University of Huddersfield Repository

Higgins, David and Mirza, Mohammed

Where do we go...! A meta-theoretical analysis of learning and the small firm

Original Citation

Higgins, David and Mirza, Mohammed (2011) Where do we go...! A meta-theoretical analysis of learning and the small firm. International Journal of Innovation and Learning, 10 (4). pp. 327-349. ISSN 1471-8197

This version is available at http://eprints.hud.ac.uk/id/eprint/7809/

"Finding the gap: A meta-theoretical analysis of learning in the small firm"

David Higgins* and Mohammed Mirza
Business School
University of Huddersfield
Queensgate
Huddersfield, HD1 3DH, United Kingdom
Email: d.higgins@hud.ac.uk
Email: m.t.mirza@hud.ac.uk
*Corresponding author

Abstract
The subject area of organisational learning has seen important growth in both business and academic worlds however the literature base faces various problems, such as theoretical confusion and diversity of perspectives on the subject. Such issues can also be attributed to the concept itself and how it is understood from the various sociological, philosophical and methodological viewpoints, (Weick, 1991; Antonacopoulou, 2006). This makes finding a point of departure in the literature base highly problematic. The paper seeks to provide an amalgamation of literature in order to develop a coherent and more practical understanding of the related concepts. The review of literature is not exhaustive, but rather sets out to consider ideas of relevance in order inform the conduct of future empirical research in the diverse and complex area of the small firm.

Key Words: knowledge; learning; organizational knowledge perspectives; innovation; small firm

Biographical notes: David Higgins is a lecturer at the University of Huddersfield Business School. His research interest is directed towards a social constructionist view of organisational learning, in particular placing focus on the social conceptualizations of organisational learning and the role of artefacts in relation to the development of learning practices in small firms.

Mohammed Mirza is a principle lecturer at the University of Huddersfield Business School. Mohammed is currently Principal Lecturer in the Department of Strategy and Marketing responsible for: MSc Director (Jordan) and his teaching areas are: Services Marketing Areas, his research areas and interests are Corporate Communications and Fashion Marketing.

Introduction

The review of literature presented in this paper, aims to contribute to the current theoretical work of researchers in the field of organisational learning in the small firm. A systematic literature review process (SLR) was adopted in order to evaluate the main body of research within the field and suggest towards possible future research gaps by contributing to an understanding of how the concepts of learning and practice apply to the small firm domain. Systemic literature reviews (SLR) are more rigours than traditional literature reviews, which in the area of the social science tend to be merely based on narrative and subjective accounts based upon judgement and prior knowledge. In the context of this paper it is hard to simply apply rational SLR processes outside of the scientific domains, where concepts are more diverse and may be operationalised less effectively, especially where differing theories and perspectives underlie the use of particular concepts. Coupled with this, concepts within the area of organisational learning tend to be softer conveying a range of meanings and interpretations, or the use of similar and at times different terms to mean the same thing. The aim of such a method is to provide an overview of the main themes and debates in the literature with a specific emphasis on establishing current research gaps and the implications of these gaps for the future development of the field. The review is based not on a comprehensive choice of literature, rather the review places particular emphasis on key articles, and empirical work in order to identity key literature based material. The emphasis of this review is not on quantitative analysis of articles but rather to provide some form of conceptual clarity towards the current debates and typologies useful for the small firm. The empirical evidence established from the SLR seeks to outline concepts, research gaps and areas of potential interest for future research, both from an academic and practitioner's perspective. In this way the SLR builds further on establishing a conceptual synthesis of the literature in order to make source material and their impact more transparent and meaningful.

The primary rationale of taking a SLR is due to the fact that this field of academic inquiry lacks any real paradigmatic agreement. That is to say there are numerous methods in which the concepts of learning and knowledge are understood, defined and addressed in the literature. This is also reflected in the methods used to research these topics due to the varied interpretation of what constitutes learning and knowledge in the small firm. In this regard it would have been inappropriate to quantify theoretical or empirical material in such a context. The review conducted has sought to highlight critical issues in the related subjects of learning and knowledge, by indicating the diversity of approaches, both theoretically and methodologically.

The subject of organisational learning is facing numerous issues such as theoretical disorder and confusion. The theoretical rationale of knowledge and learning in the firm has displayed certain amounts of disorder; this can be accounted for through the numerous approaches and their classifications (knowledge-based view, knowledge management, organizational knowledge, theory of organizational knowledge creation, which are associated with a plethora of contradictory views and organisational knowledge typologies (Brown and Duguid, 2001). The field is littered by texts and theoretical work which have similar concepts, but the subject area has become conceptually fragmented, multi-faceted and complex, (Easterly-Smith et al, 1999). The continuous theme in the literature to find a rational understanding in order to reduce uncertainty and evidence clear, casual, linear relationships between social dynamics can in actual fact be a distraction and become more problematic than insightful. This is further compounded by the fact that there is confusion in terms of the role of individuals and the organisational collective in the process of learning. This is exemplified by Fiol and Lyles (1985) who suggest this confusion could have emerged through the context in which organisational learning is placed, such as change management , the role of structure , systems (Shrivastava, 1983), insights or knowledge (Crossan *et al.*, 1999), and actions (Argyris and Schon, 1978), which have been studied as mechanisms for learning, unlearning and adaptation, (Fiol and Lyles, 1985). Given how expansive and diverse the literature of organisational learning is, it is of critical importance to be vigilant about how one interprets this field, in particular when trying to apply existing theoretical insights to the work of organisational groups such as managers.

