor Sanction/Support	Extent to which supervisors transmit positive and negative response to backup and encourage change due to new knowledge.

Individual Level Effect	
Imported 'know-how'/Baggage	Individuals with different backgrounds are encouraged to share knowledge and experiences contributing to the body of knowledge in the company.
Personality Characteristics	The extent to which individuals feel that personal attributes effect the level of change owing to new knowledge.
Transfer Climate	Level of encouragement to change and improve work practices using new techniques
Behaviour Change	Noticeable change in attitude and approach to the work ethic and satisfaction due to the use of shared knowledge.
Improved Organisational Performance	The extent to which work processes have improved.

Table 2.1 Learning Transfer Variables Definitions.

In conclusion, the ultimate aim of the research is to develop a clearer understanding of the ways in which the application of informal learning is influenced by contextual factors at individual and organisational levels at the workplace. The situated learning transfer model,

which builds on previous models (particularly Holton's), provides the initial analytical framework for exploring and understanding these factors.

Research Questions

The final section of the literature review identifies the primary research questions outlined for the study. The research questions reflect and address particular issues drawn out of the review. The primary, over-arching question of the study is:

> *What individual and organisation-level factors enable and encourage the transfer of situated learning, and how can existing models of transfer be improved upon to take account of such factors?*

Further to this, some more detailed questions are asked:

Research Question 1.

How can the application of informal learning be promoted at the workplace?

The research question seeks to recognize the importance of awareness of learning processes at the workplace. Hall (2002:283) notes that 'natural resources' in firms offer readily available and cost effective development activities that promote learning through daily tasks. Bates and Khasawneh (2005) state that 'the culture within an organisational learning system is all about developing and applying intellectual capital'; they go on to say that this culture is in turn supported by the climate or 'systems' that enhance the transfer of new

learning. In view of the research question, in her review of research, Fenwick (2008) found that individuals and teams can be willing to share knowledge if there is support and if sharing is valued. Situated learning is therefore promoted through the sharing of information and knowledge. It is hoped that the research will yield results that can further inform this notion.

In identifying factors of on-the-job learning situations, Berings et al. (2005) refer to learning climate as one of the key determining factors. In his model outlining an effective model of the dynamics of workplace learning, Braddell (2007) claims that to create and sustain a climate for learning, it is critical to allocate and structure the work activity and provide the appropriate challenge with the job. Objective setting and a system of constructive feedback are perceived to further promote workplace learning. Berings at al. (2005) also sustain these notions claiming that feedback and structures promote learning.

The sharing of new learning is seen as a critical by-product of the organisational climate. The study is concerned with investigating employees' perceptions of situated learning and its application. Interestingly, Storbeg-Walker and Gubbins (2007), in their research on social networks in relation to the HRD function, state that learning can be impacted through social networks. They acknowledge that tacit knowledge can be transferred through social interaction, thus becoming explicit. This is of particular interest to the study as most situated learning taking place at the workplace involves a high degree of social interaction between different parties communicating and learning from each other.

Technological advancements along with increasing competition across all borders are constantly impinging on the atmosphere that employees are surrounded with at the workplace. Collective learning is vital for success in organisations (Fulmer, 1998) as it cuts across companies through networks, teams and peer groups. According to Garavan and McCarthy (2008), the application of new learning is likely to be promoted by enabling employees to build networks across the firm. This claim strengthens the belief that there is a wealth of knowledge taking place under situated conditions and, if applied, could benefit the firm. It is hoped, through this literature review, that factors affecting the transfer of learning under situated conditions will emerge from the research in contribution to the claim by Marsick and Volpe (1999:3) as to "how (learning) can be best supported and encouraged, and developed".

Research Question 2.

What contextual factors can encourage and facilitate the transfer of learning at the workplace?

Many contextual factors which influence the transfer process have already been put forward. For example, there is shared consensus that the creation of a culture that values creativity, continuous improvement and the sharing of new knowledge are important for knowledge activities to succeed (Davenport and Prusak, 1998; Nevis et al. 1995). Instilling such an atmosphere at the workplace sounds idyllic but this is backed by research in Coffield ed. (2000:121): "…although there was a range of beliefs about transfer of skills,

many took an implicit 'situated' perspective, arguing that the value of skill development was seen as relating to preparation for using specific skills in a specific context"**.** However, strategic planning is suggested to facilitate the process of transfer, although situated learning can take place unconsciously as can its transfer. If the workplace structure and culture are generally supportive of workplace learning, then it could be possible that transfer of learning takes place without any specific plans. However, highlighting key points on the relevance of a training initiative could influence the motivation of trainees to implement new knowledge at the workplace (Axtell et al, 1997).

Planning the transfer of learning places demands on organisational decisions. The framework for support of an effective training intervention calls on a cause and effect relationship between organisational norms and HRD activities. Nkomo (1988) noted that there is generally a lack of HRD involvement in the implementation phases of learning activity in corporate strategy. This is a critical flaw when considering that the strategy incorporating HR issues follows the main organisational strategy. Other organisational factors that could determine the extent of transfer of learning were identified by Wexley and Latham (1991) and included pay and promotion.

Another aspect of the workplace environment to be considered in relation to this research question is the level of delegation that Human Resources Development (HRD) professionals give to line managers or supervisors. Horwtiz (1999) notes that line managers are not specialists in people development and that communication between them

and the HRD specialists should be constant and two-way. He goes on to say that line managers have their typical workload that does not necessarily reflect HRD goals. This may lead to a lack of support to trainees returning from training interventions.

The evidence suggests, therefore, that strategic alignment of internal strategy, structure and culture is important in terms of facilitating an environment conducive to transfer. The study will attempt to build on this evidence, to probe and to question it, thereby contributing to a more detailed account of the contextual influences on the transfer of both formal and informal learning.

Summary

In an effort to identify factors that influence the transfer of contextual learning at the workplace, the chapter has reviewed literature relating to learning transfer and, in particular, to factors at individual and organisational levels that facilitate or inhibit the application of learning. Existing models of learning transfer were described and explored, and were, to differing levels, found wanting. In particular, there has been a focus on formal learning to the exclusion of more, informal and situated types of learning, accompanied by a neglect of the cognitive and subjective 'baggage' that individuals bring with them to the workplace. The research is primarily concerned in addressing such shortcomings in existing models, as the historical evolution of training and issues pertaining to the transfer of training have provided the foundations for the proposed model in this research.

The unfolding of the background literature led to the development of the situated learning transfer model and the emergence of the research questions highlighted above. These questions are employed to narrow down the research area and therefore clarify issues to be addressed by the study. In particular, the study aims to explore the organisational and individual-level factors that influence the transfer of all types of learning at the workplace, thereby enabling us to refine, where appropriate, existing models of learning transfer.

In the next section, the methodology providing the foundation for the research is described in detail. An outline of the research companies is produced so as to put the firms in context. A framework of the main strategy for data collection and analysis is also described in depth in Chapter 3.

Chapter 3

Research Methodology

Overview

In chapter two the main themes relating to the transfer of learning at the workplace were viewed. Areas including the need for effective training and its relevance to competitivity, approaches to learning comprising informal learning, contextual learning and collective learning were also explored. These themes led to the importance of the evaluation of training and validity of measurement. Holton's HRD evaluation research and measurement model together with Kirkpatrick's evaluation model were explored and taken into consideration for this study. Chapter 2 ended with the presentation of the Situated Learning Transfer Model, which built on existing models and which will form the essential analytical framework for the study. The primary research questions were also presented. This chapter will provide an overview of the methodology used in the study. The methods are then justified in view of the research questions. The data collection methods are proposed while ethical issues raised by the research, as well as its scope for generalization and validity, are finally taken into account.

Introduction to the Research Design

Given that social systems are open-ended and emergent, as actions happen as a result of what happened previously (Sayer, 1992), the chosen methodology reflects the needs

created by this phenomenon in view of how learning and learning transfer merge in the relevant organisation. This constitutes the foundations for the operational framework in which data collected are organised so that their meaning become clearer (Leedy, 1997:104). According to Leedy (1997:94), the research design results in a tangible plan of study that supplies the agenda for data collection.

The research employed two main methods of data collection: primary research methods, namely semi-structured interviews, and the use of a questionnaire. In order to obtain an overall view of data that are as valid and reliable as possible, both qualitative and quantitative methods were employed. The design of the primary research was informed by the information collected through the literature review. Creswell (2003:210) refers to the employment of both qualitative and quantitative methods as 'mixed research methods'. Patton (1990: 187) goes further and refers to the mix of methods as 'triangulation' or 'combination of methodologies'. He claims that these methods strengthen the study. The qualitative aspect of the study will present the opportunity to examine the selected issues in depth and detail. Mason (2003:3) sees qualitative research as having an additional strength as it cannot be 'pigeon-holed and reduced to simple and prescriptive set of principles.' On the other hand, more rigid and standardized procedures that allow the categorization of responses will be taken into consideration using a quantitative method (Patton 1990:13). Taking note of these suggestions, I generated a predisposition to possibly combine the two approaches further.

Keeping the objective in mind, the use of a mixed method served to explore further factors that foster or inhibit the transfer of learning at the workplace. The method included a questionnaire to collect demographic data and general quantitative data alongside the use of semi-structured interviews. It is felt that the semi-structured interviews offered opportunities to probe and discover, in more detail, information on the responses given in the questionnaire. Starting off with the idea that there are factors that can affect the transfer of learning in the firm, it is hoped that the research will then lead to the identification of specific factors that cause this phenomenon. The combination of qualitative methods through the semi-structured interviews and the numeric trends generated through the use of a quantitative method will strengthen the findings, giving the study validity and reliability. The possibility of viewing different perspectives from the generated results and additional understanding of the issues related to the transfer of training adds a final reason for using the combination of methods.

Approaching Mixed Methods

There are differing views on the use of mixed approaches in research studies. Bryman (2001:446) discusses the issue taking into consideration the epistemological version and the technical version. Different schools of thought designing various epistemological approaches designate clear cut boundaries within which they operate, namely starting with the positions taken by positivists and phenomenologists. For this reason, adopting a 'multi-strategy research' is not possible due to the lack of compatibility. On the other hand, a technical view sees the approaches as compatible if not complimentary as noted above.

Bryman (2001:446) states that "research methods are perceived, unlike in the epistemological version, as autonomous. A research method from one research strategy is viewed as capable of being pressed into the service of another'.

From a technical point of view the two types of data gathering techniques were seen as complimentary. The quantitative method to be employed, namely a questionnaire, is used to gather data related to demography. Other data using this information will provide an overall perspective of factors that foster or inhibit the transfer of learning at the workplace through the use of close-ended questions. On the other hand, a qualitative technique, namely semi-structured interviews using specific open-ended questions, will provide space for respondents to express their perceptions, describing in detail why they answered Yes or No in the questionnaire. Creswell (2003:211) states that it is critical to establish the sequence in which data are collected. For the purpose of this study, the data collection was carried out in two stages. The questionnaires were sent out first. Stage two involved the semi-structured interviews. The two stages took place over a short time span to try and capitalise on any retention or insightful thoughts of respondents. The rationale behind this decision was that, if collected separately, the respondent might have given different views depending on experiences that could possibly have occurred in between data collection events. Fig 3.1 is the model developed by Amaratunga et al. (2002:30) that partially informed the research design. Amaratunga et al. (2002) describes how the quantitative aspect of the research is in general channelled towards the testing of a hypothesis. On the other hand, a qualitative approach is useful for validation, explanation and reinterpretation of quantitative data gathered. Although the study does not focus on the testing of a

hypothesis, quantitative data were required to provide basic demographic information and the possibility to compare some of the responses statistically.

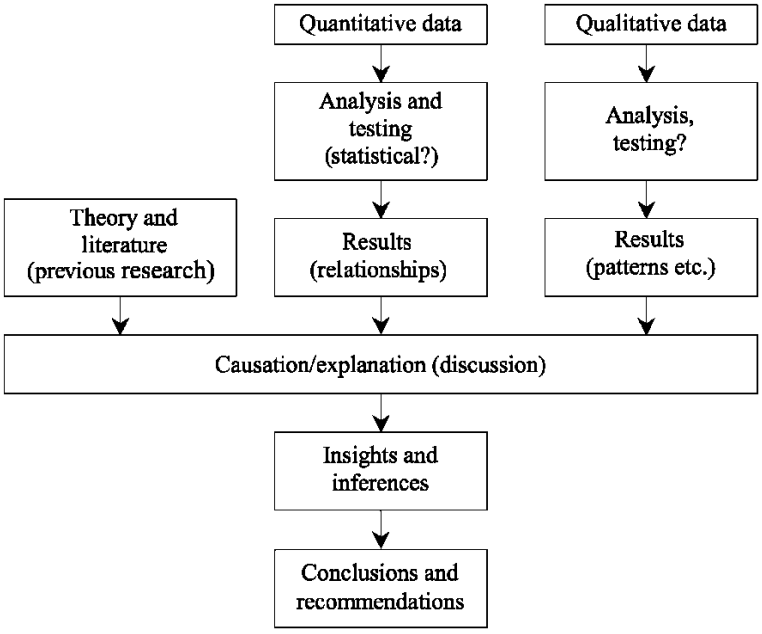

Figure 3.1 Model of the mixed research method, Amaratunga, Baldry, Sarshar, Newton's (2002:30)

Quantitative Research

Quantitative methods involve the process of collecting, analyzing and interpreting data followed by a written report summarizing the results. The process is highly structured using a survey or questionnaire or experimental methods. Standardised measures ensure that varying perspectives and opinions of respondents fit into a limited number of predetermined categories (Patton, 1990:14). The description of trends is usually numeric and is generated by studying a sample which leads to a generalization. For the aim of this research a basic quantitative approach was employed to generate demographic data on the

sample and to offer a broad, initial impression of factors impacting on learning transfer. Emerging factors were used to design the semi-structured interviews that followed to probe and extract examples to answers given in the questionnaire. Univariate statistics were then used to explore single variables including age, gender and educational background, amongst others. The use of the questionnaire has been identified as a feasible method of data collection because it is economic in terms of time and financial cost. As mentioned earlier, the findings from the questionnaire will be used to outline the demographic picture of the companies participating in the study.

From a constructivist point of view, where the main concern is to find issues of representation to make up the social world, one can notice that, although different from qualitative techniques, quantitative methods help to portray a picture of the social world and its constructs using an alternative perspective. The quantitative content of the research shall be displayed in terms of age of respondents, educational background, years in employment in the organisation and so on. These variables will acquire considerable importance when the content analysis of the qualitative data is taken into perspective. Therefore, a quantitative aspect can be consistent with a constructivist stance.

Qualitative Research

Patton (1990:13) states that qualitative methods give the possibility to the evaluator to 'study selected issues in depth and detail'. This means that the fact that the researcher can 'approach fieldwork without being constrained by predetermined categories of analyses

contributes to the depth, openness and detail of qualitative inquiry.' Due to the mixed approach used, this study ventured into the field with a predetermined proposed model for learning transfer in organisations. This will inevitably give some structure to the questionnaire but there is still a degree of flexibility in the semi-structured interviews. Although time consuming and often difficult to interpret and generate trends, qualitative methods give a broader perception of the world as seen by respondents. Such methods can also augment the validity of results obtained through quantitative methods by assisting in the validation and interpretation of data collected. Interviews can be considered as critical since non-verbal responses are also taken into consideration. Instant clarification of misunderstood points is also an important feature of interviews (Patton, 1990).

Below, a general comparison of both aspects considered gives an overview of the key differences that help to provide a more comprehensive study, if seen as complimentary. Quantitative aspects considered to make this research more robust include objective and numeric aspects. On the other hand, desired facets from a qualitative approach are inductive and verbal. Although not necessarily generalizable, this gave me the opportunity to see the microclimate in research firms and how it affects transfer of learning.

Quantitative	Qualitative
Objective	Subjective
Deductive	Inductive
Generalizable	Not generalizable
Numeric	Verbal/Word

Table 3.1 Comparison of quantitative and qualitative approaches

Description and Justification of the Research Study

The primary research was undertaken in two settings in the information technology (IT) industry in Malta which is divided into two main branches: IT service providers and IT training providers. In a recent study commissioned by the Ministry for Infrastructure, Transport and Communication of Malta (MITC), ten licensed training providers and twenty three registered service providers were identified. The study, entitled 'Scoping study on the demand and supply of ICT Skills', sought to identify the current labour market requirements on the island in the ICT sector. The study by MITC, however, was not extended to freelance consultants. Furthermore, the most recent companies that have joined the ICT sector are not included in the latest published ICT Service and Training Providers Directory. An existing version of the ICT Directory counts one hundred and fourteen businesses offering services as ICT providers. This figure also includes a small number of training providers. The latest version of this directory is currently being compiled.

Data were gathered in two different ways. First, a questionnaire was administered in order to generate descriptive data. More in-depth data were collected through the use of qualitative semi-structured interviews. In order to obtain information on the firms that could have informed the study as part of the target population, data were also collected using records from MITC.

Interviews have become one of the most popular research tools used by social scientists. They are so extensively used that Benney and Hughes (1956) quoted in Burgess (2000) refer to modern sociology as "the science of the interview". The semi-structured interview was the main data collection instrument for reasons highlighted in an earlier section. It was felt that the provision of a 'standardized' procedure, even if from a qualitative aspect, could provide a balanced environment and give confidence to the researcher since the schedule was the same. Although there is this element of standardization the expected result of probing into the respondent's thoughts was achieved, (namely when describing in which cases superiors do not fully encourage staff to try out new things). Using face to face interviews is perceived to add more rigorous data to the identification of factors that affect the transfer of learning at the workplace in various ways. The interviewer, however, has to gain the respondents' trust and willingness to assist in the mining of data that need to be collected. Gaining this unconscious access, the interviewer is put in a position to exploit 'variables' other than verbal ones when answering questions. Nonverbal responses play a critical role during interviews. Patton (1990) notes that nonverbal cues communicate 'attention to' and "concentration on" the process going on during the interview. It was

therefore important to take notice of nonverbal communication, such as fidgeting when particular questions were asked and such behavior was not overlooked.

A basic questionnaire was administered prior to the semi-structured interviews. Some findings from the questionnaire were used to inform the design of the interview questions with the aim of probing and extracting more information. The function of this questionnaire was to generate descriptive data related to demography. Other questions similar to the ones used during the interviews were also asked with the intention to generate basic trends that could possibly bring out patterns explained during the interviews. Burgess (2000:101) briefly explores the use of interviews alongside the use of surveys and states that there is no long-term relationship between the researcher and respondents in these cases as is, in fact, the case for this research project. He moves on to say that normally questions are formulated before the interview takes place so as to place the researcher in a position of control the situation. An interview schedule was developed for this study, which sample is found in Appendix 5.

Interviews

The aim of having semi-structured interviews alongside the questionnaire was to provide a complement to the resulting descriptive data with personal feedback from respondents. The questions in the questionnaire were used as guidelines by the interviewer to find out more on the answers submitted in the questionnaire. "The advantage of an interview guide

is that it makes sure that the interviewer has carefully decided how best to use the limited time available in an interview situation." (Patton 1990,:282)

In an effort to further understand the intricate factors that affect the transfer of learning at the workplace, interviews with staff of the participating businesses and educational establishment were carried out. Interviews seemed to be a highly appropriate data collection tool to explore respondents' different perceptions through the sharing of experiences. Semi-structured questions ensured that an element of standardization was kept throughout the interviewing phase (May, 2001). May (2001:120) claims data collected provide such rich insights into 'people's experiences, opinions, values, aspirations, attitudes and feelings.' Another critical factor considered is the standardization in the manner in which the questions were explained. The standardization typical of a structured interview also provided elements for 'comparability' (May 2001:122) between responses. May continues to say that by using this method there is scope for statistical representation and generalisation. Eyles (1998) describes interviews as a conversation having an intended end goal. Interviews lead to the production of detailed responses that could potentially refine the results of the study through exploration of issues that cannot be addressed through quantitative data gathering techniques.