While the main theoretical discussions are principally in the context of individual learning processes, there is at best only a functional equivalence between concepts of collective and individual learning.

Whilst learning at the individual level is both complex and difficult to measure, at a collective level what is required is the capacity for developing new learning practices as a process of social emergence. The paper is organised as follows. First, an overview of some of the literatures related to organisational learning is outlined in order to map the potential academic terrain relative to the paper, including the main approaches to the subject. Some of the problems within these areas of literature will be identified and an alternative approach will be introduced. The paper concludes by locating the work within the overall literature and identifying the issues within it that future research agendas need to address.

Conceptualisations of learning
Recognising the breath and diversity of the literature domain that is organisational learning and the difficulty in attempting to review such literature should not be underestimated. The literature recognises the major areas of interest which are organisational learning, the learning organisation, knowledge management, and organisational knowledge (Easterby-Smith, 1997; Easterby-Smith and Araujo, 1999; Easterby-Smith *et al.*, 2000; Berthoin Antal *et al.*, 2001; Easterby-Smith and Lyles, 2003). Each of which have their own sub-sections.

Figure 1

Each of the above disciplines draws on a distinct theoretical concern with regard to learning, and in turn provides a set of distinctive contributions and ideas. Argyris and Schön, (1978) define organisational learning as the process by which firm actors detect errors and correct them, with adaptive learning linked to incremental change or generative learning associated with radical change. This understanding is very much associated with the assumption that learning is derived from interpreting the consequences of behaviour and developing more effective actions. Tsoukas and Vladimirai (2001) describe firms as three things at once: concrete settings within which action takes place; sets of abstract rules in the form of propositional statements; and historical communities. They define organisational knowledge as "the capability members of an organization have developed to draw distinctions in the process of carrying out their work, in particular concrete contexts, by enacting sets of generalisations whose applications depend on historically evolved collective understandings" (p976). This definition aids in the explanation of a number of skills used in the process of work, work contextualisation, firm's history and collective understanding. The context of learning is often inherently unstable, uncertain, contingent, complex and diverse as learning is situational and contextualised making it unique, fluid and characterised by unexpected phenomena and requires a unique response. Edwards (1997) suggests there are tensions which exist between participating, collaborative learning and the disciplines imposed by linking learning with policy and social engagement. Definitions of learning in the firm are affected by organisational context, yet this is not sufficiently recognised; there is a tendency in the current literature to assume the context of an organization. There are few papers which define or describe either the specific context of the firm or type of firm in question. Definitions emphasise context-specific organisational knowledge and learning, yet this is rarely reflected in application to sectors. Few studies derive from both concepts, but most tend to use both terms, so there is a need to explain how the concepts of organization knowledge and learning interact within a study (Vera and Crossan, 2003).

The concept of learning in the firm has developed over time in which numerous areas of interest have been established, which have dominated the debate on organisational learning, such interest groups attend to either the behavioural aspects (Cyert and March, 1963; Levitt and March, 1988), the *cognitive* issues (Duncan and Weiss, 1979; March and Olsen, 1975), the *socio-cultural* dimensions (Cook and Yanow, 1996; Lave and Wenger, 1991) and more recently the *practice-based* view (Nicolini et al., 2003). As a result there are various ways which one can situate and view current organisational learning theories; there is a tension in the tendency to group different perspectives, creating juxtapositions that place one theoretical perspective against the other. The social perspective attempts to move beyond looking towards cognitive or conceptual structure of organisational learning, but rather sets outs to embrace and explore the types of social actions / contexts which allow for the emergence of organisational learning, by focusing on the collective and social networks within the

firm. Elkjaer (2003) argues that learning is perceived as a dynamic activity which cannot be regulated or controlled. The only possible element which could be controlled is context, thus facilitating organisational learning to a greater or lesser extent where learning is conceptualised as a construction of shared beliefs and meanings, in which the social context plays an essential role. Through the establishment of learning as situated within a social network, this point suggests that organisational learning emerges out of the possible connections and inter-dependencies explored across multiple levels of analysis. Therefore understanding which are the conditions that make connections across levels of analysis possible and how they form is a key priority.

Knowledge and the SME firm
One of the key influencing elements in the small firm on the learning process is that of the owner/manager as a principle actor in the small firm, having both the power and legitimacy to influence practices (Stanworth and Curran, 1976; Vera and Crossan, 2004). The knowledge which owner/managers have established through practice and experience will, to some degree, shape the trajectory of the firm, as it is this resource which they use to enable them to make sense of their environment and respond to that working environment (Weick, 1995; Kakati, 2003; Rae, 2004). The use of such knowing is well documented within the literature, but how this resource is enabled and constrained is not well discussed. This experience can also help create path dependencies in the firm, which in themselves are hard to overcome in the absence of a willingness to change, and remove rigid structures established through embedded values, beliefs and activities, (Lave and Wenger, 1991; DiMaggio and Powell, 1997; Heracleous and Marshak, 2004). Even though the owner/manager may have the power and capacity to harness this knowledge and experience, they cannot act in isolation. They need the resources of others, in terms of the institutional and social contexts in which they are embedded, which help influence the possibilities of their desired legitimate actions, thus directly shaping the forms of activity they may be able to embed into the firm, (David, 1985; Baden-Fuller and Stopford, 1994; Leonard-Barton, 1995). In this sense the owner/mangers knowledge and experience can be regarded as a fundamental footing for the firm, but how this resource evidences itself when the owner/manager is attempting to deal with uncertainty and how they deploy and use this knowledge resource in order to organise the firm is not clear. Caniels and Romijn (2003), Park *et al.,* (2002), and Cooke and Wills (2003) argue that the transferability of knowledge is better achieved when there is willingness in the firm in terms of its pro-activeness, being open to change and willing to engage across firm boundaries.

In this regard, understanding the structural properties of both endogenous and exogenous sources of human knowledge is important. This can be exemplified through the social and technical networks associated with firms, which are particularly important for businesses in terms of access to business networks, which can provide professional managerial advice. The establishment of close relationships is of critical importance to create a relationship between the actors in the network (North and Smallbone, 1996; Macpherson *et al.,* 2005). Thus the opportunities which owner/managers can derive from networks enable them to have the necessary social and attitudinal skills to be able to both develop and sustain strong relationships, (Blundel and Smith, 2001). The empirical evidence suggests that SME owners/managers would benefit in terms of learning and developing new practices by adopting different perspectives. This would allow the voice of others to contribute to decision-making, adding to the stock of knowledge (Karanka *et al.,*2003). Choueke and Armstrong (1998) suggest that action learning sets could be used to encourage owner/managers to reflect actively on experience. Developing such a social relational element is important; rather than depending too heavily on solitary reflection. Such a bounded state of solitary decision-making is not unusual for SME owner/managers. Pett *et al.,* (1998) found that, when asked about their experiences, owner/managers were overly optimistic in comparison with their employees, when assessing their performance. There was a perceived gap between what a manager believed about their respective firm's performance and the reality experienced by other firm employees. This illustrates the limitation of reflection when divorced from other actors such as knowledge and context, as well as demonstrating the weaknesses of knowledge when conceptualised separately from action or activity. This limitation was recognised by Floren (1996), whose study of entrepreneurial learning found the

two most restricting influences to be the lack of peers with whom to converse and the presumed omniscience of the solitary owner/manager.

In order to develop and build strong ties the owner/manager depends on communication skills to encourage and persuade others to engage in their shared vision, or to adopt a particular activity. It is these activities which sustain and create complex social relations (Bogenrieder, 2002); which shape actions and which sustain the transfer of knowledge and knowing which are essential components of learning. Coopey and Burgoyne (2000) argue that the social structures of the organisation must be open and supportive to constructive debate, which they term as "learning spaces", if they are to encourage and enable learning. Where significant power is held by those who mediate control of the information exchange, dominant discourses will limit the learning process. According to Contu and Willmott (2003) social archetypes of the firm can create a degree of complexity and diversity through which learning can be stimulated, but relationships of power which are embedded in all social interactions will always mediate or limit what is achievable. The social structure of the firm includes relational and dialogical activates, it also includes systems, processes and routines through and around which interactions occur. The existing firm routines, processes and systems reflect the existing knowledge in the firm, and learning is reflected in new structures and processes which are embedded in the firm's structure, (Kazanjian, 1988).

Since particular objectives and preferences can be held in tension between interacting actors, these same relations are also subject to influences such as politics, power, routines and social relations, as these tensions are explored and courses of actions prioritised, negotiated and resolved. These relationships and routines are, in essence, the social constructs through which mediating means establish new practices. What this alludes to is that the social structure of the small firm can, be manipulated in order to enhance and stimulate support for collective firm learning. The role of boundary objects in this process can be introduced to refocus and rearrange the temporal relationships through which the firm's social structure is formulated and defined. Within this, recognition needs to be drawn to the historical relationships and routines of existing firm practices which reflect the social structure of the firm. These historical symbols still have a critical influence on the learning process. Such an activity takes place within an institutional context which will influence the learning process and what is achievable. In this context, difficulties and tensions become the driving force for changes in practice which often highlight the contested nature of that practice from which solutions are identified and subsequently enacted collectively (Blackler and McDonald, 2000; Blackler and Regan, 2006). The idea that practice is contested suggests that learning is unlikely to be directly transferrable and unchanged, calling into question the notion of "best practice" and of the implementation of the ways of working devised in other situations. In some empirical studies it has been suggested that learning is not transferred unchanged in both form and content but rather that it is translated through the performance of local practice in order to suit local needs and culture (Owen, 2001; Bechky, 2003; Gherardi and Nicolini, 2003a, 2003b; Yanow, 2004). These studies highlight the richness of knowing in a local context, which entails aspects which are difficult to articulate (Cook and Yanow, 1993).