Based on the Situated Learning Transfer Model developed as a result of the literature review, the interview design consisted of three parts. Following the demographic data collected in the questionnaire, the sections in the interview unfold as follows: Learning,

Individual Level Effect and Organisational Effect Level. The learning section serves to orientate respondents with concepts of learning and how they can take place at the workplace. This section also helps to instill a reflective stance in respondents. The second section was set to explore factors that inhibit or foster transfer of learning at an individual level. Factors that influence individual performance were also explored. The final section covering the interview schedule dealt with Organisational Level Effect. The section was designed to elicit information pertaining to the transfer of learning that could be derived as a result of organisational policies and work environment.

Questionnaires

As noted above, the Situated Learning Transfer Model was generated as a result of an extensive literature review and is influenced by Holton's (1996) HRD Evaluation Research Measurement Model. The model takes into consideration the individual level and the organisational level effect as the two channels through which learning passes with the ultimate aim of generating transfer and an improved performance. A self-administered questionnaire designed specifically for this study intends to test different criteria addressing three main components of the model and contains four sections:

Section one targets the gathering of demographic data of respondents,

Section two is about learning,

Section three is about individual performance,

Section four is about organisational performance.

The questions were structured for respondents to be asked mainly close-ended Yes or No questions. This method facilitates fast analysis of data as the choice is standardised. This means that the total number of responses is easily averaged to obtain a mean score. However, these questions alone may not give a balanced picture of the situation being studied. Thus, qualitative techniques under the form of interviews were designed to complement the questions asked in the questionnaire. The semi-structured interviews provided open-ended questions that help explain the thinking behind each question answered in the questionnaires. A coding table was used in which different variables, along with scores, were entered. The numerical data facilitate the generation of trends through SPSS software.

The Research Process

Following the shrinking manufacturing industry on the island, financial services emerged in the 1990s. Over the past years Information Technology (IT) and Information and Communications Technologies (ICT) have quickly become an important sector of the Maltese economy offering direct competition to their counterparts in larger countries, including the UK. It was thus felt that studying how learning takes place in ICT could offer future guidelines to help the maximization of potential through learning at the place of work. Keeping the research questions in mind, the data collection process is described below. The sample and access to the organisations under study are highlighted along with different ethical issues concerning the organisations.

The Research Sample

At present, the number of firms operating in the IT sector, mostly in the provision of software solutions areas, is increasing at a fast pace. An updated list of existing companies is not yet available because of various factors, the main one being that a number of small businesses do not survive due to fierce market competition and expected high levels of quality. Operators in this sector vary considerably in size, ranging from freelance workers, micro-enterprises employing about ten persons, small and medium size enterprises (SMEs) employing between thirty-five and one hundred employees and the government's agency employing over one hundred and fifty employees.

An initial invitation for collection of data was extended to the companies that took part in the survey commissioned by the MITC. However, responses were rather sparse; some businesses immediately opted out of the study and others constantly postponed the appointments for data collection. Following these developments, efforts were then concentrated on the identification of businesses that represent SMEs employing up to thirty five members of staff, and an organisation which grew out of SME status due to expansion. The companies targeted were considered to be of typical size for such firms on the island, although no official figures have yet been presented. The latter business (company expanded beyond SME status) employs just over one hundred. The two firms which accepted to take part in the study did so primarily owing to a background history connected to my place of work. Through past projects a strong working relationship has developed which led to the flexibility and trust that both firms have demonstrated. These two firms in

fact, at not time raised the barriers that were encountered when trying to access other organisations. The firms agreed to take part in the study on the basis of anonymity and by allowing their staff to participate voluntarily and on company time. Following the difficulty to access other organisations, the two firms that agreed to offer their responses were attributed an identity to protect anonymity. In fact, interview responses will be classified only by imaginary company names. This is explained further in this chapter.

The chosen organisations are well established in their fields and have experienced considerable growth since their inception. As a matter of fact, both firms came on the market at the same time; however, their growth rate and general development were different. This was a general trait for registered IT firms on the island during the time when the study was planned and data collected. This was a determining factor for the choice of businesses to research. Besides the 'stability' of the organisations, another important factor was to obtain responses from a variety of individuals. The businesses employ a range of people including post-graduates, graduates from the University of Malta and other universities and graduates from the Malta College of Arts Science and Technology, a vocational college that uses B-Tec outcomes as benchmarks. A range of different educational backgrounds also enriched the research population with other qualifications, including certification in IT or other areas following-school leaving age and others who have yet not pursued additional educational learning beyond secondary school. This scenario presents a rich context within which the investigation of factors promoting or inhibiting transfer can take place, making use of different perceptions of learning through diverse components. The following section briefly describes the research firms.

Alpha Numeric Co

Alpha Numeric Co was set up in Malta in 1996. The firm specializes in the provision of IT solutions which range from software packages to IT outsourcing. At the time of data collection Alpha Numeric employed 36 full time members of staff. Owing to the small size of the company, the organisation is very flat and the managing director of the firm is in constant contact with staff. Roles within the firm vary since the general strategy is to rotate roles and responsibilities according to projects in process. This strategy leads to a very open and informal working environment where open door policies are observed as a natural occurrence.

Binary Ltd

Binary Ltd was also initially established in 1996, under a different name in the United Kingdom. In 1997 the fully owned Malta centre was set up and the firm was renamed and re-branded in 2000. Services offered by Binary Ltd focus on software solutions specializing in web based solutions. The firm employs over 150 staff and the size now demands a more rigid management structure with clearly defined roles for the managing director and a core set of managers.

The products developed by both firms demand a high level of specialization as well as the need to constantly upgrade knowledge. Both firms are set up in possibly the fastest changing business spheres and the need to be agile and learn quickly is especially felt.

In total 143 employees were approached to take part in the data collection phase. The study was voluntary and anonymous. Table 3.2 shows a snapshot of the data collection summary.

Questionnaires	Totals
Sent out	143
Returned	108
Interviews	
Number of interviews held	70

Table 3.2 Data Collection Summary

Gaining Access

After reviewing the firms registered in the ICT Directory an access letter was sent to the firms in the initial sample. All letters were sent to the managing director or chief information officer addressed to the individual by name. The access letter, a copy of which is to be found in Appendix 1, provided an introduction of myself as a student/researcher of the University of Leicester and described the aims of the research. Access letters were followed by emails and, where possible, phone calls to confirm receipt of letter. The aim of the email and phone call was to gauge interest and willingness of the firms to participate in the study. In most cases the reply to the email was negative stating "we cannot

accommodate your request at present" or "we are currently working on a big project and cannot spare the time". These responses narrowed down the number of businesses willing to take part considerably. Some businesses operate under two or more company names for administrative reasons with the core number of employees spread over businesses. This enables visibility in terms of expertise marketed and, at the same time, leverage in terms of staff flexibility. A business could provide website design service and a 'solution package' service, which services both involve programming and design and can be marketed in different business segments. The circle of firms therefore tapered at a much quicker pace. This led to the final decision to target the two extremes of SMEs available as ICT Service Providers and one institution to represent ICT Training Providers to be used for the pilot run of the questionnaires. Following an agreement with the two identified firms, meetings were set up with each managing director to explain how the questionnaire would be distributed and to discuss the schedule of interviews. Although they offered to assist the study, a slight resistance could be felt at this point disguised as time constraints. The resistance was not manifested in ways that would hinder the results; however, as figureheads within the research firms, the managing directors appeared to be keen to be visible throughout the process.

When discussing whom to interview, the managing directors, acting as 'gate keepers', expressed the wish to select the staff members. In order to strike a balance, an agreement was reached where at least one person from every department or from a different role in the business would be interviewed. This solution seemed to satisfy the participating firms as it gave them some control over the process. This, however, could have had potential

implications on the overall results emerging from the investigation since as a researcher I did not have full faculty to choose randomly. Although the managing directors could have chosen the 'best' employees to represent them, throughout other projects that I worked on with the firms I feel that the managing directors were honest and unbiased. This is also based on the fact that they appreciated the benefits that this research could eventually have for their organisation.

On the other hand the administration of the questionnaire took a different stance. ICT professionals prefer to interact with 'machines' rather than pen and paper. This emerged from a pilot run of the questionnaire which took place with a group of ICT lecturers from the Malta College for Arts Science and Technology. This process was positive and the questionnaire was then fine tuned. The preferred mode of delivery also emerged. Paper based questionnaires were not favoured by IT lecturers taking part in the pilot. Thus, a web based questionnaire was provided. A sample of such questionnaire is found in Appendix 3. The questionnaires did not necessitate people moving away from their desks and avoided misplacing of the hard copy. A link with an invitation to answer the questionnaire was forwarded to each managing director, who was then requested to forward the link to staff. Participation was voluntary for all staff in the three organisations. It must be noted that the managing directors felt that the questionnaire and interview were a learning event in itself as people would reflect on their ways of doing things at work and possibly help to prompt new work processes.

This approach could be evaluated from different facets. Ethically, I ensured that all data was to be collected anonymously and in strictest confidence. I also ensured that the names of respondents were not published at any time. Anonymity was an imperative ethical issue due to a number of factors. To start with, respondents were hesitant since they feared that the data could end up on the desk of their employer. Being associated with certain thoughts could mean negative repercussions. Since all respondents have a high level of expertise of ICT I had to ensure that the questionnaires were really anonymous and forward a web link that could not identify the respondents through the IP address of their computer. Anonymity was also critical because of the size of the island. In Malta, where everyone knows everyone else, it can be difficult for people to speak their mind and air their own views. For these reasons, interviews were not taped but notes were taken throughout to ensure that my own representation of the interviews remained as close to the respondent's own words as possible. Most staff members were willing to help but hesitant as they feared publication of personal views. However, once the first few introductory questions were asked and their trust was gained by highlighting that this was 'just' a project to help me as a researcher 'make the grade' most people loosened up. It must be noted that these issues were not raised at the training centre included in the study. Here staff members were much more at ease with the processes, possibly due to the fact that most of them had carried out their own research during their period as students. Notwithstanding this, the Director of the Institute expressed the wish for the name of the institution not to be published.

It is understood that the small size of the sample will mean that the findings cannot, with any high degree of confidence, be generalised to the whole ICT industry in Malta. Another factor that leads to the inability to generalise the results could be linked to the wish expressed by the managing directors in the research firms to choose the staff members taking part in the research. The incidence of biased respondents was kept to a minimum by striking a balance where one person from each department took part. However, it is felt that some tentative extrapolations can be made to other Maltese firms operating in the same sector. This could lead to more proactive firms trying to maximize learning and learning transfer at the workplace to obtain a wider and more solid knowledge base.

Collecting the Data

Questionnaires

As noted above, all respondents received a link to a web based questionnaire. This made it easily accessible to answer the questionnaire in their free time or during a coffee break since all respondents had access to internet access points. They could sit wherever it was most convenient, at work or at home to complete the questions. In order not to let it get out of control, a time limit to submit responses was allocated. There were two views to this approach. The flexibility inherent in using a web based questionnaires was regarded as positive. The downside of it was that people who might have been busy at the time of receipt of email may have postponed or ignored/forgotten about the email. I therefore had to chase the managing directors to send reminders to their staff. This might have been disturbing as the questionnaire could have been perceived as trivial in comparison to

paying clients; however, it worked most of the time as the number of respondents increased following each time a reminder was requested. Lefever, S., Dal. M., and Matthiasdottir, A. (2007) studied the advantages and limitations of online approaches to research. They discovered that, amongst others, the main disadvantages were unreliability of some email addresses and lack of willingness to participate from several respondents. In the case of this study, all email addresses were manually inputted in the system before the email was sent out. A receipt notification was also pre-set to monitor receipt and participation. As this was a voluntary exercise, achieving a 100% rate of return was never planned.

Semi-Structured Interviews

A schedule for the semi-structured interviews was designed, based on themes identified in the literature review and on emerging findings of the questionnaire survey. All interviews took place at the respondents' place of work. Most modern offices display an open-plan layout which could have led to potential inadequacies as it could have been difficult to establish a feeling of confidentiality. Having observed these layouts, I booked the board room in each firm. The managing directors were kind enough to accommodate this request and not hold meetings during the times I visited. Holding interviews in the boardroom had the added advantage of making people feel valued from the time they entered the room, which was also of utmost importance to gain their confidence. The layout of the room was deemed to be noteworthy. It was also important to make the room comfortable without any apparent distractions. There were no fixed lines in the room and a poster was stuck on the door to leave mobile phones out. It was ensured that there were no barriers between the respondent and myself and that seating was arranged in a diagonal fashion at all times.

This gives the feeling of ‘equality’ and therefore the experience would possibly seem less daunting.

All interviews started with a greeting and the explanation of the purpose of the study as described in the access letter. The three sections of the interview schedule were explained and the research was put in a ‘real’ context of learning at work. This was achieved by the telling of a brief anecdote. Anonymity was then assured once more and participants were then asked about any concerns that they may have had. All interviewees were then thanked for the time dedicated to the research. An email address was given to each one in case they wished to add further information. In order to encourage further thinking about the learning process, a copy of the interview schedule was handed to each respondent on completion of all interviews in the firm.

Ethical Considerations

John Barnes (1979:16) defines ethical decisions as those which “arise when we try to decide between one course of action and another not in terms of expediency or efficiency but by reference to standards of what is morally right or wrong.” Ethical considerations are identified in this sense vis-à-vis the research, businesses taking part, respondents themselves and potential third parties who may have access to the thesis in future. As stated in the access letter itself, steps were taken to ensure that risks or dangers associated with the research were minimised as much as possible. Taking into consideration the internal social and political balance of the firms involved, anonymity measures were also

taken. However, as noted by Simmons and Usher, (2000), "ethical considerations are necessarily *situated* rather than providing a universal code, since the different ethical dilemmas will be encountered within each and every research context and project". In fact, most issues highlighted earlier were related to anonymity due to internal politics and power games. Respondents needed reassurance that anonymity would be kept throughout the study as they thought that their feelings could somehow impinge on their stability or future prospects in the organisation. Thus, passages from interviews will only be referred to by the imaginary name given to the firm rather than individuals. This appeared to be well accepted by all parties. A copy of the final proceedings will be distributed to the research firms for further transparency.

Since respondents are most valuable to the research project, taking the necessary precautions was critical for the success of the project. This included the creation of good working rapport with respondents at all levels. However, as the island is small and people in business tend to know each other, it was important not to show familiarity with the managing directors in front of staff as that could be interpreted wrongly. Throughout the process of data collection openness and two-way communication were critical and it was important to avoid any misconceptions.

All respondents were approached in the same manner, namely an access letter sent out to both firms. On successful access to the firms, I was allowed to introduce my research and address questions from participants. At the smaller firm, this took place during two

planned set up meetings. At the larger firm, management felt that it was more appropriate if staff were approached by email using the office email account. In both communications, potential respondents were informed repeatedly in different ways of the aim of the research and the fact that the study was part of a doctoral qualification. The identity card provided by the University of Leicester was also used to reinforce this. All participants were offered access to the data once compiled and verified. In accordance with the latest Data Protection Act, confidentiality was assured. Anonymity was kept using two methods: for the online questionnaire, there were no fields requiring anyone to enter his/her name. Also an option choosing not to have traceability of each submission was selected at the design stage. All respondents were made aware that they had the right to withdraw from the research at any time. At the end of the 'briefing' sessions, participant sign in sheets were left by the door for each potential respondent to sign as part of the informed consent process. Respondents who were informed by email were given my email address and contact telephone numbers in case clarifications were required. I must say that this process was facilitated by the large number of staff members embarking on continuing education programmes. The fact that both firms had already been previously involved in research studies for graduates was another facilitating factor.

Besides these technical issues, other matters that could have a long lasting effect may also impact the work life of respondents, especially staff members interviewed. It is inevitable that a certain degree of rapport is established between the interviewer and the interviewee; thus, it was deemed important to seek closure at the end of each intervention. Patton (1990) stresses that the research interviewer is not a therapist. Notwithstanding this, at the

end of the interview, I made myself available for any clarifications required. However, no such instances for clarifications arose; therefore, it was assumed that there were no instances of unfinished business with respondents.

In general, the ethical principles advocated by Winstanley and Stuart-Smith (1996) were taken into consideration. The first principle, respect for the individual, was followed as per precautions mentioned above. Taking note that participants are not the means to the end is a very important consideration for any researcher to keep in mind at all times. In reality, respondents themselves are the end as the data generated could facilitate different avenues for the learning process to take place while at work, thus facilitating the search for new processes. This could possibly improve performance and job satisfaction. The first principle leads to the second one: mutual respect. Setting a cohesive atmosphere where concerns and successes could be shared was therefore imperative. The third principle followed was procedural fairness. The use of a structured interview schedule helped to achieve this objective as all respondents were treated in the same manner and caution was taken not to manifest judgement or prejudice of any type. There were no instances where the topic discussed went against pre-established moral values, including labelling of colleagues. Therefore, the procedure was straightforward with questions answered in a conversation style. The final principle is transparency. To ensure this the data collected were made available to participants. They could see that names of firms or individuals were not related to real names, thus ensuring anonymity. Following these principles, along with leading a respectful study with regard to the interests of the groups involved, (Alderson, 1999) it is felt that the moral obligations towards an ethical and balanced

research were fulfilled. However, at the end of the day "the only safe way to avoid violating principles of professional ethics is to refrain from doing social research altogether." (Bronfenbrenner, quoted in J. Barnes; 979: preface)

Data Management and Coding

Since most respondents preferred not to be recorded during the interviews, detailed notes were handwritten. Soon after the interviews all information was read through in detail and potential valuable points like non verbal communication patterns included. These notes were then typed so as not to lose valuable contextual content. All documents were saved in Microsoft Word ensuring backups on Compact Disc, Memory Stick and by sending copies on personal email accounts. Data analysis was mainly conducted without the use of Computer Aided Qualitative Data Analysis Software (CAQDAS). Atlas.ti was initially the identified software for use for the research study due to its thematic qualitative coding functions. It could have also catered for the quantitative aspect of the study while presenting a number of attractive prospects, including a comprehensive range of qualitative and quantitative approaches to the data within the same package. A free trial version was in fact downloaded for familiarisation purposes using different functions in the programme.

Atlas.ti, however, was abandoned following difficulty to analyze different nodes produced by the codes. This is also referred to by Kelle (2000) due to the heavily compartmentalized data. The information collected from the interviews was transcribed onto Microsoft Word (MS Word 2003). Classification of data according to themes and codes was then carefully

organised and it was felt that Microsoft Word offered the required tools, such as text search and the possibility of linkage between themes, required to analyze the data. Ultimately, as the interviews were transcribed onto Microsoft Word, refraining from using Atlas.ti was also considered from a practical point of view vis-à-vis the different formatting between the two software packages and the need to refer to two separate programmes when exporting and importing data. Keeping the transcript data in Microsoft Word was finally also effective in terms of its consolidation and centralisation.

As opposed to the analysis of the questionnaire, analysing the semi-structured interviews was time consuming as anticipated at the onset of the study. The coding frame was not rigid and pre-established as for the questionnaire. An assessment of relationships belonging to items in a cultural domain was the first step in coding the interview data. Lists of words that 'belong together' due to jargon and 'insiders' language were also developed. Noting specific words used constantly by respondents also provide valuable data and meaning. Broad themes emerged based on the literature review. Following these adjustments, themes were formed due to emerging patterns from interview data. As noted by Denzin & Lincoln (2003: 275) "themes are abstract constructs that investigators identify before, during, and after data collection". They go on to claim that literature reviews are rich sources for themes. In fact, emergent themes were repeatedly being created and readjusted as looking for metaphors or repetitions was helpful in the generation of themes.

Glesne and Peshkin (1992) note that narrative modes can blur the lines 'between fiction, journalism, and scholarly studies.' In an effort to give a more comprehensive picture of the awareness of situated learning in ICT firms in Malta, the questionnaire also constituted an important part of the research. The questionnaire was pre-coded (a sample of the code can be found in Appendix 3) to allow the efficient classification of responses into analysable categories. This is the way in which we allocate a numeric code to each category of a variable. This coding process is the first step in preparing data for computer analysis. It constitutes the first step in mapping our observations into data. (D. Rose and Sullivan, 1996:38) Following this procedure data was manipulated through univariate analysis. In other instances data was cross-tabulated using a bivariate method to generate relationships.

Limitations and Critical Reflections

Like most research methodologies, the study also has limitations and gives rise to critical reflections. It is crucial to acknowledge these limitations to be able to maintain an unbiased approach due to their presence in the research. Gaining a true picture of the research firms is deemed to be of critical importance. However, as Lange et al (2000) claim, this can at times be difficult due to the SME owners, and, in this case, employees being suspicious of academic research. Provoking interest in the research was in fact not easy; only two firms accepted the invitation out of all local providers. Time pressures, deadlines and unavailability of staff were the main reasons organisations gave for not participating. The two participating firms however, were very cooperative and accessible.

Being considered an outsider, employees were not readily willing to share or disclose information. However, following information sessions about the aims and use of the study, acceptance was eventually gained, possibly even as a result of the closely knit society and helpful nature of inhabitants on the island. When carrying out the semi-structured interviews, I had to be aware of potential pitfalls like sympathising with the respondent or not asking the right questions, which would have made the probe of inferior quality. In view of this research I tried to be aware of these and other potential shortcomings in order to extract relevant data for the study.

Apart from issues pertaining to how research is conducted, one major limitation for this study is that it focused specifically on one sector of the local industry. This will prevent generalisations to other sectors in the local economy, thus making the recommendations industry specific. It would be interesting in fact if this study were to be carried out across different economic segments in the country. Another potential limitation to this study could reflect on the chosen data collection methods. Given the opportunity, a longitudinal study, where observations of respondents would be carried out, could yield more relevant information resulting from the possibility of matching responses from semi-structured interviews and from questionnaires to the actual actions of respondents. Aware of these main limitations in view of the research, this inquiry aims to generate new knowledge on factors influencing the transfer of situated learning at the workplace.

Conclusion

Exploring the objectives of the research project through the methods employed when analysing data, this chapter has described the mixed methodological approach followed. The philosophical debates introduced at the beginning of the chapter informed the approach in which data were collected and analysed, while shedding light on respondents' feelings about learning at work. Special care was taken in how respondents were approached after taking into consideration various ethical issues.

An effort was made to strike a balance between the subjective data generated through semi-structured interviews and the objective data as depicted through the analysis of the questionnaires. Although the data produced cannot be generalized to the whole population of ICT workers in Malta, it could generate insight pertaining to the maximization of learning opportunities at work. The following chapter presents the data and discusses its meaning and significance in light of the main research questions.

Chapter 4

Research Findings and Discussion

Overview

The aim of the thesis is to investigate factors affecting the transfer of learning and, in doing so, to build on existing models of learning transfer. This is achieved by an investigation of formal and informal learning as described in the methodology chapter, with a particular focus on situated learning as part of informal learning. As observed in the literature review, most previous studies have exclusively explored the transfer of formal learning, thereby neglecting the growing importance attached to informal learning and tacit knowledge. This study, therefore, takes an original approach by also looking at informal learning. As a result of the literature review the situated learning transfer model emerged. This model was used as a broad guide for the analysis of data.

This chapter will present findings arising from the research and will discuss them in the context of existing studies of learning transfer. The chapter is divided in three sections; first, it briefly explores the demographics of the sample outlining the foundation for the ensuing discussion. Then respondents' perceptions and experiences of workplace learning are sketched out to establish a basis for discussion of contextual factors supporting or inhibiting learning transfer. The analysis then moves to address these contextual factors from the two main components of the situated learning transfer model: the organisation and the individual. As mentioned in the previous chapter, analysis of interviews was

executed without the use of Computer Aided Qualitative Data Analysis Software (CAQDAS).

Descriptive Statistics

Demographics

The processes of data collection were described in detail in the methodology chapter. Keeping the three research questions in mind, the questions in the questionnaire targeted different components of the situated learning transfer model. Thus, the data given will move from the top of the model, starting with data gathered related to formal/certified learning and informal learning, moving down to the organisational level effects and individual level effects that potentially impinge on the transfer of learning.

The demographic data collected from the whole survey sample includes: gender, age, position in the organisation, contract type, years in the firm, qualifications achieved so far and where participants came from before joining the current employer. The data, together with the percentages and frequencies, are presented in the tables below.

Table 4.1 gives an indication of the gender spread of all sample subjects. A total of 78 (72.2%) respondents were male and 30 (27.8%) were female. Since these figures represent all subjects taking part in the study, a clearer percentage of gender type directly related to

the execution of technical information technology tasks is not available. The data, however, immediately indicate a gender bias apparent through the skew towards the male gender. This skew represents a broader gender bias in the sector.[2]

Variable	Total Sample	
Gender		
Male	78	72.22%
Female	30	27.78%

Table 4.1 Gender

With reference to age, Table 4.2 shows that the majority of employees are between 20 and 25 years, representing 35.59% of total respondents interviewed. The percentages do not show the distribution of how age can be compared to job function. This divergence could to some extent explain the variable responses obtained, as outlined later in the chapter.

Although the situation may be slowly changing, the evidence appears to suggest that job mobility in Malta is still not very popular. Job security and company loyalty still seem very important to the Maltese population. In his research about violation of psychological

[2] Data pertaining specifically to the IT sector is not currently available. However between January and March 2009, the Maltese labour force showed the following results for employed individuals: 62.5% were male employees and 30.1% were female employees showing a gender bias skewed towards the male working population. On the other hand, the skewness is inverted for inactive employees with a 33.4% inactivity for males and 67.5% for potential female workers.

contracts in the Maltese Public Service, Cassar (2001) found that job security is highly valued and that a high percentage of his research population felt that it was threatened.

As demonstrated in Table 4.3, this is reflected in the type of contracts offered to employees. A total of 67.5% of those in the sample were in fact employed on indefinite contracts. Compared to the 32.4% employed in recent years and offered definite contracts, one may deduce that a change in attitudes and approach towards the stability that most middle-aged Maltese employees are used to may be changing in view of market forces impinging on local firms. This contention leads to the next figures related to the number of years the surveyed subjects have been employed by the current employer.

The growth in the IT sector over the last decade led to the creation of new jobs in the industry (KPMG Report, 2007). This can be partially accounted for as per results shown in Table 4.4. It appears that both companies had recently experienced a growth period (only partially speculative since employee turnover was not taken into account). A total of 25.6% of the surveyed population alone were employed less than 12 months prior to data collection. The highest percentage represents individuals joining the organisations between 1 and 3 years ago, which equates with the IT business boom on the island during which 31.6% of respondents were employed.

Variable	Total Sample	
Age		
under 20	3	2.54%
20 – 25	42	35.59%
26 – 30	23	19.49%
31 – 35	30	25.42%
36 – 40	10	8.47%
41 – 50	7	5.93%
51+	3	2.54%

Table 4.2 Age

Variable	Total Sample	
Contract type		
Definite	38	32.48%
Indefinite	79	67.52%

Table 4.3 Contract Type

Table 4.5 shows the range of educational achievements for all sample subjects. The data suggest a relatively high level of qualification and certification, reflecting a similar trend

across the sector. Certification refers to examinable courses offered by in-company academies, including Microsoft, Oracle, and Cisco amongst others. These certificates expire after a pre-established timeframe requiring an upgrade by holders in order to keep abreast with current technologies. Although the study only provides a snapshot at a given time, and therefore generalisations are difficult and inappropriate, Table 4.5 appears to indicate an increasing number of employees holding a bachelor's degree.

Variable	Total Sample	
Number of years with the organisation		
Under 1 year	30	25.64%
1 - 3 years	37	31.62%
4 - 6 years	23	19.66%
7- 10 years	27	23.08%

Table 4.4 Number of years of service

The next category features employees who have achieved diplomas. Most of the diplomas accounted for in this study are issued by adjudicating bodies following National Vocational Qualification (NVQ) standards. In these cases, certification is embedded in the course/diploma curriculum. However, as noticed below, several surveyed subjects have

chosen to opt for professional certification as a standalone qualification. Table 4.5 also shows that IT industry related certification is also popular with graduates at bachelor's level. This could suggest that there is a perceived connection between such qualifications and future employability.

Variable	Total Sample
Qualifications achieved	
O Level	12
A Level	3
Diploma	24
Certifications (IT or other such as ACCA)	9
Bachelors Degree	35
Masters	14
PhD	1
Diploma + Certification	4
Bachelor's Degree + Certification	15

Table 4.5 Educational Backgrounds

Variable	Total Sample
Previous employer	
Private Sector	45
Government Sector	15
University	31
Vocational College	20
Other	7

Table 4.6 Employment Background

As part of the study, respondents were asked if they felt that they had brought any knowledge with them to their current role (this is discussed in later sections). It was therefore felt that it would be useful to determine the nature of their previous employer. As per results in Table 4.6, similarly to data describing age groups, it must be noted that for the majority of studied subjects, 51 had come straight from full-time education and therefore this was their first employment. On the other side of the spectrum an almost equivalent number of individuals, 45, had joined the two research firms from other private organisations.

In summary, the demographic data collected from the sample population gave a descriptive overview of the populations in the two research organisations. At first glance, it is apparent that younger age groups are heavily represented overall leading to an almost insignificant representation of older age groups. The demographic data are also heavily skewed towards a male dominated environment with only 28% of the population being

females. This data also help to set the scene for the remaining sections to be analysed. The data indicate a high level of continuous education with a considerable number obtaining degrees or diplomas. In fact, the researched firms appear to be the first employment opportunity for the majority of individuals surveyed.

Interview Findings

In an attempt to move away from traditional empirical approaches to research on transfer of learning (Baldwin and Ford, 1986., Baldwin et al, 1991., Clark et al., 1993), the primary purpose of the interviews was to reveal factors influencing the level of transfer of situated learning at the workplace. However, some attention is given to the role of formal learning, as it was seen by many respondents as an important aspect of their development. The discussion of results then proceeds to highlight factors that affect situated learning transfer at the workplace.

Although two firms were targeted for the study to observe significant differences between them, many themes emerged that were common to both organisations. In particular, the interviewees repeatedly mentioned similar factors at the organisational level in both firms. Indeed, as will be seen, the potential for aspects of the work environment to support and enable learning transfer was one of the dominant themes to emerge from the investigation. This finding provides some support for the sources cited previously in the literature review, sources which point to the importance of workplace environmental factors that condition

workplace learning. (Baldwin and Ford, 1988; Broad and Newstrom, 1992; Tracey et al., 1995; Holton 2003)

As observed in the literature review, such work has emphasised the notion that work environment and culture instilled by norms, attitudes to work and management attitude towards staff potentially set an atmosphere in which people determine how much to give to the organisation. In addition, members in the organisation with a positive attitude towards learning were perceived to act as potential catalysts for the transfer of learning. It must also be noted that, on the other hand, the organisational environment, as well as the perception of learning itself, could inhibit learning as well as promote it. For example, Fuller and Unwin (2003b) address this in their research through the concept of restrictive and expansive learning environments. The idea that the organisational environment can support or inhibit learning and its application is supported by research carried out by Egan (2009) which found evidence that innovative and supportive subcultures were positively associated with motivation to transfer, thus supporting the notion that a work environment perceived to be encouraging has an impact on the transfer of learning. Considerations such as these were kept in mind when collecting and analysing the interview data.

Research Outcomes

As outlined in the methodology chapter, the findings were analysed according to three broad themes related to learning at the workplace and its transfer according to the situated learning transfer model:

Respondents' general perception of methods of learning, representing the overall concept behind the model addressing formal and informal learning,

Factors in the organisation that could impinge on the transfer of learning, including the work environment, business goals, and work relationships,

Factors pertaining to individual respondents in the firm: this theme includes an investigation of respondents' perception of the use of imported know-how, personality characteristics and willingness to implement new learning at the workplace. Moving forward from the first theme, this section describes the impact that the above-mentioned factors have on transfer of new learning.

The sections that follow describe the findings of the research study, which are, in turn, discussed in comparison to other previously published research.

Respondents' Perception of Learning and the workplace learning environment

It appears that previous research in the field of learning transfer did not address the respondents' perception of 'learning' directly. In their study of factors that influence the transfer of learning of course content to the workplace, Lim and Johnson (2002), for instance, addressed the 'degree of perceived transfer of learning' but not respondents'

understanding of the term 'learning'. This could be viewed as a significant omission, as it seems likely that the individual's ability and desire to transfer learning are affected by his/her perception and awareness of learning itself. With the aim of understanding further the contextual factors that influence the transfer of situated learning, this section describes how respondents from the two research firms perceive and define learning. In this discussion perceptions of both formal and informal types of learning are addressed.

When looking at the data, it was immediately apparent that the interviews succeeded in promoting insight within the interviewees by casting an explicit focus on the issue of learning. A striking element during the analysis was the use of action oriented vocabulary by the interviewees. The most common words used by respondents when talking about knowledge and learning were:- /share/ or /sharing/ and /observation/ or /observing/. Instances where these words were used include:

> "...because colleagues will ***share*** with you their knowledge and work methodologies", "…***sharing*** of ideas and points of view might help in learning new skills etc.
>
> *Alpha Numeric Co. (Project Leader)*
>
> "…you can also learn by ***observing*** because you will be seeing different people's working methods…"
>
> *Binary Ltd. (Manager)*

An indication that this positive attitude could be related to attempts to apply shared or observed methods in respondents' daily work can be found in the extract below. In this instance, the respondent sees observation as a method of cross-fertilization of best practice. This statement supports the work of Cheng and Ho (1998), which also draws a connection between positive learning experiences and a propensity to transfer what is learnt.

> "It's good to observe other people and see positive things in them and apply them in our day-to-day life to always be better than you are".
>
> *Alpha Numeric Co. (Managing Director)*

Observation as a method of learning was also attributed to new recruits in the firm.

> "…trying good practices that are ***observed***. Acquiring new methods of coding never tried or known."
>
> *Binary Ltd. (Team Member)*

The elements of sharing and observing seen above are indicators of the social aspect frequently described by advocates of communities of practice, and, in this respect, both research settings bore some similarity to a community of practice. As echoed in the literature review, the movement from the periphery to the core of the firm is a social as well as a learning experience. This finding creates a parallel between the significance of what the interviewees stated in the research as a result of real situations or authentic domain activity, as labelled by Fuller and Unwin (2003) and what Lave and Wenger (1991)

determine as a community of practice. Given that there is no apprenticeship present in both research firms, the indication of the journey from novice to expert is not strong or clearly visible, because new entrants are normally specialists in the field when they join. However, the concept of social integration that helps individuals to form part of the core could be taken into consideration.

The findings suggest that respondents generally recognised the importance of informal and situated learning processes, such as learning by observing or by experimenting. For example:

> "Learning is a complete cycle of **observing**, ***experimenting and doing the job on one's own***. If the last step is not achieved the learning has not been accomplished.
>
> *Alpha Numeric Co. (Manager)*
>
> "learning is a ***process*** where we acquire ***knowledge*** through patterns between different things. A person would then be able to be creative and innovative"
>
> *Binary Ltd. (Project Leader)*

The above extracts give an indication of how these two respondents define 'learning'. Evidence indicating support for the claim that learning is a constant process in organisations can be noticed in the extracts below. These findings appear to indicate ways in which the workplace can be seen as a site for learning.

> "We have meetings where we describe what we are doing. Colleagues give constructive feedback on our work, and this helps us to refine our approach and consider other methods that could give better results. You are always learning in these meetings because someone can say something that you have not thought of before."
>
> *Alpha Numeric Co. (Team Member)*
>
> "My supervisor always asks what I'm working on and helps me out when I get stuck. I also get ad hoc feedback and suggestions. The feedback is on various levels: work feedback, day to day feedback, attitude feedback, even emotional, like the way I handle the team."
>
> *Binary Ltd. (Project Leader)*

Statements such as these suggest that, within the case study organisations, the culture of learning seems to be an established pattern. Such a finding is consistent with the notion of a 'learning culture' as described by Tracey et al., (1995: p241) where it is suggested that a continuous learning culture constitutes a "pattern of shared meanings of perceptions and expectations by all organisation members". In such an environment, Davenport and Prusak (1998) argue that learning or the transmission of knowledge can become embedded in contingent and incidental social interactions in the organisation. Talk that happens by the 'water dispenser' or during breaks can often be an important input in the learning patterns within an organisation. However, while in an abstract sense the interviewees in this study acknowledged that opportunities to learn informally do exist, they often seemed only vaguely aware of how such opportunities, or the learning that resulted, could be anticipated or distinguished from other workplace activities or interactions. Indeed, while employee

perceptions of informal learning remain vague and under-developed, there are likely to be considerable difficulties in ensuring that such learning is fully transferred.

There were, however, indications that respondents had developed some sense of the situations in which informal learning was most likely to occur. The following extracts further demonstrate the importance of incidental, unplanned learning episodes. This form of discursive learning is also identified in Baker (2006). Furthermore, this casual approach was highlighted in a research by Marsick and Watkins (2001) when they refer to informal and incidental learning as learning events which lack a specific structure. Some respondents echoed such claims.

> "There are ***many instances where you can learn***. You can do it during the different meetings that we have or even during coffee breaks with colleagues. We discuss a lot at these times".
>
> *Alpha Numeric Co. (Team Member)*

> "Team meetings provide a great opportunity for each one of us to learn from one another."
>
> *Binary Ltd. (Team Member)*

This suggests a perception that learning can be a situated process arising from social interaction at the workplace. The above extracts also sustain findings relating to 'learning as a by-product' from Eraut (2007). However, whereas in Eraut's writings individuals appear to be unaware of possible occasions where learning occurs as a by-product, the extracts appear to indicate that respondents are conscious that learning can be a by-product of meetings or other incidental conversations. Contextual learning, such as learning points from meetings or learning through the quality of relationships in the workplace will be discussed below. Additionally, such contextual learning can potentially provide sound foundations for situated learning at the workplace, and it seems to have been often recognised as such by respondents. Crucially, such recognition arguably makes the learning that arises from such informal processes more amenable to transfer.

Indeed, not only did respondents seem aware of informal learning opportunities but the findings from the questionnaires appear to suggest a general preference for this mode of learning as per Table 4.7 below. The majority of responses indicated that staff interviewed preferred to learn through observation of others (35%) and trial and error (30%) respectively. Training courses came only fourth in preference with only 14% of respondents preferring it as a method of learning.