Keh *et al*., (2002) found that the idea of control influencing the owner/managers evaluation of opportunity is framed by socially embedded, subjective orientations, developed through experience. Their study demonstrated how SMEs may benefit from owner/managers recognising the important sources of knowledge to be found outside their own experience and hence the value of developing the social skills necessary for scanning for such knowledge. The recognition that knowledge is less a product of individual traits and abstract rationalising about outcomes, and more the outcome of socially enacted understanding about what works when and where is described by Sarasrathy's (2003) theoretical model as effective managerial decision-making. From a social perspective view, knowledge in the SME firm is something not so much gathered and stored, but rather experienced in a willingness to recognise and pursue new practices. Hoffman *et al*., (1998) argues that it would be better to focus on what encourages learning; hence the appeal for research to look for the contexts in which knowledge is enacted and practiced. The owner/manager is not a discrete bundle of assets, but rather more is a subjective entity whose identity is reliant upon knowledge of the social relations by which they are articulated, argued for, and challenged. Rae and Corswell (2001) and Rae (2002) have

looked at socially configured relationships between knowledge and identity through an analysis of discourse, demonstrating how the creation of a business venture and developing practical theory of actions are themselves articulations of each owner/managers life story.

Learning, Routines and Communities of Practice
Developing learning requires routines which support interaction and inter-subjective sense making, (Walsh and Ungson, 1991) through which forms of collaboration can be established, where a collective group of actors meet, on the basis that they are willing to engage in the exchange of ideas, and engage in the construction of new practices, (Blackler et al,. 2000; Carlile, 2004). The more diversity the actors have in terms of experience and knowledge, the greater the potential for the actor to engage in the process of reflection in practice. This enables the questioning of existing held assumptions, and the possibility of exploring new understandings, (Gold *et al.,* 2002). In this regard the more powerful actors in the collective group can significantly influence the choices of the group in terms of the shared assumptions and frames of reference, (Shiristava, 1983; Fiol, 1994). The challenge for the small firm owner/manager who wants to develop their ability to learn, is to create routines which allow disruption to occur, by questioning existing firm routines and engaging in the process of social interaction to explore spaces of possibilities for the creation of new firm practices. The introduction of new routines, may provide a mediating artefact or object through which collective learning could be accomplished.

Spender and Grinyer (1996) used empirical evidence to demonstrate how practicing communities influence the way in which owner/managers perceive themselves. They focused on the use of industry recipes which owner/manager's call upon. They identified how managerial pattern judgements reflected wider belief structures. Wenger (2000) argues that the firm cannot take for granted the strength of these influences, as it is through these communities that firm actors learn. Learning in these communities is achieved through the actor being immersed in the local language and practices of these communities, (their legitimate practices and activities). Thus gaining the requisite skills by which the actor can become part of the lived experiences of the community and as a result pass and share experiences with fellow members in the community. This is achieved by telling stories; loose narratives through which typical and atypical stories and experiences are discussed. What emerges from this process is a re-enforcement of habits, their alternation/termination, and transformation should problem solving activates induce new habits of practice.

One of the most explicit ways of acknowledging the influence of social learning theory is by identifying the social, historical and cultural values of practicing communities, (Brown and Duguid, 1991; Wenger, 2000). Practicing communities transcend boundaries through the stories participants in the community tell one another about their experiences of functioning in their daily activities. While this conceptualisation is still centred on the structures of routines, the community of practice concept describes how routines are embedded in spatial and temporary situated contexts which influence how these routines work in the firm. Indeed, organisational routines and standard operating procedures have been shown to be the result of continuous practising, collectively constructed and changing over time, suggesting these are retrospective and distal accounts of enacted working practices (Gherardi, 1999; Orlikowski, 2002). The methods in which collective knowing emerges suggests that this does not always occur through pre-determined events, such as formalised communication channels of reporting, but rather as the result of disruptions in the usual day-to-day flow of the firm working day (Engestrom, 1987, 1999b; Gherardi, 2006; Von Krogh, 2002). Berends *et al.,* (2003) focused on normative rules through which activities are legitimated; through empirical research these writers illustrated how a blend of both normative and interpretive activity allowed actors a freedom of choice or space for possible considerations. How these actors act in these communities is through pro-social and reciprocal motivations oriented to collective rather than individual conceived interests. This is similar to Bechky's (2003) study which illustrated how communities centred around varied work practices, can share knowledge, in which they can develop a common language, an overlap in terms of their activities, and finally a recognised agreed understanding of their varied opinions of the task at hand.

Carlile's (2002) study on knowledge boundaries showed how managers need to be aware of not only knowledge transfer across differing organisational teams and boundaries, but its transformation in order to deal effectively with the varied experiences and interpretations at each boundary location. One method of dealing with this transformation of knowledge is to identify these boundary objects. These can be information systems, shared values, meanings, symbols, routines or processes. Carlile (2000) argued that whatever form these boundary objects take, the boundary object has to firstly have a shared sense of significance, or empathy for the different functional actors, in order that they can translate experiences, to one another. Suggesting that knowledge is not a function of routines or practices in a community but rather it is the tacit and personalised interactions which are random, localised, and historical in context, expressed through action-oriented relationships, within existing social relations, (Becker, 2001). What a firm actor knows and the way they come to know or engage in knowing is not simply consensual but also emotive, (Beech *et al.,* 2002; Antonacopoulou and Gabriel, 2001). Vince and Saleem (2004) argue that an overlooked factor, in the implementation of knowledge routines in the small firm, is the emotion (belief) which influences and guides experiences which can provide the motives for response, where the responsibility rests with the individual actor to act. The very structure through which the firm actor operates in their daily practice is often accompanied by feelings of anxiety, caution and blame which restrict the ability of actors to reflect critically and openly on the practice they are involved with. The authors found that in the setting of a UK public sector group of managers, the desire to develop a learning organisation culture through knowledge work was ubiquitous. The actuality of that context was a risk adverse culture, influenced by managers in powerful positions, for whom the fear of making a mistake or mistakes imposed any form of benefit towards the development of new ideas or initiatives, (Vince and Saleem, 2004). Zietsma *et al.,* (2002) termed this form of anxiety, in some cases reluctance, and adversity as a "legitimacy trap" into which small firms can fall very easily if firm actors refuse to accept the cogency of important challenges to their existing learning and level of experiential knowledge, taking comfort and certainty in the traditional knowledge embedded in the firm, already institutionalised through the firm routines.

This illustrates that a community can be created, which is not necessarily as embedded or historically rooted in tacit based experience and emergent traditions. Rather these communities may be, in part, a form of ideological creation as they are grounded expressions of deeply held relational attachments. This very suggestion for background influence over social practice provides Knight *et al.*, (1993) with the argument that such communities are as much a force of restricting elements sought to control, as they are for triggering expansion (questioning) or rule breaking. Rather than provoking the emergence of new practices, the community through the institutionalised structures, sought to, and was able to, restrict their development, through the use of influential power and power relations. This was also found by Kamoche and Mueller's (1998), Salaman and Storey (2002), Contu and Willmott (2003), and Chan and Garrick (2003), who all studied how the coherence, reception and dissemination of learning practices within the communities was ruled through restricting the flow of knowledge through the use of power structures. The absence of power and politics from this area of theorising provides some critical gaps for SME firms which, by their informal nature and structure, are inherently both politically and power based by nature.

Authors researching learning and knowledge in the context of community of practice demonstrate that while any firm actor may processes a repertoire of experiential knowledge, knowledge is developed in the construct of concrete experiences, situated in localised settings, thus making it hard to deconstruct how learning is experienced and contested, (Iles and Yolles, 2002; Brown and Duguid, 1991). Unless one focuses attention to the manner in which knowledge is mediated in differing practicing communities coupled to the differences and dependencies of the practice itself, what is known will never be fully exploited or explored through spaces of possibilities, (Wenger and Snyder, 2000). The action of rule breaking and the questioning of existing held assumptions allows the owner/manager to generate the possibility of new experience which can modify the existing knowledge structure in the firm and bring new thinking into the community. Thus the process of enactment represents the commitment of the owner/manager in the small firm to learn through iterative, critical reflective and experiential knowledge generation, (Weick, 1988).

Research Gaps: - Emerging Themes in Learning

What the studies have sought to identify is the complexity of knowledge and learning as an activity in the small firm. This is clearly evident in all of the empirical material reported here and is further reflected in the potential diversity of human and social capital. What research fails to tell us is how and when each of these dimensions of knowledge and learning becomes of increased significance. Studies have further illustrated that owner/mangers are both reactive and proactive, whilst they both learn from experience, it is the latter which is more likely in terms of creating and developing new skills which enable learning and therefore provide new opportunities for the small firm. What current research does not reflect is the changing nature of knowledge research in the wider organisational community, which has shifted action to the situated nature of knowledgeable activity (Brown and Duguid, 1991; Lave and Wenger, 1991; Blackler, 1993) or knowing-in-practice (Orlikowski, 2002). Research has recognised that whilst the owner/manager's knowledge activities and identities are important for the SME, so are the systems and routines of the wider organizational activity, including the attraction and sustainment of human experience (Gray and Gonsalves, 2002). Studies have typically suggested that the owner/managers knowledge is best embodied in the firm routines (Nelson and Winter, 1982) which remain informal and flexible. These organizational systems, processes and routines can be identified as the structures which support interactions and exchanges both within and outside the firm in that they are in effect the mediating artefacts through which the ' absorptive capacity' if the SME enables the development and disruption of knowledge in the community of the firm, (Yli-Renko *et al.*, 2002; Ravasi and Turati, 2005; Kao *et al.,* 2003). What these studies suggest is that what is known by the owner/manager is very much a function of experience and pragmatic inquiry as opposed to instruction. More studies are required, in the context of the SME, that conceptualise knowledge as knowing, which focus on knowledge as a development of practice as opposed to knowledge as a resource or asset, investigating this within a form of interpretive framework of study. Such a research focus needs to explore the manner in which owner/managers make sense of their practice and situational realities from within the context of their actions and the material conditions which make up their social worlds. Studying the SME firm from such a perspective could provide a useful method of understanding how owner/managers develop, apply and negotiate their practice from within the firm and its practicing community.