Training courses	13.85%
Observation of others	34.62%
From group discussions	17.31%
Trial and error of methods	30.38%
Other	3.85%

Table 4.7 Learning Preferences

It is of course difficult to make any concrete generalisations about learning preferences and behaviour on the basis of these findings from a limited sample. In addition, the data do not allow for the separation of different types of skill. It may be that individuals prefer to learn different types of skills in different ways. For example, IT skills may be an area preferred to be learnt in a formal setting. However, some may prefer to observe interpersonal skills informally or in social settings. Notwithstanding this qualification, this result can be seen as surprising if one considers that most of the influential research published on the subject of learning transfer, (Broad and Newstrom, 1992; Holton, 1998; Do and Lim, 2002), is focused on formal learning. What the findings emerging from the study seem to suggest is that informal and situated modes of learning may be viewed by individual learners as important, and therefore the ways in which such learning may or may not be transferred merit some attention.

The findings referred to above included the following suggestions: /mentor/, /asking/, /reading online articles and publications/, /personal search/, /internet/, /asked around/, /instructions from technical architect/, /studying on my own/, /research/, /training by colleagues/. Data from the interviews support the finding that respondents were aware of and, in many cases, preferred informal modes of learning. Even those who preferred to learn more formally appreciated the role to be played by less formal styles. This is illustrated in the extracts below:

Trial and error,

> "Simply reading about a subject is not as effective as applying the material to a real situation, for example I developed a PDA software application without knowing much about the subject before. Reading about it didn't help me much as actually ***getting my hands dirty and coding the actual application***."
>
> *Binary Ltd. (Manager)*

On-the-job + formal courses,

> "I like having ***formal instruction***, so that I understand things in my mind, and feel confident when working. However, it is important to have an opportunity to put the skills into practice - we did a course on PeopleTools after which there was little work that involved PeopleTools. Many of us don't feel particularly confident using this software."
>
> *Binary Ltd. (Team Member)*

Formal courses,

> ***"Going on a course*** and having an expert is always very helpful. When you go on a course you also make the time to be careful to what happens in the class and be away from work. You are more conscious of what is happening."
>
> *Alpha Numeric Co. (Team Member)*

On the job,

> "On the job in an environment that accepts that not all resources are experts in the field. Unfortunately in a highly competitive market customers do not always allow this and turn their interest to suppliers that have specific expertise in their field."
>
> *Alpha Numeric Co. (Project Leader)*

It was surprising to note that although most of the interviewees had achieved a high level of education or vocational education, no one referred to certification during the interviews unless prompted. This may suggest that they habitually associated 'learning' with less formal modes of learning.

Knowledge-sharing, informal learning and problem-solving between programmers

Shifting the attention slightly from learning to knowledge, the interview data consistently indicated that respondents felt that their organisational environment promoted values and behaviours that placed importance on acquisition and sharing of knowledge. Moreover, they saw a clear connection between acquisition of knowledge and performance. In some

cases, this also seemed to lead to a higher motivation to perform. One of the respondents stated that:

> "Knowledge is valued as an essential possession for the ***execution*** of the job description that one is employed to serve".
>
> *Alpha Numeric Co. (Managing Director)*

The focus on improving processes and performance seems to be one of the main drivers that instigate people to transfer what they know to the workplace. The critical issue of how learning and skill formation in firms are influenced by the overall strategy of the firm is addressed later in the chapter. Other respondents, from both firms, further emphasised aspects of the organisational environments that seemed to encourage and facilitate the sharing of knowledge and ideas. Furthermore, the knowledge that was shared often seemed to relate to solving particular programming problems, and therefore was generally transmitted in, or collectively shaped into, a readily-applicable form. For example:

> "At times someone finds himself in a problem which you overhear or maybe he asks you for a simple solution. In this case you can ***try your knowledge to solve the problem sharing it with all people involved***".
>
> *Binary Ltd. (Team Member)*

> "Sharing of coding ideas and functionality can be helpful to transmit more knowledge. Centralising any development methods ensures employees learn how certain situations were coded and how they can be used in the future."
>
> *Alpha Numeric Co. (Team Member)*

These insights support the findings of Pillay et al. (2003:102) which emphasised the importance of learning at work through situated observing and experiencing. The respondents here frequently alluded to learning processes similar to those described by Pillay et al (2003). For example, one respondent referred to:

> 'onsite observing and experiencing – immersion process – gradual accumulation of experiences and skills – like building blocks doing the daily tasks and building knowledge and developing competence over time'
>
> *Alpha Numeric Co. (Manager)*

The above extracts where the sharing of knowledge is mentioned also suggest that this learning was, in many cases transferred on to the job itself in the case study organisations. This is a process where learning and its transfer are influenced by the context that surrounds them. As following sections will demonstrate, this transfer process can be facilitated or inhibited depending on a range of contextual factors.[3] Through the problem-

[3] An interesting issue for possible future research emerges in relation to confidence building at work through situated learning.

solving and knowledge-sharing activities described above, respondents seemed to establish a strong working relationship based on learning from each other, feedback and cooperation. Drawing parallels between the research firms, one could conclude that, when confronted by specific programming problems or issues, the employees tried to 'locate resource people'[4] in order to produce quality IT services and products. Their initial and preferred response to tackling a problem or issue was therefore to turn to informal networks of colleagues and engage in knowledge-sharing. To summarise, the significance of the discussion so far sets a solid foundation for the interpretation of findings coming in the next sections through a better understanding of how respondents feel about learning.

The initial findings suggest that a significant level of informal learning in the form of situated learning exists in the two research firms. Moreover, informal learning, particularly in the form of problem-focused knowledge-sharing was viewed positively by the great majority of respondents as an activity that adds value for improved job performance. The findings also indicated that acquired learning and knowledge are frequently transferred to the workplace through processes of sharing and observation, and through the social aspect adopted during meetings or other small group gatherings. Thus, the picture is one of learning, and the transfer of learning, as continuous processes that appeared to be integrated – very often in an implicit way – into everyday work practices. In this sense, we can begin to see how learning and its transfer can be described as 'situated', that it is

[4] The term 'resource people' refers to other staff members that individuals can learn from and share knowledge with, thus they become resources.

something that can often take less structured or unstructured forms, and is frequently embedded in everyday work processes or social interactions.

In the next section, the discussion turns to the emergent contextual factors that impinge on the level of transfer on an organisational level.

Factors affecting the transfer of situated learning within the organisation

This section is set to explore factors that impinge on the transfer of learning at the organisational level, addressing one of the primary elements of the situated learning transfer model. As mentioned in the literature review, aspects of the organisational environment such as climate, culture and opportunities available to apply learning have all been identified as important influences on the transfer process.

In the previous section, the findings indicated that the two workplaces explored in this study seemed to provide relatively fertile grounds for workplace learning. In Fuller and Unwin's terms, they bore similarity to 'expansive learning environments'. As stated already, the problem-centered nature of much informal learning assisted the transfer process. Yet, the extent to which such knowledge was successfully transferred depended on a range of environmental factors, an issue to be discussed below.

The work environment

The work environment provides a multitude of contextual factors that impinge on the possibility of transfer of new learning to the workplace. At the organisational level, work environment factors were classified into sub sections including: interest and involvement, transfer climate, team environment, learning opportunities, planning for future use, and communication. These classifications emerged primarily as a combination of the extensive literature review and themes arising from the data themselves. It must be noted that 'transfer climate' is a prominent feature in the proposed situated learning transfer model where it appears to be the result of both organisation-level and individual-level factors. This does not imply that the proposed model is to be changed. Transfer climate is still considered to be a product of both level factors; however, it must also be noted that respondents appeared to suggest that transfer climate is predominantly present in the work environment. In view of this presence there appears to be a consensus on the fact that both research organisations provide opportunities for learning leading to the application of the learnt or observed material. Responses indicated that this is seen through improved processes and attitudes to the job. Moreover, the extracts below seem to indicate that the transfer climate seems to be enhanced both through situational activities as well as through the individuals' willingness to implement new learning. In the individual-level factors identified below, respondents have acknowledged the impact personality characteristics can have on the transfer of new learning; however, this was not linked to the transfer climate. Changes in the model are proposed in the concluding chapter.

A description of the classifications emerging from the research findings now ensues.

General attitude towards learning and knowledge

This section explores how employees perceived the degree of general support for learning, knowledge-sharing and knowledge acquisition within their organisations. Such perceptions were constructed in relation to the general culture in the firms and the extent to which management was interested in employee development. Participants' reactions to this were not homogeneous as in most other categories. Looking back at the research by Fuller & Unwin (2003b), one can trace instances of both expansive environments as well as restrictive ones. Traits of expansive environments, already established in previous sections, can also be deduced in the extracts below:

> "I always know where I'm standing. I have formal six-monthly reviews consisting of a chat and a written report. Also my manager does not hesitate to comment constructively whenever necessary."
>
> *Alpha Numeric Co (Team Member)*

> "I feel that I am always learning something here. I get appreciation on the good things and also criticism which is also appreciated to help you improve your skills."
>
> *Binary Ltd. (Team Member)*

> "I feel excited when they ask me to try things out."
>
> *Alpha Numeric Co. (Project Leader)*

Suggesting a work environment in which employees feel valued and confident, these extracts seem to hint at the notion of 'learning-supportive culture' (Bishop, 2006) where an interplay between values, practices and assumptions takes place. Moreover, it seems that in the above responses respondents' immediate manager leaves room for creativity and development by allowing freedom beyond the strict confines of the job description. These findings reflect the framework developed by Unwin and Fuller (2003) referring to expansive learning environments that encompass culture and structural elements. For example, employees are being given chances to experiment within the parameters of their job; thus, a formative approach to evaluations or reviews appears in these extracts as in the expansive learning culture framework. This framework suggests that a productive learning environment can be fostered if the expansive traits are nurtured. Similarly, in his typology of early career learning, Eraut (2007) identifies 'tackling challenging tasks and roles', which is the process of increasing motivation and confidence when support is shown. Another feature of Eraut's typology is 'consultation', as the employees stated that assistance and tips for improvements were always available in their groups and by their superiors. These factors in the work environment have learning as a by-product (Eraut, 2007), while the extract below exemplifies the concept of consultation within the parameters of feedback and discussions.

> "When designing new systems, everyone can give ideas and they are discussed. This is a great opportunity because each idea is presented and explained on how it will improve the overall development."
>
> *Alpha Numeric Co. (Manager)*

Elements of a restrictive learning culture, however, also emerged and, in this respect, the data painted a mixed picture. The managers below are portrayed as controllers providing a narrow scope within the job. In a study by van der Klink et al (2000), it was found that mentors' performance was a critical success factor for on-the-job training to be implemented. As behaviour is modelled, it can be concluded that instances as described below represent aspects of a work environment that does little to support or encourage the transfer of learning. These examples may not reflect the overall culture in the firms and could possibly be instigated owing to localised poor management:

> "If I had to learn more, the manager should show support by asking questions and giving me the upper hand."
>
> *Binary Ltd. (Team Member)*

> "Not much support is shown!"
>
> *Alpha Numeric Co. (Team Member)*

> "They (managers) are not interested."
>
> *Alpha Numeric Co. (Team Member)*

However, the above were fairly isolated accounts. In general, the majority of responses outlined a positive attitude from management illustrating that the allocation of responsibility to staff could foster a conducive environment for learning at the workplace, thus potentially laying the foundations for the successful transfer of learning.

Opportunities to Apply Learning in the Organisation.

When analysing factors that impinge on the transfer of situated learning in the firms, the respondents' perception of learning opportunities to practise observed methods emerged as a critically important factor. Confirming these findings, Lim and Johnson, (2002) also found that 'opportunity to use on the job' was a major factor for the transfer of learning from formal training programmes. The possibility that observed skills can be applied at the work place was noted by Leo (2001), who explored how the transfer of such learning can be facilitated in organisations. In the extracts below, the respondents highlight actual opportunities when they could transfer new learning.

> "…new ideas that are encouraged is the type of code used (and the format with which is written (as long as the code is well documented)) and prioritising issues. Projects are given to us and it is up to us to prioritise them as long as we finish before the deadlines."
>
> *Alpha Numeric Co. (Project Leader)*

> "..By giving you jobs which aren't of a normal routine or putting you in a situation where you have to use a new approach, like implementing new technology or a new methodology."
>
> *Binary Ltd. (Manager)*

Responses such as these seem to indicate a relatively empowering mode of work organisation that is conducive to the application of learning, since participants seem to be on a constant search to improve their role. However, empowerment may at times have different effects, such as people moving ahead without clear and updated goals. Empowerment needs to be carefully planned, particularly if it is part of a high performance work practice. For example, Sparham and Sung (2005) argue that there is a very fine line between high performance work practices and work intensification that could potentially distract from performance and lead to stress. The following extract illustrates how 'the opportunity for use' also arises through 'empowerment' or by leaving individuals to come up with their own solutions.

> "Often no news means good news but occasionally we meet and discuss. The manager always leaves the first opinion to me. This leads me to search on the subject and learn what is available as much as I can."
>
> *Alpha Numeric Co. (Team Member)*

This response highlighting an inhibiting factor through the lean communication between the employee and the manger is interesting as although employees could have an amount of autonomy, they would still seek feedback on the work processes. The literature review discussed those writers who emphasise the need for a strategic and structured approach within HRD in order to foster the application of new knowledge. For Example Smith-Jentsch, et al. (2001), state that supportive team leaders positively influenced the manifestation of newly acquired skills and attitudes. Such support could include the design of action performance plans that could help the employee remain focused and transfer the appropriate learning required, whether formal or informal, thus avoiding inhibiting factors as illustrated above. In the literature review goal, setting strategy is referred to as a possible motivator in order to make use of new learning. Of critical importance for strategic HRD planning are the functions of 'roles and responsibilities', as discussed by Horwitz (1999). This would have increased relevance in view of the claim by Donovan et al., (2001) that, at times, new skills learnt may never be applied at the workplace.

In accordance with such work, some respondents seemed to suggest that the organisational environment could be more supportive of transfer if there were an attempt to introduce some kind of structure to facilitate the transfer of learning. For example:

> "Things learnt by observation can be used at work, like changing of attitudes toward work conditions and project handling. You can do it by trying the new skills and ways of tackling new situations. If you try new skills you need to know that you are doing it."
>
> Alpha Numeric Co. (Manager)

In the last sentence of this extract, the respondent implies that some structure, or at least an explicit reflective process, would assist in ensuring that learning was transferred. Yet, as previously intimated, the workplace environment has the potential to undermine as well as support the transfer process. This potential has been previously identified, for example in the work of Ellinger (2004), which indicates that workload can at times have an effect on the type of learning and transfer that take place. In a qualitative study, Ellinger identified thirteen organisational deterrents for learning, including 'lack of time because of job pressures and responsibilities.' The extract below appears to support the view that the workload makes it difficult to transfer the new learning.

> "It (new learning) can't be because the implementation at work is very hard. It's ok to learn but finding the right time to use what is learnt is difficult."
>
> *Alpha Numeric Co. (Team Member)*

Although working for the same firm, the following two respondents appear to have different experiences in having the opportunity to use new learning. Looking at data they provided throughout the interview more closely, these two respondents (who work in different departments) made the following comments respectively:

> "My manager gives me free space and time. Usually I'm given a blank page on how and when to work out certain projects. This encourages my creativity and experimentation."
>
> *Alpha Numeric Co. (Team Member)*

"Research into new things is carried out only if a client requests it and there is a particular need."

Alpha Numeric Co. (Project Leader)

These responses seem to imply that the nature of the role of the two individuals potentially conditions their outlook on learning. Although their attitudes could play an important role in constructing such different outlooks, the specific nature of work organisation within their own departments also seems to be a determining factor. It also emphasises the role of managers in creating 'conducive' climate for learning and its transfer. This echoes the work of Eraut et al (1999), who argue that the role of the manager is key in establishing the climate as favourable for learning through their people management. The authors find that in a climate where people seek advice and help each other leads to a more natural process of learning.

The workload appeared to be the most recurring response of interview participants on what they perceived as limitations for them to put new learning into practice. The responses ranged from dismissing the issue altogether by stating that 'there is too much work', to others claiming that the workload is not always foreseeable so 'the gaps are not filled with anything interesting - thus opportunities are missed'. These findings from the interviews, however, do not seem to follow the responses given in the questionnaire where 75% of the responses stated that current workload allows for implementation of new ideas. This could be due to various reasons, foremost amongst which is the flexibility of the interview

situation, where disclosing information or supplying more focused responses might have been easier when the researcher probed further. Although statistics show that the workload appears to be the major deterrent for the implementation of new ideas, there is no clear indication that any new ideas are not implemented. Responses from the interviews revealed three main types of answers in this respect:

> Too much work/overloaded. No time to try new ideas. (5 responses)
>
> Heavy workload leads to tiredness and lack of interest to look up and implement new things unless you really have to. (5 responses)
>
> The workload is unpredictable so one has to make the best of time opportunities. (3 responses)

These responses led to wider contribution from one of the respondents, who explained how, as things stand, this is a lose/lose situation:

> "We've frequently had employees miss training sessions because they couldn't get away from their desk, even though they'd been booked and paid for. The employee then ends up stressed and trapped in the same job day in day out, without the opportunity to learn and move on."
>
> *Binary Ltd. (Manager)*

In the above extract, transfer of learning is not directly addressed. This may be because the informality of the learning context described above makes it possible for respondents not to be aware of the transfer processes occurring. It could almost be considered as an invisible process. However, the point to be made is that an employee who misses out on a learning opportunity is one who will not be able to transfer that learning to the workplace. This provides a useful reminder that the realities of the workplace often result in the reprioritisation of learning and its transfer in favour of more immediate concerns. The next section explores another contextual factor that impacts on the transfer of learning: the transfer climate.

Transfer Climate

In the literature review, it was seen that Pidd (2004) highlighted the importance of various aspects of transfer climate. In this context, the term 'climate' was seen to refer to factors that are essentially cultural in nature. For example, Smith-Crowe et al. (2003) concluded that dialogue, practice and behaviour modelling were effective techniques for promoting the transfer of health and safety training. Conversely, Clarke (2002) found that lack of support from superiors proved to be a major barrier for effective transfer of learning.

The findings of this study indicate that something akin to a transfer-supporting climate existed in both case study firms. Table 4.8 shows that a total of 48% of questionnaire respondents claimed that the organisation supports the implementation of new material learnt, and only 7% did not to agree by categorically choosing No. Turning to a micro-

level, it seems that the data confirm that, to a large extent, learning transfer is supported at an interpersonal level in the firms researched. These findings also support the extracts from the interviews.

Does the organisation show support when implementing techniques newly learnt?	Response Rates
Yes	48.42%
No	7.37%
Sometimes	44.21%

Table 4.8 Organisational support vis-à-vis transfer of new knowledge

When discussing these ideas about different methods of work, do you feel that your supervisor supports you?	Response Rates
Yes	38.71%
No	11.83%
Sometimes	49.46%

Do you feel that your co-workers support your new ideas?	Response Rates
Yes	35.11%
No	5.32%
Sometimes	59.57%

Table 4.9 Support vis-à-vis transfer of learning

"[Managers support transfer by] giving ***leeway to innovation***; encouraging input/feedback; not having too strict rules as to how to go about your role (some guidelines need to exist); constant communication; debate/reason out why certain ideas are better than others (not just 'no that's not appropriate' - but go in the 'why ..."'

Binary Ltd. (Managing Director)

"My colleagues ***support*** me by ***asking*** questions and ***offering*** suggestions."

Binary Ltd. (Team Member)

"My manager is very ***supportive***. He shows this by giving time, also talking about the possibility of implementing new techniques and asking for my opinion."