In only a limited number of studies is there a sense of the ways in which knowledge is configured through wider influences of values, uniqueness and scope of what is known, also how these influences can vary depending upon the prevailing socio-historical contexts in which knowledge is being used, and is potentially to be used within the majority of the studies reviewed. In this sense knowledge is as much a relational construction, suggesting that its analysis requires the use of additional concepts to those currently being used in the subject area. Those epistemological approaches which are sensitive to these social relational qualities would include activity theory, and/or practice based theory. Activity theory conceptualises the search and recognition of opportunity as a sense making process of inquiry as opposed to the acquisition and exploitation of pre-existing knowledge. Here knowledge is understood as the product of competent inquiry, where the nature of the inquiry involves numerous attempts at recovering patterns of meaningful activity within a community defined by a set of collective shared objectives (Engestrom and Miettinen, 1999). Practice based theory (Schatzki, 2005) also encourages a view of knowledge as developing from patterns of problem-solving activity, while also acknowledging the conceptual structure of the organisation. As with activity theory, practice based theory seeks to understand the link between what is known which requires the analysis of the actions taken by the small firm owner/manager - the established rules and routines, the organisational structures and dimensions of knowledge, the meaningful intentions which framework the firm's practices and the material arrangements available in the firm, (Schatzki, 2005).

The theoretical concept that knowledge can be viewed as an activity, a collective and distributed practice of doing, leads to its consideration as an activity which is situated in time and space, and therefore as taking place in work practices of the small firm. Such practices, as a result, constitute the locus of learning, and working, which in turn could be conceptualised as practical activities, a collective bricolage enacted by small firm owner/managers who participate in the practice, mobilising

resources, using instruments, and employing a goal directed rationality. As noted there is a growing need to understand how activities are carried out in the small firm workplace and the relation among working, knowing and organising. This lack of understanding in the close scrutiny of human activity and interaction is not restricted to the small firms work environment, but is part of a wider cultural trend brought into focus by one or other of a bundle of interrelated terms: learning knowledge, practice, action, praxis, interaction, experience, activity and performance. In such a cultural environment, the use of an epistemological approach which is sensitive suggests towards the rediscovery of activity theory Engeström (1987), as well as the specific contribution of workplace studies (Heath and Button, 2002), which extend their theoretical roots into symbolic intereactionism and ethnomethodology. In this sense knowledge in the small firm is not simply an activity situated in practice, but it is also an activity which is distributed between humans and non-humans. Objects, tools and artefacts embody knowledge by anchoring and shaping practices in their materiality. They interrogate humans and are extensions of the firm's memory. They therefore take the form of agency and enable organizing to be viewed as taking place within a system of fragmented knowledge (Bruni *et al.*, 2007).

Practice based studies directly respond to the need to analyse the news forms of work which increasingly develop as hybridizations of interdisciplinary fields (Blackler and Regan, 2009). Work in the small firm is more fluid, transitory and uncertain, and contemporary organising takes place in "a net of fragmented, multiple contexts" and "through multitudes of kaleidoscopic movements" (Czarniawska, 2004, p. 786). These matters are addressed through studies undertaken by Orlikoswki (2000, 2002, and 2007) which have been heavily influenced by the concept of practice introduced by Giddens (1984). These studies are benchmarks for practice based studies, in which they illustrate the contribution that the latter can make to the design of firm practice, (Schultze and Boland, 2000). The appropriation of the concept of practice has continued in the intent to provide a theoretical lens through which to view knowledge in non-mentalist and anti-cognitive terms. Hence knowledge is not an object captured by means of mental schemes, rather it is a practical and collective activity, which is acquired not only through thought, but also through the body and aesthetic knowledge (Strati, 2007). According to Denis *et al.*, (2007) practices do not stop at the boundaries of the small firm, rather they become a rich arena for empirical analysis of knowing-in-practice in pluralistic firms, that is those firms with multiple objectives, diffused power and knowledge-based work.

Working practices are therefore the loci in which tacit knowledge is constructed, stored, and communicated to firm agents. But it is important to pay attention to the nature of this dynamic of knowing-in-practice in order to not lapse into a visions of a tacit knowledge waiting only to be made explicit. Reference has been previously made to this in terms of concerns surrounding sensory knowledge incorporated in the skills of the owner/manager, but this also concerns distributed agency, that is the social nature of expertise, and the concept of "communities of practice" (Lave and Wenger, 1991; Brown and Duguid, 1991; Orr, 1996). Practice based studies work against the dualisms of mind/body, knowing/doing, nature/culture and in this vein refer to a phenomenological structure where practices are the place of the "Dasein" (Heidegger, 1962; Ciborra, 2006): in other words the place in which thought and action emerge. The tacit knowledge embedded in practice, and which is therefore learned through participation in the activity, is a knowledge that comprises numerous elements of habits, habitus and habitualisation. In this consideration this aspect of knowing-in-practice enables the illustration that practice is a concept which lays in-between, habit and action (Gherardi, 2008). One can then set about asking the question how relations between human and non-humans, among all the elements which constitute the resources for the successful performance of a social practice, are combined and shaped into a practice, which is derived from knowledgeable collective action situated in time and space.

In addition to suggesting to new possible conceptual methods of viewing knowledge and learning in the small firm, the review also suggests towards the critical need for using alternative methodologies which do not confine mediating influences on learning, for example the variety of social human activity and interaction. There is clear acknowledgement that experience and active application and practice of that experience is an important characteristic of learning in the small firm. How that

experience is developed and mediated by context and social interactions is only addressed in a small number of studies. These studies (Watts et al., 1998; Perren and Grant, 2000; Crick *et al.,* 2001; Blundel, 2002; Baker *et al.,* 2003; Rae, 2004) address an alternative view where knowledge and learning occur as an idiosyncratic, emergent and active process which can be investigated through the analysis of the social structure and narrative of the research context in order to enhance the value of existing research concepts. Such research initiatives would require the use of methodological approaches which would offer the researcher richly textured accounts of organisational patterns of activity and values using participatory methods of observation and active involvement in the field. Such an approach requires that researchers manage the tensions of making sense of such rich open ended data (Watson, 1995). Studies conducted in this manner could offer an analytical method for connecting research concepts to developing patterns of dynamic behaviour in a way that differs from the majority of existing studies in the field currently by exploiting the use of narrative and qualitative based methods of sense-making with the aim of drawing focus to actions, context and history, thus providing more holistic rather than linear explanations of learning (Pettigrew, 1997; Langley, 1999).

Conclusion

There are a number of issues which emerge from the empirical review contained in this paper. The owner/managers technical and functional knowledge needs to be continuously renewed and developed. In this sense, knowledge amounts less to sustained expertise, than the ability to constantly develop relevant skills and practices. Literature suggests that structures, systems and firm routines can act to disseminate and embed the owner/managers knowledge. Knowledge that the owner/manager gains from experience can be shared with the collective actors in the firm. As a result firm practices, routines and processes are a representation of the current state of knowledgeable activity within the firm. It is evident that the owner/manager's experience is a strong influence on how the SME firm is structured, and exemplified through their experience. Interacting and benefiting from this experience requires social and attitudinal skills which provide the means through which these social relationships are mediated. The value of these relationships in which the owner/manager can influence and persuade others will impact on what is achievable in terms of the transfer of knowledge. In addition the nature of these relationships, systems, processes, and routines of exploitation and exploration which are institutionalised in the firm, define the social structure through which learning is mediated. These social relationships and routines are the social elements of mediating means, and they are an expression of the state of knowing present in the firm at that point. Accepted historical relationships and routines of practice which represent the firm social structure must be questioned if new practice and learning are to be realised. Finally this activity takes place in a firm context which will influence what is possible. Conceptualising the learning process in the SME firm requires that attention is given to the context of practice in which the firm is embedded.

The social relationships which exist in the firm are a significant factor in knowledge flows (Bartlett and Gheshal, 1989). They provide opportunities to build shared frameworks of understanding (Becker, 2001). Polanyi (1966) suggests that tacit knowledge is extremely difficult to articulate and its transfer is reliant on a deep understanding of its context and practice. Knowledge creation occurs through an interaction of individual and collective experiences in the social and physical world, (Gherardi, 2000; Inkpen, 2000). Expansive learning occurs from the questioning of existing firm practices and convincing other actors of the validity of proposed solutions to issues in the firm (Engestrom, 2000a). As a result routines and recipes are not only a potential source of firm stability but they are also a potential source of adaptability (Feldman and Rafaili, 2002). A consequence of this is that organisational knowledge research has tended to predominantly focus on issues of structure, or on measuring the knowledge capacity of the firm, (Spender and Grant, 1996). Schulz (2001) attempted to measure knowledge flows within and across organisational boundaries, but he acknowledged that his research could not identify why or how certain knowledge was considered relevant and how or why that knowledge was interpreted.

Existing studies of knowledge use in the SME firm are centred on three main thematic –
1. Owner/manager or entrepreneur/ intrapreneur
2. Knowledge routine established in the context of the firm and their network

3. Policy-based framework which are intended to support knowledge productions within SMEs

In the parameters of the studies, these units overlap, but they do provide a useful heuristic through which research can be examined. While only a minority of studies address entrepreneurial knowledge construction through narrative analysis, knowledge is considered to exist as a configurable resource. That is to say in the context of SME environment, knowledge is accepted uncritically as an organizational asset and set of routines as opposed to a contested, relational alignment of actions studied in a historically established practice structures of organizational power. In the literature, findings suggest that it is the use of flexible, unstructured and socially embedded experiences, established through socio-historical relations, which exemplify the knowledgeable and knowing owner/manager. In this context the owner/manager is identified as the central organizational resource, as it is their knowledge and experience which can influence, shape and exploit opportunities available within the context of the firm. In this regard owner/manager action is related to the situated and embedded nature of their practice and experience within the firm's community. This relates to Wenger and Lave (1991) and their conceptualisation of practicing communities, where an individual's identity and knowledgeable practice develops through interactions within specific context of activity. Therefore the more pro-active the owner/managers are on developing and seeking out different communities of practice the more likely they are to develop interactions which provide resources for reflecting on existing activities. Past and current interactions provide the owner/manager with unique experience through which their knowledge is established and negotiated. Given the context that knowledge and knowing is established through history, in that knowledge is developed through experience, more might be made of how these personal experiences are immersed in already existing firm practices (Tsoukas and Vladimirou, 2001). Empirical evidence has previously suggested that experience of the owner/manager is a unique resource which must be protected from unnecessary processes of formalisation. This requires research to remain sensitive to the owner/manager cultural, historical and social experiences.