Alpha Numeric Co (Team Member)

As such accounts demonstrate, the climate established in the work environment can support or hinder the transfer of learning. (Holton et al., 2001; Mathieu et al., 1992). As other writers have noted, supervisory and peer support appear to be critical elements in the facilitation of workplace learning and its transfer. (Clarke 2002:153; Baldwin and Ford, 1988; Hawley and Barnard, 2005). They also seem to constitute a central part of the expansive learning environment (Fuller and Unwin, 2003b). The findings, therefore, begin to illustrate how the transfer process is facilitated through the readiness of managers to support their staff with constructive feedback when issues arise. As demonstrated in the above extracts, the nature and quality of existing working relationships could also play a key part in the generation and implementation of new learning. The data also seem to reveal a high level of mutual support between co-workers. We can perhaps begin to see how such an environment, through its support networks, facilitative working relationships and constructive feedback arrangements, might act as a catalyst for the implementation of new learning.

Other respondents, however, indicated that the climate at the workplace contained aspects that were not so supportive of learning transfer. The extracts below confirm Clarke's (2002) claim the lack of support could inhibit individuals' desire and ability to transfer learning. This could be noticed in daily attitudes, such as limiting the effect of emotional support for projects. Social signals, such as behaviour and influence by superiors and peers, were also confirmed by Roullier and Goldstein (1993) as behaviour enhancers

leading to positive shared behaviour and even resistance to change. The following extracts suggest that such inhibiting factors were, to some extent, in evidence in the two firms.[5]

> "Management ***need to develop a 'can-do' culture*** but at the same time allow for mistakes to happen and resources (money, time, etc) to be consumed during learning."
>
> *Alpha Numeric Co. (Team Member)*

> "Project managers tend to view ***anything not related directly to project work as a waste of time*** and this deters the non-project manager from suggesting new ideas."
>
> *Binary Ltd. (Team Member)*

Thus, the attitude of managers was again seen to be central to the extent to which the workplace provides opportunities to transfer learning and knowledge. These extracts show how such attitudes can inhibit, as well as promote transfer, especially when they support a narrow focus on cost savings or time. The following section explores how communication can be seen as another contextual influence on learning transfer. These findings could support the claim that working relationships have the capacity to enhance continuous learning and its transfer to the workplace.

[5] The research does not indicate specific instances when employees are more likely to find their superiors supportive of their initiatives. The differing demands throughout the project life cycle were not taken into consideration. Such findings could have helped me as a researcher to pinpoint when support is most likely to increase or decrease in intensity. Obtaining more narrative descriptions pertaining to instances where support was not perceived to be consistent could also provide new insights in how support is observed and measured.

Communication

In a paper studying climate in view of the transfer of learning, Hatala and Fleming (2007) draw particular attention to the role of communication. Their study suggests that in an effort to maintain control over subjective perceptions and misinterpretations, firms need to monitor formal and informal communication very carefully. The writers state that these two types of communication can easily be 'misidentified' following the regular flow of informal information captured by members of staff. According to the authors, negative effects on the transfer of learning can result from pejorative gossip on the organisation. Hearing misinterpretations could lead to the need for corrective action in order to keep a stable climate in which learning is transferred. When analysing the barriers to transfer, Taylor (2000) similarly identified the climate as a critical player for the level of application of new skills learnt. He concluded that poor communication between employees and their employers could impinge on the transfer of learning. Taylor's findings indicate that scenarios where information could possibly be easily misinterpreted do often exist at the workplace. An illustration of this is given in the extract below, where the well-worn concept of learning by sitting next to, and gathering information informally from 'Nellie', is raised.

> "By 'sitting next to Nellie' a person can acquire new skills on how to deal with tasks and manage stress."
>
> *Alpha Numeric Co. (Marketing Assistant)*

Of course, when relying on such informal mechanisms, there can be much doubt over whether 'Nellie' is passing on the correct information or practice. The communication conditions in both research firms appeared to tend towards the informal. This was the case at Alpha Numeric Co. Ltd possibly due to the small size of the firm and the flexibility required from staff. Although the duality of informality and flexibility as environments in which learning within the research firms takes place are often seen as adding competence to one's job, it is worth noting that Rainbird et al (1999) interpreted this flexibility as work intensification. Alternatively, open communication in the research firms could be seen as a positive trait for the transfer of learning as there are more possibilities to discuss and share work experiences and get feedback. The picture emerging from the interviews suggests a fairly positive image of the climate in relation to communication in both firms. In general, communication was used to either pass on information or to give feedback, and this in turn assisted the flow of information and promoted reflection on learning, skills and their application. In terms of Fuller and Unwin's (2003b) learning environment framework, there were many indications of an expansive approach, with evidence of teamwork and individual progression (two indicators of the expansive type). Eraut (2007) also makes references to the 'participation in group processes' and 'consolidating, extending and refining skills' as processes leading to learning. The research suggests that such learning takes place through two way feedback and working on cross-functional project teams. Although not designed to inform research on learning transfer, Eraut's model helps to provide understanding on the levels of transfer. The evidence below supports these findings:

"We communicate to give feedback all the time. This feedback can be good or not so good. It usually leads to discussions on how we can improve."

Alpha Numeric Co. (Secretary)

"On some projects, we have quality assurance (i.e. some team members do the work, and others double-check it). They document their feedback and let us know if we are repeatedly making the same mistake."

Binary Ltd.(Manager)

Therefore the above extracts, although not made with direct reference to learning transfer, appear to imply that the dynamics provide scope for situated learning transfer. Communication also acts as a factor that could facilitate transfer by passing on feedback on performance and general information that encourage individuals to actively reflect on the connection between their learning and their work. This is emphasised in the following extracts:

"Often we get informal feedback such as: 'Thanks for your efforts on this over the past couple of weeks, I realise it has been a difficult program to write." It makes you feel valued and willing to try new methods in the future."

Alpha Numeric Co. (Project Leader)

"Communication is not only internal. We do get messages (emails) of appreciation from the client. This lifts the team spirit and we feel good."

Binary Ltd. (Accountant)

These findings show that communication in this research firm could encourage openness and transparency, enabling employees to share their knowledge and ideas, thus facilitating the transfer of learning. However, in one instance, the formal type of communication used in review sessions appeared to be a barrier to the transfer of learning. The following extract shows how communication channels can actually serve to undermine a supportive learning climate if there is a perception that they are being used with ulterior motives:

"Although I fully recognize their (performance reviews) due importance, I am not a great supporter of them, as you will find that people tend to use them for the wrong reasons. That's my experience at least."

Alpha Numeric Co. (Accountant)

Thus, it seems that communication, although an important facet of the learning and transfer climate in organisations as observed in the research firms, can be perceived as a barrier to transfer, if mismanaged. In the next section, the findings highlighting the influence of a team environment on transfer are illustrated.

Team environment

While the attention so far has been focused broadly on the organisational environment in forming the transfer climate, we now turn more specifically to team environments in which the programmers work. Kontoghiorghes and Bryant (2004) refer to Gephart's (1995) definition of high-performance work systems in relation to teams and submit that teams seem to have a critical importance in view of employee commitment learning transfer in the organisation. The teams in the research firms professed to be customer driven in their proactive approach to seek new business and to satisfy existing clients. In accordance with this, most of the work processes were organised in a direct relation to the provision of products and services. However, it was widely recognized that informal learning could, and did occur, incidentally at various stages of the work process. Respondents seemed to agree that this incidental learning, allied with mutual support and collaboration, was central to learning and learning transfer, as can be seen from the findings below:

> "Working in a team shows the importance of communication, having shared standards and trusting colleagues. Trust is very important."
>
> *Binary Ltd. (Managing Director)*

> "In our case, we work project by project. The feedback we get comes in two types. We get feedback from team members as we step from task to task in the form of weekly project meetings (technical feedback). And, finally we get feedback from a director on how the project has gone as a whole once it is over (customer feedback)."
>
> *Alpha Numeric Co. (Manager)*

The above extracts illustrate the tendency for individual respondents to value their team members as trustworthy 'supervisors' who would willingly give constructive feedback. Sharing new learning in this situation could possibly be facilitated through such affinity. Bishop (2006) confirms that in the small firm (such as those that participated in this study) there is a much bigger scope for this kind of inclusion. This possibly brings teams closer and enhances the possibility of transfer of learning in the team through informality. However, the data also highlighted the possible drawbacks of working in a team. The extract below, indicates that at times team working and communication could in fact be a hindrance to transfer of learning in the absence of a common vision.

> "I have learnt that it is very difficult to work in a group [team] where not everyone tries to achieve the same objectives through a 'standard' and agreed-upon basis."
>
> *Binary Ltd. (Team Member)*

We should, therefore, exercise a degree of caution in asserting the importance of team work in supporting informal learning and its transfer. Where there is an absence of common purpose and collective objectives, working in teams may have the potential to undermine the transfer of learning.

This section has therefore added greater detail to the notion of 'transfer climate', (identifying from an organisational level effect) such aspects as communication,

management support and communication as important facets of the climate. Following from the situated learning transfer model, the components that make up the transfer climate here is seen as having a cumulative effect on the transfer of situated learning. It also illustrated these through evidence suggesting that the transfer climate in both case study firms was broadly – though not completely – positive. In the next section, the opportunity to use new learning in the firms is explored as another contextual influence on the transfer process.

Learning and application as a part of the job

Previous sections in this chapter have focused mostly on aspects of culture, communication and interpersonal support that can facilitate the transfer process. However, the extent to which the organisation of work provides opportunity to apply new learning was also of interest to the study. With this in mind, respondents were asked to give evidence of instances where they put new learning into practice. The response below illustrates an example where the respondent learnt on a daily basis through exposure to the work environment. Absorbing new methods and putting them in practice helped in building up the employee's effectiveness and coping skills.

> "This is my first full time job. I am learning every day, how a company runs on a day-to-day basis. I am also learning how to cope with pressures of day-to-day work, projects, etc"
>
> *Binary Ltd. (Secretary)*

In his typology of learning processes and activities Eraut (2007), makes reference to instances where learning occurs as a by-product. These instances seem to indicate areas where individuals could apply and test their abilities of newly acquired skills or knowledge. 'Tackling challenging jobs and tasks' could be one instance where new roles in the organisation could need the implementation of previously observed methods. In the extract below, this respondent makes reference to how he practiced observations previously made when the opportunity to use them arose. Thus it can be said that the opportunity was facilitated by a need that was created in the respondents' role.

> "I am a very good observer. This became useful when I had to do project management for the first time. I had to use managerial and administration skills. Moreover I've also managed to learn other specific technical skills."
>
> *Alpha Numeric Co (Manager)*

A respondent from the other research firm emphasised how the diverse and rapidly-changing nature of technology used in the sector inevitably involves demands in terms of continuous learning and applying new skills. He also revealed the need to reflect on and consider methods how existing skills can be applied in various ways as he moves from one project to the next:

> "Although technically I had some skills already from past experiences, at work I have learnt to formalise them into processes to become more scalable in a larger team. Having

said that, due to exposure to other technologies, I have become more fluent in a wider range of technologies."

Binary Ltd. (Manager)

Similarly, the following respondent refers to the project-based nature of his work, and the learning that occurs as a by-product (Eraut, 2007) as a result. He observes that he has developed a better customer approach and more confidence as a result of his ongoing learning through exposure to different kinds of projects and types of client.

"I learnt to be more confident in what I do. I have improved my interaction with the customer and also with the team members. I have also learnt how to manage a project better and what to expect when developing projects of different kinds for customers."

Binary Ltd. (Project Leader)

The opportunity to acquire and practice new skills therefore seems to be enhanced in environments (such as, perhaps, project-based work) that present a variety of experiences. This resonates with some of the existing research on learning transfer. For example, opportunity to continuously use new skills learnt is also one of the factors on Holton's (1996) LTSI model. Extending this approach, Lim and Johnson (2002) studied the opportunity to use new skills in more detail by identifying situations such as planning, program development, reporting and so on.

In the case of the study, basic quantitative data seems to indicate that respondents do find scope to use the newly internalised learning material. The findings also show that the organisation tends to be supportive of using learning and knowledge to implement change. When asked if they believed that new learning could be used at the workplace, 62% of respondents said 'yes'. This indicates that there is congruence between the willingness to apply new skills and the flexibility provided by the research firms. Table 4.10 further illustrates these observations.

It would thus seem that the case study organisations provided – at least to some extent – not only a variety of work experiences to enhance the diversity of learning opportunities, but also opportunities to implement that learning in order to promote change.

When there is new knowledge how flexible is the company to adopt changes in how things are done?	Response Rates
Very flexible	3.19%
Flexible	76.60%
Not Flexible	19.15%
Totally not flexible	1.06%

Table 4.10 Organisational adaptability vis-à-vis new knowledge

Whereas this section has looked at the opportunity for use, the next section looks at a slightly different aspect of transfer of learning. The aim here is to capture respondents' perception of what, if any, planning mechanisms are in place in the organisation for the implementation of new learning. To what extent, we might ask, is the transfer of learning a planned and structured process?

Planning for future use

The findings in this section investigate how the two firms plan to put into practice new learning that goes on, whether it is from formal training courses and certifications or less formal modes of learning. The picture emerging from the data suggests that, just as situated learning occurs in a largely informal fashion, so too does the process of transfer of learning. Matching new situations which arise to past similar situations in a fairly ad-hoc way seemed to be the most common process as described in the extract below.

> "Even though you can stick to your normal everyday routines, new development leads to changes and challenges. Certain opportunities come when problems are encountered. You try to think of similar problems and use experience.
>
> *Binary Ltd. (Project Leader)*

If the situation is new altogether then know-how is sought by resorting to external consultants or by training people with the right skills. In this case, the two research firms

did not seem proactive in trying to anticipate future needs or ensuring that more knowledge is transferred across the board from people with additional know-how.

> "An important factor is that when you upgrade the knowledge, you risk in losing the stability and performance provided by 'old knowledge."
>
> *Binary Ltd (Project Leader)*

A number of respondents found it difficult to think of specific examples of learning that they intended to transfer in future. On the other hand, some respondents could think of projects or applications that they could implement as a result of knowledge they had acquired through informal learning. However, they foresaw difficulties in applying these ideas due to constraints including time, support and resources.

> "I thought of implementing an online system for managing bug reports. This could be used by the development team so that they reduce paperwork and filing. In the end it was an idea and I did not do it because I had no time to spare".
>
> Alpha Numeric Co. (Manager)

> "I really don't know how we could be more proactive. Maybe by trusting us and our methods he would give us way to 'experiment' new methodologies which could be beneficial. But I doubt this very much."
>
> Alpha Numeric Co. (Team Member)

Reflecting this lack of structure surrounding the transfer process, most models, including Holton (1996), do not feature a planning stage where transfer design is broken down into stages. In one of the few accounts that do allude to the need for some degree of planning to assist the transfer process, Belling et al (2004) make only brief reference to the 'opportunity to input to the strategic planning process' as a facilitator of learning transfer. The findings from this study suggest that the neglect of transfer planning found in the literature may also be found in practice. The importance of learning – in particular, keeping up to date with new technologies – and of being able to use this knowledge to perform were generally seen as important in the case study firms. However, much less attention was given to how this application might be achieved or facilitated through the provision of a supporting structure or formal plan. It seems plausible to suggest that this may undermine the transfer process, and the following responses appear to support such a suggestion (Table 4.11).

Exploring different aspects of the 'organisation' pre-empts the idea of a strong relationship between the planned or unplanned nature of learning transfer and the 'lifestyle' adopted within the organisation. The evidence referred to in this section seems to indicate that this relationship is, to some extent, a product of interactions and subtle interplay between the employer and the employee. This echoes the assertion advanced by Bishop (2006), who claims that '*informality and contextual forms of rationality*' seem to govern the way the small firm operates. Bishop (2006) also states that planning of training in such firms is generally not clear and structured, rather 'fuzzy', possibly without a formal business strategy in mind. Although the data collected here do not allow for an extensive analysis of

the extent and type of planning that take place in the research firms, it seems fairly clear that transfer of learning does not seem to be a planned and managed activity and is instead constructed in a less formal, more emergent fashion, in a similar manner as described by Bishop (2006). The extracts below suggest that there is little planning to extract learning opportunities from reviews, and where action is taken to support transfer, it tends to be fairly haphazard and unstructured.

> "Post project reviews (or retrospectives as called in SCRUM) are very important. Unfortunately they are not well organised and facilitated at our workplace."
>
> *Binary Ltd. (Project Leader)*
>
> "We don't have reviews - we should do but we don't, either time constraints or people cannot be bothered."
>
> *Binary Ltd. (Team Member)*

If the company had to change some policies, would it be easier to use new knowledge on the job if there were a formal planning mechanism to facilitate it?	Response Rates
Yes	70.33%
No	29.67%

Table 4.11 Policies vis-à-vis new knowledge

In the following extract, the respondent appears to take the view that the review sessions, while informal, can still be of significant use in terms of assisting in the application of knowledge:

> "Review sessions might help to fine tune/correct and/or confirm any knowledge acquired. This is truly important for me in order to have some assurance.
>
> I believe it is very important to have review sessions. They are able to gauge you and to provide a measure of performance."
>
> *Alpha Numeric Co. (Manager)*

Evidence here indicates that transfer of learning is not considered or planned in any formal or structured manner in the case study organisations; essentially it is left to happen naturally when the opportunity arises. Only when probed did respondents really seem aware of instances in which learning was transferred; then, it tended to be in primarily informal ways, such as during problem solving situations. While the data collected do not allow for any definitive conclusions to be drawn on the effectiveness of such transfer or its impact on performance, it should be noted that some respondents did not necessarily view such informality as a barrier to effective learning or its application (echoing, for example, the findings of Sung et al, 2000). Determining the benefits (or otherwise) of formalising, or bringing structure, to the transfer process could be a useful focus for future research.

Following the structure provided by the situated learning transfer model, the next section will take a look at the role of the individual and individual agency in influencing learning transfer in the research firms.

Individual factors affecting the transfer of situated learning

In this section, I will look at the individual-level characteristics that can influence the level of transfer of learning in the research firms. Previous research has mainly viewed these aspects from the point of view of off-the-job courses. In an attempt to move the debate forward this section will look into the individuals' roles and their connection to the social practice of work in view of learning at the workplace (Billet, 2001).

While the focus of attention in recent research on transfer has often fallen on the role of organisational-level effects, some writers have continued to remind us that the individual's subjective conditions and orientations can also impact on the transfer process. In general learning theory, the importance of individual subjectivity has increasingly been recognised in recent years. For example, Bloomer and Hodkinson (2000) claim that different learners perceive the same realities differently, depending on their disposition and willingness to seize various learning opportunities. Similarly, Lave (1996, pp161-162) observes that:

"There are enormous differences in what and how learners come to shape (or be shaped into) their identities with respect to different practices… Researchers would have to explore each practice to understand what is being learned, and how."

In the literature review, some writers attempted to integrate individual dispositions into explanations of learning transfer. The model illustrated by Baldwin and Ford (1988) was amongst the first to take trainee characteristics into account. Their model implicated a number of factors in the transfer process, including 'trainee characteristics', which comprises variables such as ability, personality and motivation. Broad and Newstrom, (1992) shared similar views.

Although these models are mostly based on research into formal learning, the broad principle of individual characteristics influencing the transfer process can also perhaps be applied to informal learning. For example, if we consider the issue of motivation, Kontoghiorghes (2002), follows Holton et al (2000) and Mathieu and Martineu (1997) in claiming that motivation to learn is influenced by personal and situational characteristics. Referring to formal training, Kontoghiorghes claims that motivation is a predictor to the transfer of learning. Given that situated learning is mostly informal, and its transfer unconscious, one could speculate that an atmosphere where motivation is high, could lead to more attempts to transfer observed practices or other.

Another individual-level factor considered by some writers to be important is 'personal know-how. Personal know-how gathered with experience throughout the working life is thought to stimulate situated learning at the workplace. This emerges from the literature review in view of how transfer design can be adopted to maximise learning interventions. (Holton, 1996). Previous sections in this chapter have outlined evidence to suggest that the research firms tend not to plan or provide opportunities for transfer in any explicit, structured or systematic way. As such, this may place greater onus on the individual's own propensity and ability to transfer learning.

The individuals' perception of opportunities to share information is also considered to be important in view of the possibilities of sharing new learning by word of mouth. This echoes the claims of Hodkinson and Hodkinson (2004) and Bloomer and Hodkinson, (2000) where the agency of the learner is seen as crucial in determining how learning and knowledge are acquired and applied. In recognition of this, the questionnaire asked about the opportunities to share information acquired from training courses. The following two extracts from the questionnaire results make reference to contextual influences on learning transfer that could affect individuals' disposition to transfer new learning. In Table 4.12, 44% have agreed that there is an opportunity to share ideas. However, 24% did not agree. While the responses given in the questionnaire were limited to pre-defined options, therefore making it difficult to explain this pattern in full, this finding could be attributed to the fact that attendance at formal training courses was not available to all respondents during the 12 months prior to the data collection.

Do you have the opportunity to share information from a training course with your colleagues?	Response Rates
Yes	43.75%
No	23.96%
Sometimes	32.29%

Table 4.12 Opportunity to share new information from training courses

The situation however changed when a similar question was asked in relation to sharing new ideas. Individual characteristics in relation to the possibilities of enhancing learning transfer came into play in Table 4.13 where 63% agreed that they have opportunities to share ideas contrasted with only 2% who professed that they do not. Bekcett and Hager (2002) make reference to a dimension where the learner anticipates instances in which it is possible to share new learning that took place. Encouraging individual attitudes that could capitalize on these instances could potentially increase opportunities for transfer of learning to take place at the workplace.

This necessity to belong and feel comfortable sharing thoughts and ideas could possibly be explained through the table below, which contrasts significantly with the findings above. Here responses indicate that participants feel more able to share ideas rather than skills acquired in formal training instances. This could possibly be linked to Lave and Wenger's (1991) claim that full membership in the community of practice is sought, in this case

possibly by generating new ideas and taking ownership of them while sharing. This could be a case of 'having the game under the skin' and a possible path to obtaining full membership to the community at the workplace.

Do you have the opportunity to share any new ideas with your colleagues?	
Yes	62.89%
No	2.06%
Sometimes	35.05%

Table 4.13 Opportunity to share new ideas

Notwithstanding these findings indicating a positive atmosphere for learning, in their study investigating apprenticeship programmes, quoting their previous 2002 study, Fuller and Unwin (2003:46) found that "young people and older employees alike will share expertise even where workplace conditions discourage positive attitudes to learning and collegial activity". This supports the claim that, even in unfavourable environments, individuals can choose to share knowledge and expertise gathered tacitly in spite of the exposure to the working environment. Therefore, the role of individual agency in the transfer of learning may be more extensive than is often acknowledged. The extract below illustrates how even under potentially uncomfortable circumstances information sharing can take place resulting in potential learning opportunities.

"I think it is when someone points out problems and provides solutions. The "uncomfortable" situation helps people to realise what is wrong and how it can be done."

Alpha Numeric Co (Team Member)

To explore further the issue of the individual's contribution to learning and transfer at the workplace, in the next section attention turns to respondents' awareness of skills and knowledge that form part of the skills, experience, qualities, know-how and dispositions that the individual brings with him/her to the workplace, in effect, his/her personal baggage.

Imported know-how

In order to investigate the extent to which respondents were conscious of the skills they possessed, they were asked to think of what type of know-how they believe to have brought to the firms when they joined. The responses were not easy to categorize. In a broad sense, however, participants tended to make a clear cut division between core technical skills required for the job and soft skills, and they were more likely to respond in terms of technical skills. The responses fell into three broad categories in order of the most recurring responses respectively:

Addressing a purely technical skill

Not considering that they brought anything to the organisation at all

Made reference to an interpersonal skill, or personal trait e.g. enthusiasm

The ratio of responses from interviews for the above categories was 6:3:2. This ratio could bear a significant meaning in view of the readiness to learn and use new learning. The fact that a number of respondents do not feel that they brought any know-how to the organisation perhaps provides support for the claim that much learning and its application are effectively tacit in nature (Eraut, 2007). To really assess the extent of such tacit or 'invisible' transfer may require extensive periods of workplace observation, and this is something that perhaps should be taken in mind for future research.

Confidence could also play a role in the ability to identify know-how brought into the company. Confident individuals may have felt at ease modelling behaviours imported from a previous role in another firm. This confidence could provide learning opportunities by observation and possibly during group meetings (Eraut, 2007). The extract below echoes the above claims about confidence. It clearly indicates a connection between the individual's own confident approach and his/her propensity to acquire and apply new knowledge.

> "My previous job was with a local company delivering a service to the local community. What attracted me to this company was the foreign exposure. This provided me with the opportunity to meet people from larger businesses and work on projects of a larger scale. I always managed to develop a good rapport with my clients and this has significantly enhanced my knowledge. On the other hand, the experience I got from working with

large scale projects, (some of a certain strategic importance) required a lot of responsibility and this improved my self-confidence in no small terms."

Binary Ltd. (Team Member)

In contrast, another respondent hinted at the implications of low confidence for the transmission of knowledge and ideas.

"If the person is ***shy*** or has a ***low self worth***, then his idea will not go far"

Alpha Numeric Co. (Team Member)

Looking at a similar question answered in the questionnaire, the Yes/No responses in Table 4.14 gave a much bolder answer with 74% of the interviewed staff agreeing that they brought in new knowledge. This may indicate a degree of self confidence on the part of respondents.

Do you feel that you brought new knowledge and ideas into the organisation on joining? (eg. teamwork, or other job specific skills)	Response Rates
Yes	73.91%
No	26.09%

Table 4.14 Respondents' perception on imported knowledge

The quotes below illustrate some of these examples where the two respondents recognize that they contributed to the knowledge base of the firm in their own individual way, both in terms of technical skills and 'softer' skills. However, their knowledge does not appear to have been shared with other colleagues.

> "I think that I mostly brought around knowledge about programming, which is a pity given that I have much more knowledge in many other subjects other than computer areas."
>
> *Alpha Numeric Co. (Team Member)*

> "I don't think that I brought any technical knowledge into the company, other than knowledge which I had acquired through my degrees and involvement in student organisations life. I brought freshness, energy and enthusiasm to learn and achieve."
>
> *Binary Ltd. (Team Member)*

These responses seem to indicate that respondents are unaware that they could be learning day-to-day material and not realise that they are implementing new knowledge. This resonates with findings suggesting that most situated learning occurs unconsciously. It seems that a number of opportunities to transfer new learning could potentially be lost due to a lack of awareness of the learning process taking place. Lack of awareness could therefore be a significant factor that inhibits the transfer of situated learning at the workplace. The response to the questionnaire question in Table 4.15, however, indicates

strongly that there is some awareness that new processes are learnt but the data gathered do not give further evidence of the transfer of what is learnt at the workplace.

Have you learnt new processes (ways of doing things or dealing with people) since joining the company?	Response Rates
Yes	94.74%
No	5.26%

Table 4.15 Situated learning as perceived by respondents

The following extracts indicate how this learning can be transferred to the workplace causing a change in behaviour on the part of respondents. This form of adaptability and putting in practice observed soft skills are difficult to measure, but data presented here give some indication of how it might occur.

> "I learnt lots of new skills on MS Office and payroll system. I also had to learn about insurance and employment law, both through courses and job experience. The joy of working in open plan environment whilst safeguarding privacy at the same time is that you learn how to deal with people on the team, including difficult people"
>
> Alpha Numeric Co. (Secretary)

> "(smiles).. a lot! At university they teach you how to learn, behave, have the right attitude and loads of theory while on the other hand at work you learn how to handle pressure, prioritise depending on the time available, learn how to be practical, ethics, professionalism, learn on 'real-world' projects not just text-book case studies, interaction with clients around the globe."
>
> Binary Ltd. (Team Member)

However, not everyone may embrace new methods willingly. When asked if there was anything new learnt at the workplace, one of the participants said "not to volunteer for tasks and not to accept management responsibility". This comment might reflect negative aspects concerning factors influencing learning and transfer at the workplace environment and on the individual's own dispositions. Moreover, the inclination of an individual to try new things could also impinge on the willingness to adopt new methods. This issue of relationships between personality characteristics and learning transfer is explored in the next section.

The following section of the analysis explores how personality characteristics are considered to impact on the transfer of learning from the point of view of respondents. Interesting insights into how the individual has the power to affect the knowledge base are investigated.

Personality characteristics

As discussed in the literature review, some writers have emphasised the role of individual agency and personality in the learning and transfer process (e.g. Billett, 2001). With this in mind, the interviews were analysed to uncover ways in which personality characteristics and their impact on human agency can influence the transfer of learning at the workplace.

Respondents' attitudes to the relationship between learning and consequent change were first explored. In this respect, their outlook on change as a result of new learning did not appear to be entirely positive. Participants seemed to recognize that in order to implement new knowledge certain qualities were necessary. Although respondents appeared to think that "certain personality types", referring to staff members who do not like change, may not openly enjoy learning, positive personality characteristics most frequently used were: /drivers/, /being positive/, /believing/, /risk takers/, /persistence/, /ability to find and use the right channels/, and /trust/ respectively. However, it was notable that respondents tended to speak of such qualities in abstract terms rather than in specific relation to their own experiences. Only when prompted did they begin to offer examples of their own experiences. Some of the personality attributes identified as important by respondents are identified in the following extracts:

> "***Being positive*** and ***believing*** in what he is saying are always helpful to succeed."
>
> *Alpha Numeric Ltd (Team Member)*

"Of course that personality matters because they can be ***drivers*** and make sure to drive the point home."

Binary Ltd. (Team Member)

"Being too ***pushy*** or too subdued might both fail to successfully implement new ideas. One needs a balance between confidence and diplomacy."

Binary Ltd. (Team Member)

The questionnaire that was distributed contained a question directly related to the personality attributes in view of trying out new ideas at the workplace. As shown in Table 4.16, the responses came out very strongly at 99% showing an almost complete consensus in favour of there being such a relationship between personality attributes and trying out new ideas. The above extracts compliment these findings by illustrating different situations in which ideas can be successful or not according to the personality characteristics associated with the individual. The extracts also seem to imply that an outgoing personality and a positive attitude are perceived to be desired personality attributes to implement changes as a result of new learning. Baldwin and Ford (1988) also found that trainee characteristics like ability, personality and motivation had an impact on the level of transfer of training programs. This research also appears to imply that a dominant personality might find challenges in obtaining the same results. Billett (2001), states that 'ultimately, individuals determine what constitutes their invitational qualities' in

order to exploit learning opportunities presented at the workplace. This observation is supported by findings in the research.

On the basis of these findings (albeit from this one sample), we can perhaps suggest that employers (and indeed, academics) need to recognize the impact of personality characteristics on learning transfer so that they can design more effective systems for ensuring that transfer occurs. Individual differences in terms of the way in which learning opportunities, and opportunities to apply learning, are perceived mean that a 'blanket' approach may not work; individuals may need to be assisted in developing their own transfer strategies.

Such a suggestion resonates with previous research that identifies particular personality traits connected with learning transfer (e.g. Baldwin and Ford, 1988). However, the following extract highlights a less positive perspective. When asked how he shared information, the following respondent stated:

> At times when I find a problem, or maybe hear others talking about a problem, I don't always feel like sharing that information. If I tell others, at times it would take much longer to complete the job.
>
> *Alpha Numeric Co. (Team Member)*

A propensity towards a more individualistic mode of working and problem-solving may therefore inhibit transfer through collaboration. The next extract shows another aspect through which personality characteristics could subtly manifest themselves as an obstruction to the flow of learning. In this instance, formal reviews including performance appraisals are not perceived as a learning experience which can be developed and an opportunity for growth.

> "I don't believe that my behaviour is influenced by reviews and reflections…. In the long run things never change much.'
>
> *Binary Ltd. (Team Member)*

We can see, therefore, that individual learning and reflection styles also have an impact on the tendency to consciously put learning into practice. Critically, in these instances, this individual's personality characteristics could act as a barrier to the effective transfer of learning.

Do you think that an individuals' personality plays a role in how active they are in trying out new ideas?	Response Rates
Yes	98.95%
No	1.05%

Table 4.16 Personality vis-à-vis individual activity in the firm

Individual personality is seen to be a powerful 'niche' that could be further developed in order to understand and enhance the transfer of learning. Given that most research so far has concentrated on the transfer of formal learning instances and on environmental influences on learning transfer, these findings show transfer of learning from a different perspective, one that attempts to shed light on factors that condition the transfer of less formal types of learning. The final section of this chapter will concentrate on the significance of informal methods by locating them explicitly within the context of current academic debates.

Discussion

This study explored different factors that affect the transfer of situated learning to the workplace. This was achieved using the situated learning transfer model as the guiding analytical framework. Following the literature review, the model emerged as a potential structure against which to align the research findings. However it must be noted that areas like 'strategies and policies' and 'business goals' identified as significant in the literature, and subsequently included in the model, have not emerged in any significant way in the findings. 'Business goals' and 'strategies and policies' only appeared under the disguise of a sense of urgency in the business rather than as a potential learning tool. They were never mentioned directly in any way that indicated that the two items as presented in the situated learning transfer model could impact substantially on learning transfer. The data therefore suggested the need for revisions to the model. A typology for situated learning transfer that emerged as a result of these findings is proposed in the concluding chapter.

To recapitulate, data were collected through a questionnaire survey and a series of semi-structured interviews. Due to the relatively small sample size, caution should be exercised when generalizing the findings beyond the two case study organisations. However, the data seem to provide evidence that in many respects supports studies carried out previously in the field of transfer of learning. The findings for the research appear to identify a number of organisational level and individual level factors that influence the transfer of learning. These factors can be 'mapped' onto the learning transfer model described in the literature review, and thus used as a basis for further research into the influences on learning transfer. Perhaps the most significant way in which the study represents an advance over existing studies on learning transfer is that it attempts to emphasise the importance of informal learning in the transfer process. Investigating and measuring informal learning has always proven a challenge for researchers, but the fact that it is difficult (or even impossible) to quantify should not mean that we ignore it altogether. It is hoped that the findings of the study give some indication as to how informal learning can be incorporated into models of learning transfer.

The situated learning transfer model is offered as an initial template for more in-depth or wider studies in the area of transfer of learning. As suggested above, further refining needs to be made to the proposed model to make it more conclusive and measureable. The typology suggested embraces aspects of the model that could potentially make it more operationally feasible. The model builds on existing models; for example, Holton's (1996)

model in this instance has been the major influence for this study. However, although the areas identified in the model could be applied in the research, it was felt that, due to the lack of definition of how learning is acquired and applied and respondents' awareness of the process, a more in-depth ethnographic method could also inform the narrative episodes of the research. This narrative, together with interview responses, could possibly provide a more robust basis on which to understand and, perhaps, facilitate the transfer of learning.

However, it must be noted that Holton's (1996) model focused on learning by acquisition through training, as opposed to the situation in the firms studied in the research where learning was seen to tend towards the situated and mainly informal. Furthermore, Holton's model appears to illustrate a linear relationship between learning, the individual, and the firm's performance. Edmondson and Singer (2006) argue that this linearity is not necessarily possible. The findings in the research appear to support Edmondson and Singer's claim through the narrative delivered referring to workload, time management and opportunity for use as the main factors impinging on the level of transfer of any new learning. This suggests that the transfer process faces many barriers, and that the connection between learning and the outcome of improved performance is a complex one that merits further research. The notion mentioned earlier that the overall strategy in the firm could influence the transfer of learning is also indirectly addressed by Holton (1996) through references to the work environment, including support for superiors and co-workers. The responses obtained in the study appear to confirm this notion.

In essence, the findings appear to indicate that transfer of learning is affected by a number of factors related to both organisation and individual. Factors at organisational level, referring to business strategy, superiors' support, co-workers' support and work environment, seemed to play a critical part.

As noted in previous sections, learning can take place through a variety of settings. Normally, however, the ultimate objective of management and employees alike appears to be improvement of work processes rather than learning for its own sake. The focus on improving processes and performance seems to be one of the main drivers that instigate people to transfer what they know to the workplace. Edmondson and Singer (2006:2), in their paper identifying issues between learning and performance, acknowledge the common belief that learning leads to an improved performance. However, they go on to say that 'learning can be messy, uncertain, interpersonally risky and without guaranteed results.' Following the argument further, Sung and Sparham (2005) argue that high levels of work participation can lead to work intensification and stress, leading to an impoverished, rather than enhanced, performance. Countering this affirmation Edmondson and Singer (2006) go on to describe how strategy cascaded from the senior management of one firm made it successful through the collaborative, hands-on approach used by its highly skilled employees. Learning and skill formation can therefore be influenced by the overall strategy of the firm which can be a major factor for the climate instilled, thus decreasing the possibility of hindering learning from happening. The two research firms do not have an established pattern for learning and skill formation of staff as formal learning is primarily used when new technologies need to be learnt and used at the workplace.

Therefore, if a learning strategy had to be in place in the two research firms, there could potentially be more emphasis on 'informal' skill formation through situated activities, possibly through a linkage to job competencies. Assigning competencies to roles in the organisation could potentially enhance the inclination of individuals and give them more importance than if employees had no knowledge of them. Similar to findings in Bates and Khasawneh (2005), the study found that, in general, there are factors which, in broad terms, constitute the climate in the firm and which impinge on the level of transfer of learning. For example, a positive attitude towards problem-centred knowledge-sharing was observed in both firms. This, to some extent, resonates with the work of Tracey et al (1995).

As in other studies established in the field, mainly Baldwin and Ford (1988), the work environment was found to be one of the main factors affecting the transfer of learning. In this category, results showed that workload and time pressures are the main barriers to the effective transfer of new learning. The finding echoes, to some extent, those of Clarke (2002). Looking at culture and climate of the organisation, it was found that, although not always tangible and visible to the eye, issues pertaining to the transfer of learning could be identified. These include planning for future use, organisational commitment towards learning, attitude towards learning, and opportunity to use. Studies by Lim and Johnson (2002), and by Seyler et al (1998), describe distinguishing features that were matched with the research which included adequate resources, opportunities to use new skills, and timely feedback. These features were also identified in research by Tracey et al (1993). The support offered by superiors and co-workers was also explored. Support on all fronts emerged to be a critical success factor for successful transfer of learning. Clarke (2002)

supports this view in his study and refers to 'social support' as a 'chief component of the organisational environment construct.' Kozlowski and Farr (1988) and Noe and Wilk (1993) noted the importance of supervisors in supporting developmental efforts by subordinates. Supervisor support for career development might consist of such things as providing a useful performance appraisal, ongoing feedback and providing adequate time for attending training. Hawley and Barnard (2005) identified the importance of peer support in facilitating training transfer over time. Other areas explored in the study that could also be linked to support were the interest and involvement of the organisation, as well as the active promotion of learning and open communication. Evidence from interviews shows that these factors play a role in the predisposition shown by employees when trying to implement new learning at work.

Findings at individual level included some surprising outcomes. The results concerning the know-how that employees brought with them to the organisation were somewhat conflicting. Although 73% of respondents said that they felt that they brought in skills with them, substantiating the statement with evidence during the interview was rather difficult as interviewees mainly considered technical skills. Moving on to personality characteristics, the findings show that personality attributes, such as being an extrovert or taking initiative, could impinge on the employees' likelihood to transfer learning. These findings confirm findings by Kirwan and Birchall (2006), who say that motivation to transfer is enabled through higher levels of self efficacy. Support linking self-efficacy to motivation to learn is also found in Colquitt, Le Pine and Noe (2000). Fisher and Ford

(1998) also confirm this claim, highlighting that indicators related to effort (linked to personality characteristics) had a positive correlation with learning goals orientation.

Implications

In essence, the findings of the research appear to indicate that the research firms recognised the importance of learning, and in general provided substantial opportunities to learn and to apply learning. However, these opportunities were very often implicit, informal and not guided by any clear plan, structure or strategy. Respondents in the study had not previously considered the workplace as a site for learning, much less as a site where learning through observation or which had been indirectly acquired can actually be implemented at the workplace, potentially affecting the organisation's performance. In both research firms learning is not necessarily identified unless it is formal, classroom based or web-based leading to the acquisition of IT skills. Management in both firms appeared to support learning indirectly through the use of meetings or projects. As a researcher I can only but speculate on the potential use of a 'learning curriculum' in these workplaces. How could learning be given some structure? How can new learning be reflected on? When one compares services to manufacturing a stark contrast appears in relation to the structured approach with which individuals start their working experience. In manufacturing firms, there is often a structured plan, especially if apprenticeship is in place. The skill level is observable and measurable. Enhancing skills based on criteria becomes a natural on the job process. In service sectors this structure is not always present, certainly not in the research firms. It would be interesting to see how 'learning behaviours'

could change if more structure is introduced to service oriented businesses. It would also be interesting to conduct a study that compares the perception of learning between individuals in manufacturing companies and individuals in service businesses.

The findings suggest that the research firms seem to lack a structure (or 'learning curriculum[6]'; Lave, 1990) where learning can take place. This can be seen in the findings indicating difficulties with planning for future use of newly learnt attitudes. A tendency towards informal learning seemed to be in evidence in both firms, and this reflects Bishop's (2006) account, which observes that informal modes of learning tend to dominate in small firms. As Bishop observes, this may not necessarily represent a problem as such. However, in relation to the transfer of learning, such informality may mean that opportunities to reflect on and apply what has been learnt could be missed.

The findings also showed that incidental learning (Marsick and Watkins, 2001) appears to play a critical role in the two research firms, and this also raises questions on existing models of transfer which largely neglect the question of how such learning is to be transferred.

As was observed when establishing the rationale for this research, the effective exploitation of skills and knowledge to improve organisational performance and ability to compete has

[6] Lave, (1990) refers to structure as the 'learning curriculum'. In this instance the curriculum refers to the learning opportunities in situated instances. This type of learning takes place in a social context. Participation is also situated similarly to a community of practice.

become increasingly accepted. Therefore, the ability to transfer skills to the workplace to increase competitiveness could represent an important element in achieving adaptability in an ever-changing economic environment. However, one of the findings of the study indicates that we cannot necessarily assume a simple relationship between learning, its transfer and subsequent performance improvements. So-called high performance environments leading to job intensification could in fact lead to inefficiency rather than an optimal performance. Alongside the role of organisational environment and climate in ensuring that transfer promotes improved performance is the role of individual agency and subjectivity. For example, the findings suggest that respondents in the study saw a fairly clear relationship between their own motivation to transfer learning and their performance. This observation appears to resonate with existing studies, for example Kirwan and Birchall's (2006) study of management programmes. They submit that learning outcomes can be used as a way to change attitudes, although the said outcomes do not necessarily have a positive correlation with improved job performance. Kirwan and Birchall found that motivation to transfer was related to performance self-efficacy and learner readiness indicating that there could be some influence on performance. The need to qualify and quantify this influence of transfer of learning on performance, both at individual and organisational levels, however, calls for further research. Following this brief discussion, changed performance as a result of new learning could be an end result of the informal aspect of learning claimed by Billet (2001), and Eraut (2007). Shaping a 'learning curriculum' in order to maximise learning from situated contexts could possibly have an effect on an improved performance.

As will be seen in the next chapter, one of the main outcomes of this discussion is a revised situated learning transfer model in the form of a typology. In turn, this sets the scene for a template for the construction of a learning curriculum at the workplace. Following Lave (1990), the community at the workplace creates the curriculum that allows for integration of new staff. Effective membership producing collaboration amongst team players could create a favourable climate for learning to occur. Engaging opportunities could then be explicitly identified to produce learning highlights. Various components of the situated learning transfer model at organisation level, namely, work environment and all round support, together with components from the individual level, personal baggage/ know-how and personality characteristics, could aid the template in developing the workplace curriculum using contextual learning goals.

Conclusion

The findings presented above aim to add further substance and weight to the revised situated learning transfer model that was outlined in the literature review and, therefore, to advance current understanding of individual and contextual influences on the transfer of learning.

Through the descriptive data and evidence gathered from the interviews, the findings in the study also address the research questions set out. First, results show that sharing of new learning is positively related to the transfer of learning at work. Second, the different methods of learning taking place at the workplace were explored. The focus of the

research expanded a little to include the question related to academic/vocational programmes to incorporate more situated learning instances experienced by staff members interviewed. The results show that learning acquired in both formal and situated settings can be transferred to the workplace with varying degrees of success, depending on various organisation-level and individual-level effects. The results identify key factors that condition the application of situated learning to work. In doing so, they help us to work towards a model for rendering transfer opportunities – and inhibitors – more visible.

Ultimately, therefore, while these responses represent only the views of participants and we should be wary of drawing any concrete conclusions beyond the case study organisations, the findings do seem to provide some support for the situated learning transfer model presented in the literature review. Further, while the data do not allow for definitive conclusions to be drawn on the relationship between learning, transfer and performance, there was some evidence to suggest a link in this respect. 85% of respondents agreed when asked: 'Do you think that learning new skills can improve your performance at work?' Again, substantiation of this finding would require further research, but it does perhaps suggest a possible connection.

The study investigated influences on the transfer of learning at two levels, the organisation and the individual. When analysing factors that affect the transfer or learning from an organisational point of view, the model presented broad headings: strategic goals, peer and supervisor support, and the work environment. In view of the fact that the model could be

used as a template for a learning curriculum, future research could analyse these headings in more depth. The ultimate aim of the study was to investigate factors that influence transfer. The model presented two facets of learning, formal and informal, as types of learning that take place in organisations. The focus, however, was on informal, situated learning. The findings appear to support the model in various aspects. On the organisational level effect, the findings appear to support the model in view of the effects that supervisor and peer support, as well as the work environment, could have on the implementation of new learning. However, no significant support was found for business goals, strategies and policies as outlined in the model. On the individual level effect, the results also appeared to support the proposed model, as it was found that know-how imported into the organization through the hiring of individuals with more experience could provide fertile grounds for observation and practice of new methods of performing processes. Personality characteristics also came out as important in relation to the application of new learning at the workplace, thus supporting the situated learning transfer model. Respondents appeared to feel strongly about the link between personality attributes and trying out new ideas. Finally, it must be noted that, although the model was supported by the findings, it can still be considered as partially incomplete due to the fact that dynamics external to the research organisations were not considered in this study. Market forces could provide extensive possibilities for situated learning and its application at the workplace in order to ensure organisational survival. It would be interesting to see elements, such as how the supply chain influences situated learning in the organisations, researched.

Although there are a number a limitations to the study, namely the small sample size and the similarity in the research firms, overall, the study points to some new directions for the development of new research. Field experiment and observational methods could possibly be employed in order to document research findings directly as they occur, thus providing the research with authentic raw material through which deductions can then be made and compared to other studies. These, and other possibilities, will be discussed in the final chapter.

Chapter 5

Conclusion

The focal point of the study was concerned with identification of factors that influence the transfer of situated learning happening informally in organisations, as opposed to many other studies focusing on formal learning and training. The approach taken was in essence a theory-building one, and it is hoped that while shedding more light on the type of learning taking place at the workplace, the findings of the study can be used to inform future research and practice that aim to understand and maximise situated learning and its application at the workplace.

Following a review of the available literature on workplace learning, its transfer and, more broadly, organisations in general, the objective has been to investigate and refine models of learning transfer and their relevance to informal learning instances. A model of situated learning transfer, building on previous models of transfer mainly from formal learning settings, emerged as a result of the review. This model was used to inform the methodology used to collect and analyse the required data to investigate factors that affect the transfer of situated learning.

As the literature review demonstrated, existing research on 'learning' transfer has actually focused almost exclusively on training or other 'formal' learning based interventions. This is also established in a review paper by Cheng and Ho (2001). Most of the research has focused on trainee predisposition to apply what is learnt from formal training, the work environment and the course content (Baldwin and Ford, 1988; Broad and Newstrom, 1992; Holton 2003). Benchmarking the findings from the study against findings from previous research was therefore, not an option. However, this was never an aim of the study. Instead, it was felt that the claim by Tracey et al (1995) that 'learning is continuous' summarises the premise of the research since it focused on the transfer of informal learning taking place at the workplace on a daily basis. It was, therefore, imperative to move away from an exclusive focus on the classroom setting and investigate what type of learning goes on at the workplace and how this learning is transferred. This concept established the foundations and general direction of this distinctive research study which is reflected in its title: 'Situated knowledge at the workplace: an investigation of factors that influence the transfer of learning'. Making the research more inclusive of various types of learning than the majority of studies that have researched transfer so far, the findings from the study were in tune with recent research that emphasised the importance of informal learning.

As a researcher, along this journey I watched the study unfold. The flexibility of including a qualitative aspect for data and content analysis proved to be challenging, yet it was also a strength of the research design. The fact that the research could evolve and take shape according to responses from participants required discipline to establish a clear focus. While the study could only provide a static 'snapshot' of one point in time due to time

constraints, a more longitudinal approach to explore transfer as a *process* could be a useful direction for future research. Having the possibility to go for a completely unstructured style of interviews could provide more detailed data on the processes through which informal learning is transferred, although data analysis could then be more intricate.

In essence, the primary conclusion of the study is based on the validation of the Situated Learning Transfer Model that emerged in the literature review. A typology illustrating means to enhance the transfer of situated learning, through practices that encourage reflection on informal learning episodes, also emerges as a result of the research findings and this is presented later in this chapter. However, the study also concludes that, in order to understand how such transfer might be facilitated, we must first have a clearer understanding of how situated learning itself occurs, and what factors condition it. These factors have been identified to belong to two broad categories: the organisation and the individual. However, it is felt that further study on the social aspect of learning at the workplace is required to understand more the complexities that surround this constantly evolving phenomenon. The next section briefly summarises the research findings, the conclusions that can be drawn from them, and the potential implications for further research.

A graphic representation of the research findings

In an attempt to clarify the emerging factors that shape the way transfer of situated learning takes place at the workplace, the research findings are summarized below in graphic

representation in Figure 5.1. From right to left the model shows three concentric circles symbolizing three key areas in the research also found in the situated learning transfer model. The outermost circle contains organisation-level effect factors that emerged out of the findings. The factors' positioning does not refer to their importance in the model. As a matter of fact, as will be seen further down, 'strategies and business goals' did not emerge as significantly as initially anticipated. The middle circle represents the 'transfer climate', or rather the invisible effects that influence the implementation of learning. The inner most circle represents the individual-level effect factors that emerged, mainly referring to personality characteristics and imported know-how. To the left of the model another section represents actions where situated learning can take place. These emerging actions can present the first possible opportunity to give situated learning at the workplace some structure that could increase awareness and potential success.

The findings are primarily divided into the following key areas, namely respondents' perception of learning which can be considered an innovative inclusion when compared to other research such as Lim and Johnson (2002). The positive perception of the value of learning appeared to support Cheng and Ho (1998), although their research focused on formal learning through training. Following the situated learning transfer model, the other sections describe the organisational level effect, other individual level effect factors besides the individuals' perception of learning in the transfer of the situated learning equation.

The illustration is based on the central conclusion that, in order to understand how situated learning can be transferred/implemented, we first need to clarify and delineate the various factors that condition the occurrence of that learning within workplace settings. More specifically, the illustration highlights the findings which suggest that situated learning at the workplaces studied emerges primarily from informal situations or day-to-day happenings in working environments, and that various contextual factors impact on this process. More specifically, observations, meetings, evaluation sessions, information sharing and problem solving were the key learning situations identified by respondents. It appeared that findings on the elements of sharing and observation confirmed the social and situated aspect of learning in research by Fuller and Unwin (2003) and Lave and Wenger (1991). Finally the study's research revealed that respondents generally preferred to learn through informal methods like experimentation and observation.

These findings suggest the need for some changes in the proposed Situated Learning Transfer Model. One of the strengths of the model is the incorporation of both formal and informal types of learning. Concentrating purely on situated learning could potentially weaken the situated learning transfer model. The emerging data show that informal learning and its application are still important when skills are updated, in training in project management, and re-certifications of IT credentials to keep abreast with technological development. Perhaps future research could be useful in terms of exploring the relationship between formal and informal learning and its transfer while keeping forces outside the organisations in perspective.

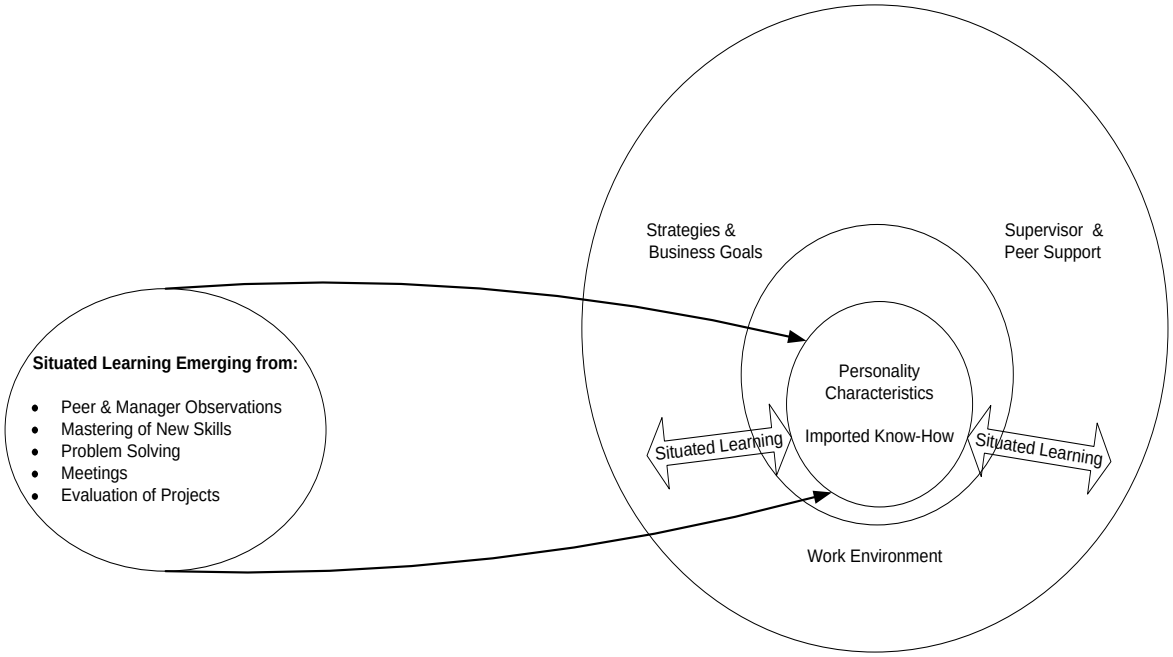

Figure 5.1. Graphic representation of the factors conditioning situated learning and its transfer

Similar to the proposed model, the main areas within the organisational level effect in the graphic representation include the work environment, support by supervisors and peers and strategies and business goals of the organisation. On the other hand, at the individual level effect personality characteristics and imported know-how emerged as the main individual factors that impinge on the level of situated learning taking place. An intermediary circle between the two spheres represents the transfer of learning climate. In agreement with the literature review, and the situated learning transfer model, the transfer of learning climate, seen as the cumulative effect of organisational and individual level factors that influence the transfer of new learning, appears to have a direct effect on the level and intensity of the transfer of learning taking place. These findings seem to support the situated learning transfer model and previous research by Baldwin and Ford (1988), Clarke (2002) and Hawley and Barnard (2005) with the notion that peer support is an important element in the transfer of learning, thus creating a positive learning transfer climate.

The findings appear to confirm to some extent the model of expansive learning environments put forward by Fuller and Unwin (2003). Their research did not specifically address the transfer of learning, but the study has found that many of the features of an expansive learning environment, like having rounded experts who are full participants in the firm, are also facilitative of learning *transfer*. Elements like 'consultation between management and employee', as highlighted in Eraut's typology of workplace learning, also appeared to be significant in terms of promoting transfer opportunities, thus giving more importance to situated learning and its transfer to the workplace. With regard to the issue of business strategy and policy – the more structural aspects of the organisation – it was seen that, in the case study firms, a predominantly informal and unplanned approach was taken with regard to the facilitation of learning and its transfer. This resonates with existing research on learning in small firms. There were of course instances in which greater formality prevailed; for example, the continuous updating of technical and technological knowledge and skills through training programmes was common. In general, however, such learning was not normally planned according to any explicit or pre-defined strategy. Indeed, there was a common view among respondents that bringing greater structure to the learning and transfer process would make that process more 'visible' and therefore more effective. This is an interesting aspect, given the relationship between planned and unplanned transfer of learning and the interplay between employees and management. Findings regarding the individual level effect seemed to indicate that individual subjectivity could have a considerable impact on the transfer of learning. In fact, individual agency could potentially play a much more important role than it is currently recognized (Bloomer and Hodkinson, 2000). The findings certainly supported a

connection between personality characteristics and the propensity to transfer learning. This was linked to the relationship between personality attributes and the inclination to try out new ideas. Interestingly, the analysis of the findings showed that, when asked about what type of know-how they brought into the organisation, respondents made a clear distinction between soft skills and technical skills. This could potentially also be linked to individuals' different approaches to learning and transfer. In fact, the findings show that some respondents prefer to acquire technical skills through a formal training course such as IT certifications. It was also apparent through some responses that soft skills are developed as a result of day-to-day experiences. Similar differences in approach could exist in the way individuals transfer new learning. In general respondents appeared to feel strongly about bringing in new knowledge to the organisation.

The proposed model of situated learning transfer outlines the individual level effect, including personality characteristics and imported know-how, as the main factors that could potentially affect the transfer of learning in the organisation. On analysis of the research findings, it is felt that, in this instance, this section of the model does not fully capture the value and importance of the individual level effect. Other aspects that could possibly be included would be the predisposition to learn and implement new methods and/or skills, the motivation level of the individual, and workplace motivators that could entice employees to implement new methods while striving for continuous improvement.

Moving away from the organisation level effect and the individual level effect, the other main components of the situated learning transfer model remain transfer climate, behaviour change, and improved organisational performance. The model, as presented in the literature review, gives the impression that the progressive relationship between learning, its transfer, subsequent behavioural changes and improved performance is relatively linear. Indeed, there was some support for this in the findings, which suggest, for instance, that where there is management support for the application of learning, respondents feel more empowered to implement new methods. This process could result in an altered behaviour leading to better job performance. However, such a conclusion cannot be definitively drawn or generalised on the basis of data produced by the study; it is perhaps an area in need of further research.

Although the proposed situated learning transfer model attempted to highlight variables that could impact the level of learning transfer, following the analysis it was felt that the model could be improved. With this in mind, a typology for situated learning is presented in Table 5.1, emerging from a combination of literature reviewed and research findings. The typology is in part influenced by Russ-Eft (2002) referred to in the literature review. However the focus is exclusively on informal, situated learning rather than on formal training. New elements to the typology have been added to reflect the highly contextualised environment reflecting the workplace.

A typology to enhance situated learning and its transfer at the workplace

The findings outlined in the previous chapter indicated that an effective environment for the transfer of learning is one where employees are encouraged and enabled to reflect on learning episodes that would otherwise remain invisible and ignored. Rees et al. (1997:490) suggest a better understanding 'of the ways in which 'trajectories' are embedded in social relations, and to take proper account of the interaction of individual choices and constraining parameters in the determination of courses of educational action'. Taking the suggestion on board, the importance of organisational context and individual agency is introduced in the typology illustrated in Table 5.1.

The typology of factors impacting on situated learning transfer, is predisposed by a number of aspects surrounding situated learning and learning at the workplace in general. These aspects have been drawn from research findings and other workplace learning literature as observed in the literature review. Going back to issues mentioned in the literature review, we find that the amount of funds dedicated to formal learning only yield a maximum of 15% transference, hence the reason why this study focused on situated learning. Vermeulen (2002) for instance addresses the 'transfer gap', which is the gap between what employers expect and what employees actually give in terms of contributions to the organisation. Considering the mentioned factors, the situated learning transfer model, and the research results in mind, the typology below emerged.

One of the primary aims of the proposed typology is to make informal learning visible and therefore arguably more transferable. This could potentially be the first step in ensuring that situated learning is transferred. It identifies the contextual factors that can potentially enhance (or indeed, inhibit) situated learning and its transfer. Through this typology it is hoped that the transfer of situated learning could be more effective. As noted previously, research in the area of learning has predominantly been dominated by formal learning to the neglect of informal learning (Holton et al, 1996; Baldwin and Ford, 1988; Russ-Eft 2002). Therefore it is felt that this typology could make a valid contribution to research, policy and practice through its focus on informal learning. It must be noted that transfer of learning climate is heavily embedded and, to a large extent, implicit in the typology through different elements that constitute the workplace environment directly and indirectly. The typology is essentially made up of three elements. Moving from left to right, the typology shows the organisational enhancers of situated transfer of learning, instances of situated learning and contextual elements. The three elements are not to be interpreted in a linear fashion. The rows do not follow in any sequential form. Each column is separate and the elements can be matched according to the situation at hand. For instance, sharing of information through Quality Circles could take place in formally designated meetings. The contextual factor that could augment the effect of this activity could emerge through peer and/or supervisor support.

Organisational Enhancers of Situated Transfer of Learning	Instances of Situated Learning	Contextual Elements
Learning Strategy	Formal and Informal Meetings	Supervisor Support
Organisational Goal Setting	Feedback from clients	Peer Support
Individual Goal Setting	Internal Feedback (supervisor & Peers)	Workload
Coaching/Mentoring	Project Based Learning – organisation, process and evaluation	Opportunity to Use
Promotion of Reflective Thinking	Observation of others	Autonomy
Sharing of information eg. Quality Circles	Problem Solving	Organisational attitude towards learning

Table 5.1 A Typology of Factors Impacting Upon Situated Learning Transfer.

Organisational Enhancers for Situated Transfer of Learning

In view of the learning curriculum mentioned in the research previously, organisational enhancers for situated transfer of learning could be considered to form a part of the syllabus that would lead to an increase in the application of new learning. Aspects of these

enhancers could overlap with other sections in the typology wherein the 'curriculum' and the contextual element take place. For instance, coaching and mentoring could be interpreted to overlap with supervisor support. However, it is to be noted that the overlap diminishes if the aspect of learning curriculum is taken into consideration. There are distinctive differences between coaching and mentoring and mere supervisor support, mainly stemming from the requirement of former methods to give 'teach' and constructive feedback. The enhancers in the typology represent the activities that could be promoted within the organisation to create the need for learning and structure. Based on the comments extracted from the interviews, factors that impinge on the transfer of situated learning emerged. An analysis of transcripts indicated that the transfer of situated learning at the workplace could be further enhanced through organisational activity. This activity includes acknowledgement of the existence of situated learning as mentioned above and the planning for transfer of such learning. Based on the research findings and on the situated learning transfer model, organisational enhancers for the situated transfer of learning are delineated below:

Learning Strategy: 'policies and strategies' as outlined in the proposed model did not become apparent through the research findings. It is therefore thought that this aspect could evolve into what can be called the 'learning strategy', referring to learning that employees are expected to go through during their life time with the organisation.

Organisational Goal Setting: this, together with 'individual goal setting' are additions that are suggested following a reconsideration of the situated learning transfer model. The 'business goals' as defined broadly in the model did not yield the expected outcome in the findings possibly due to the vagueness of the term. Creating an awareness of

organisational and individual goals could potentially instigate further visibility of informal learning and its transference.

Other organisational enhancers that focus more on the value added through individual participation include:

- Individual Goal Setting
- Coaching and Mentoring
- Promotion of Reflective Thinking
- Sharing of information e.g. Quality Circles

It is therefore ultimately suggested that creating opportunities for individuals to reflect on, and therefore to recognise instances of informal learning within the organisation, could make the transfer of learning easier to flow. Although a simple model, this could potentially provide the basis for situated workplace learning and transfer. Making the model operational and customised for organisations would then require the expertise of HRD practitioners. In the next section attention turns to instances where according to the findings of the study, situated learning and its transfer is likely to take place are described.

Instances of Situated Learning

The research supported the view that the workplace can be a highly dynamic and social site. According to the outcome of the study, this site provides fertile grounds for learning from observation or evaluations. Instances of situated learning highlight some areas where learning opportunities could reside in a situated environment. The findings of the research confirm that learning takes place through social interactions, for example. They also show that given the opportunity, respondents would have liked to implement the gathered knowledge to the workplace. However, elements such as workload and lack of opportunity to use new knowledge often present themselves as the main barrier for effective transfer to take place. Below is a list of the main and most commonly-cited instances where situated learning can take place that emerged from the research:

- Formal and Informal Meetings
- Feedback from Clients
- Internal and External Feedback
- Project Based Learning
- Observation of Others
- Problem Solving

Each one of these instances contains essentials of communication, feedback and organisational skills. Using these essentials each instance can provide the possibility for tacit learning of new material.

The final element of the typology concerns the contextual elements of situated transfer of learning.

Contextual Elements

Contextual elements are derived from findings of the research, but also build to some extent on the terminology used in previous work on learning transfer (e.g. Holton et al, 1996; Russ-Eft, 1992). In the typology, contextual elements refer to work situations embedded in the organisation that arise out of day-to-day activities at the workplace. A further description of what these contextual elements entail and how they are manifested in the organisation follows.

Supervisor Support

This element refers to instances in which the supervisor or manager presents scope for learning at the workplace. The findings show that managers' support was critical in motivating respondents to learn and implement what they learnt. By casting the spotlight on the workplace learning process, such support can encourage explicit reflection on what

has been learnt, therefore making such learning more amenable to transfer. This opportunity to consider and reflect on informal learning processes seems to be one of the key features of an environment that supports the transfer of such learning. Support is therefore considered as a key contextual element in the proposed typology.

Peer Support

Peer support emerged to be an important factor in the transfer of learning at the workplace. It is apparent that respondents were interested to know what others thought of their actions. Respondents also seemed to rely considerably on their peers as a learning resource, through observation, problem solving and sharing of ideas.

Workload

Another important factor that affects the transfer of workplace learning is the 'workload'. Pressure and stress created by the workload could hinder learning opportunities. The role of this factor in the typology is considerable even if the workload could be a subjective factor to assess.

Opportunity to Use

Work demands, like upgrades in new IT technologies, could be a facilitator of new learning at the workplace. Respondents felt strongly about the creation of opportunities emanating

from job rotation and through the transfer of observable skills. Creating situations to apply learnt skills could enhance the value of workplace learning and increase the chances for the transfer of learning. This contextual element could be seen as such or even as an enhancer of transfer when the right opportunities are presented. A slight overlap may therefore be possible.

Autonomy

As observed by Fuller and Unwin (2003b), high levels of autonomy could prove to be an instigator of workplace learning. The respondents clearly felt that, when working autonomously, they needed to learn how to prioritise, make decisions and get feedback. This appears to be one of the more crucial factors in creating a climate for the transfer of learning.

Organisational attitude towards learning

This contextual element did not emerge directly from the responses gathered in the research. However, on analysis of data gathered, it was apparent that the organisational attitude towards learning at the workplace could impinge on the transfer of any learning within that environment. Setting up the appropriate organisational attitude, like being positive and willing to share information, is considered to be a critical factor in instilling an atmosphere that promotes learning and its application at the workplace. This organisational attitude needs to be woven into organisational culture and become a part of

the framework that makes the firm. Responses collected indicate strongly that neither of the research firms appeared to have invested in workplace learning, apart from formal accreditations or job specific courses. It is hypothesised that not acknowledging the situated, often tacit learning opportunities presented at the workplace could potentially damage the organisational memory of the firm and create work intensification through work related stress created at times by demands placed on employees . Therefore, identifying and recognising possible learning opportunities and creating awareness could potentially enhance the transfer of situated learning at the workplace. As discussed above, an organisational environment that creates space and encouragement for employees to reflect on and make explicit 'invisible' instances of learning seems to be key to creating an effective environment for learning transfer.

The function of the contextual elements in the typology is to highlight the situational areas that could potentially be further exploited to enhance the learning culture and application of new learning.

Further Research

The research outcomes of the study appear to indicate a parallel similarity in concept to the organisational knowledge creation theory outlined by Nonaka and Takeuchi (1995). This parallel between transfer/application and creation of organisational knowledge gives the study a further innovative aspect and contribution to existing literature. Nonaka and Takeuchi (1995) are predominantly preoccupied with the process of knowledge creation

through the generation of a spiral that appears to have a snowball effect though its progression. The knowledge, starting in the individual, spirals to become explicit and also goes through the motions of socialisation and combination. Similarities can now be outlined in the 'use' of definitions for operational terms like 'organisational knowledge creation'. This term is defined as '… the capability of an organisation as a whole to create new knowledge, disseminate it throughout the organisation, and embody it in products, services and systems' (pg3). The focus of the study to investigate factors that impinge on the effectiveness of transfer/application of new situated learning appears to be very close to Nonaka and Takeuchi's concept. Could there be a link between knowledge management and the application of new learning at the workplace?

Two other parallels that can be drawn to Nonaka and Takeuchi (1995) refer to value creation and the provision of a new outlook on knowledge and learning in organisations. The current study has emphasised the role of learning against competitiveness in the market, something that Nonaka and Takeuchi also discuss in their model leading to competitive advantage. Moreover, as a main contribution to current literature, the study is trying to account for a potential gap in view of the use of informal learning at the workplace. Nonaka and Takeuchi also felt that when the theory was developed the literature was not comprehensive in the field of knowledge creation in organisations.

The research has been primarily theory-building in its approach, and its main outcome is the typology presented above. However, any conclusions and outcomes arising from the

study must be considered within the context of the limitations of the research and its aims; further research is therefore required to refine and test the model. The most significant element of the study is its focus on informal learning and the transfer process at the workplace. The findings have identified significant factors that impinge on the effectiveness of the transfer of situated learning. Using the suggested typology to enhance situated learning transfer, more in depth research could be carried out to further refine the model. Moreover, the typology could also be tested quantitatively. Hager (2003) suggests that most of our understanding of learning behaviours continues to be based on assumptions stemming out of formal learning settings. It is hoped that the study will instigate further research into pedagogical issues pertaining to the area of transfer of learning at the workplace. Further qualitative research needs to take place with a focus on the situativity of workplace learning, taking into consideration learning behaviours and social aspects surrounding tacit processes operating at individual and organisational levels.

Further research is needed both at organisational and individual levels. However, it would be interesting to find more research investigating the interplay between the organisation and the individual and how that plays on the transfer of learning at the workplace. A third element to this dimension could potentially include the external environment and how it affects the organisation through pressures on the supply chain and economic issues, amongst others. More specifically, research is needed in areas that regard the contextual elements of learning and how different agents affect learning environments. Quantitative research in these areas is also needed. Obtaining a broader view that can be generalised could potentially yield better solutions when similarities and differences are outweighed.

Further research is also needed in the area of policy making and business strategies in organisations. Following findings in the research, it is thought that there could be a connection between business strategies and the readiness for learning in the organisation. In the literature review, reference was made to Tennant et al (2002) as to how Japanese organisations deal with learning at the workplace. It would be interesting if these concepts could be studied from an informal learning perspective in order to assess how such activities as quality circles, could provide learning opportunities. The workplace is a dynamic environment that constantly provides new challenges and prospects for learning. The employee is required to be even more flexible considering the unpredictable demands placed on the workforce. This requires individuals to be able to adapt on site and re-learn as they go along. It would be interesting to see more research into the cost associated with these instances of learning as these opportunities can potentially be very expensive when mistakes are made. Adaptive learning (Appelbaum & Goransson, 1997) therefore appears to be a main feature of organisations. Further research into the pedagogical background, vis-à-vis the business strategies in firms, is therefore considered an urgent need in order to maximise effectiveness of situated learning and transfer of learning at the workplace.

Another issue requiring further investigation relates to the individuals' awareness of situated learning. Are individuals aware that they are learning all the time? Are they aware that they can influence the performance of the organisation if they use what they learn and share it with others? The typology indicates reflective thinking as a potential enhancer to the transfer of situated learning at the workplace. It would be interesting to see a mixed research of qualitative and quantitative approaches that can evaluate a pre and post

test scenario. Measuring possible differences could further inform workplace learning pedagogy.

Based on the findings of the study, we can perhaps conclude that workplaces are – perhaps to differing extents – environments where many opportunities for situated learning occur. However, such opportunities are not always recognised by people who work within organisations; similarly, the ways in which that situated learning can be applied are little understood and rarely explicitly used. What the study has done is cast a spotlight on these issues and, in a tentative way, suggested a model that could help academics and practitioners understand the processes involved in the transfer of informal learning, hopefully with a view to improving this process by rendering it more visible. It is hoped that this research has contributed to the field of informal workplace learning by adding value and detail to the research already published. In conclusion, situated learning at the workplace is a crucial but still often neglected phenomenon that holds important elements for organisational memory and overall performance of the firm. The unspoken issues stemming from identified factors that appeared to impinge on the transfer of situated learning have inspired the typology to enhance workplace learning transfer. Finally, it is concluded that specific learning instances need to be further enhanced through mechanisms that can help to make explicit, and to codify the tacit knowledge available, though the social context that is the workplace. Only when such informal learning is better understood, and rendered more visible through measures suggested above, can we begin to make it more transferable.

Appendix 1

Access Letter

Margaret Pace
Alba Court Flat 3
Triq Dun Kalcidon Schembri
Msida.

Date

(Company Address)

Dear (Managing Director's Name),

I am a Doctorate student at the University of Leicester researching the transfer of learning in organisations within the IT sector.

I am currently in the process of collecting data for my research. A part of the data includes the use of a demographic questionnaire and interviews with staff members in local IT companies to get respondents' views on learning at the place of work. I feel that your company could give a very good contribution to my project and with your consent I would like to set up a brief meeting with yourself to discuss the aims of the research. If you are interested in the study and have no objection to participation, I would like to contact you to make the necessary arrangements.

Should you require any further clarifications, please do not hesitate to contact me at the above address or on **mpace@maltanet.net**.

Thank you for taking my request in due consideration,

Sincerely Yours

Margaret Pace

Appendix 2

Sample Extract from the Web Based Questionnaire

Dear Respondent:

You are being invited to participate in a research study on people's experience of learning while they are at work. In particular, it is of interest how people can implement what is learnt during training courses and from observation of each other.

The data collection will require about 45 minutes of your time in total. This includes the filling in of a questionnaire and a brief interview. There are no anticipated risks to this research. All the data collected will be treated with strict confidence.

Your anonymity and identity will not be disclosed. The collected data will only be used for educational purposes related to my thesis. The results from this study will be presented in writing in a final document that will be read by my supervisor and the adjudicating board at the University of Leicester. At no time will your name or the name of the company be used or any identifying information revealed.

If you wish to receive a copy of the results from this study, you may contact me at **mpace@maltanet.net**.

Thank you for taking part in this study.

Sincerely Yours

Margaret Pace

1. Male
2. Female

Age

1. under 20
2. 20 - 25
3. 26 - 30
4. 31 - 35
5. 36 - 40
6. 41 - 50
7. 51+

What is your position within the organisation?

1. Clerical
2. Team Member

3. Team Leader
4. Managerial

What type of contract do you have?

1. Definite
2. Indefinite

How long have you been working for this organisation?

1. Under 1 year
2. 1 - 3 years
3. 4 - 6 years
4. 7 - 10 years

(If there are no qualifications type N/A in the space provided)

What qualifications do you hold? (Please list any degrees, diplomas, IT certifications and other certificates obtained)

On joining the company, where did you come from? University, MCAST, Other Educational Institution, Industry, Government Sector, or other.

Appendix 3

Sample Extract from the Analysis Code Book

Variable name	Question
Sex	Gender
Age	Age
Position	3. What is your position within the organisation?
Contract	4. What type of contract do you have?
Stay	5. How long have you been working for this organisation?
qual	6. (If there are no qualifications type N/A in the space provided) What qualifications do you hold? (Please list any degrees, diplomas, IT certifications and other certificates obtained)
educ	7. (If there are no qualifications type N/A in the space provided) What qualifications do you hold? (Please list any degrees, diplomas, IT certifications and other certificates obtained)

Appendix 4

Sample extract of data provided by the web base questionnaire.

Sex	Age	position	postiton1	pos2	pos3	pos4	contract	stay	qual	Educ
		Clerical	Team Member	Team Leader	Technical	Managerial				
1	2		2	3			1	2	B.SC	1
1	2			3			1	2	B.SC	1
1	2			3			1	2	B.SC	1
1	2		2				1	2	HND	2
2	2		2				1	1	ND	2
2	3		2				1	1	B.Sc	1
1	2		2				1	2	B.Sc	3
2	3		2				1	1	DipMktg	3
1	2		2				1	2	Diploma	2
1	2		2				1	2	HND	2
1	4					5	2	2	B.Sc	1
1	4		2				1	2	B.Sc	1

Appendix 5

Sample Interview Schedule for Semi-Structured Interviews

Greeting

1. Thank for participation

2. Outline the study and the purpose of the interview

3. Set the ground rules – mobile phones, anonymity and confidentiality

Presence in the firm.

1. How long have you been in the company?

2. What is your position?

Perception of learning.

1. How do you look at learning at the place of work?

2. Do you think that any learning takes place in your place of work?

3. In which ways do you prefer to learn?

Organisational Level Effect

1. Does the organization show support when implementing techniques newly learnt?

2. When discussing these ideas about different methods of work, do you feel that your supervisor supports you?

3. Do you feel that your co-workers support your new ideas?

4. When there is new knowledge how flexible is the company to adopt changes in how things are done?

5. If the company had to change some policies, would it be easier to use new knowledge on the job if there were a formal planning mechanism to facilitate it?

Individual Level Effect

1. Do you have the opportunity to share information from a training course with your colleagues?

2. Do you have the opportunity to share any new ideas with your colleagues?

3. Do you feel that you brought new knowledge and ideas into the organisation on joining? (eg. teamwork, or other job specific skills)

4. Have you learned new processes (ways of doing things or dealing with people) since joining the company?
5. Do you think that an individuals' personality plays a role in how active they are in trying out new ideas?
6. Do you feel that people's behavior can change as a result of the implementation of new learning?

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