There still exist gaps in the empirical research around the conceptualisations of organisational learning to be found within the literature. This can be attributed to the problems of carrying out empirical research to study the process of organisational learning, such as how does one know when learning occurs, how can the link between both the individual and organisational collective learning be demonstrated, or how can different levels of learning be differentiated? It can be suggested that these difficulties in understanding learning stem from the traditional Cartesian roots. None of the theoretical foundations presented offer a satisfactory account of how forms of activity are developed and how new practices emerge. The concepts work well in terms of being able to account for the recursive nature of social life, but the models fail to recognise the changing practices of the collective and objects of their activity. There are two issues which are notably lacking, and which have been largely unacknowledged and remain unexplored in the literature domain to organisational learning, these are issues concerning -

1. power and politics (Blackler, 1993; Coopey, 1995; Easterby-Smith *et al.*, 1998; Blackler and McDonald, 2000; Easterby-Smith *et al.*, 2000),
2. the use of artefacts and objects in developing learning practices (Easterby-Smith, 1997; Easterby-Smith *et al.*, 2000; Gherardi, 2000; Burnes *et al.*, 2003).

Understanding learning as a social practice highlights the possibility to study learning and knowing in complex and diverse work settings where the object of work is not necessarily about tangible material but rather knowing processes themselves, (Engestrom *et al.*, 1999a; Blackler and McDonald, 2000; Blackler *et al.*, 2003). In this regards epistemological approaches which are sensitive to these relational qualities, such as activity theory of practices based theory may provide researchers with a useful and purposeful framework for research. These would need to be supported by methodological approaches which enable to research to get close to the area of practice, such processual or ethnographic methods of research. As such analysis may provide a more holistic understanding of the nature of small firm learning and provide both researchers and practitioners with a more useful categorisation of small firms and their learning practices.

References

Antonacopoulou, E., and Gabriel, Y. (2001). "Emotion, Learning and Organization Change: Towards and Integration of Psychoanalytic and Other Perspectives," *Journal of Organization Change Management* Vol. 14 No. 5, pp.435-451.

Antonacopoulou, E. P. (2006) 'The Relationship Between Individual and Organizational Learning: New Evidence from Managerial Learning Practices', *Management Learning* Vol. 37 No. 4, pp.45 5–73.

Argyris, C., and Schön, D. (1978). Organizational Learning: A Theory of Action Perspective. Reading, MA: Addison-Wesley.

Baden-Fuller, C. and Stopford, J. (1994). Rejuvenating the Mature Business: The Competitive Challenge, New York, Routledge.

Bechky, B. (2003). "Sharing Meaning Across Occupational Communities: The Transformation of Understanding on a Production Floor", *Organization Science,* Vol. 14 No. 3, pp.312-330.

Becker, M. (2001). "Managing Dispersed Knowledge: Organizational Problems, Managerial Strategies, and their Effectiveness", *Journal of Management Studies* Vol. 38 No. 7, pp.1037-1051.

Beech, N., MacIntosh, R., MacLean, D., Shepherd, J. and Stokes, J. (2002). "Exploring Constraints on Developing Knowledge: On the Need for Conflict," Management Learning Vol. 33 No. 4, pp.459-475.

Beeby, M. and Booth, C. (2000). "Networks and inter-organizational learning: a critical review," *The Learning Organization* Vol. 7 No. 2, pp.75-88.

Berends, H., Boersma, K., and Weggeman, M. (2003). "The Structuration of Organizational Learning", *Human Relations* Vol. 56 No. 9, pp1035-1056.

Blackler F., and Regan S. (2006). "Institutional reform and the reorganisation of family support services", Organization Studies Vol. 27 No. 12, pp. 1843-1861

Blackler, F. (1993). "Knowledge and the Theory of Organizations: Organizations as Activity Systems and the Reframing of Management," *Journal of Management Studies* Vol. 30 No. 6, pp.863-884.

Blackler F and McDonald S, 2000, "Power, mastery and organizational learning", *Journal of Management Studies*, Vol. 37 No. 6, pp 833-851

Blackler, F., Crump, N., and McDonald, S. (2000). "Organizing Processes in Complex Activity Networks," *Organization* Vol. 7 No. 2, pp.277–300.

Blackler, F., Crump, N. and McDonald, S. (2003). "Organizing processes in complex activity networks" In Knowing in organizations: A practice-based approach. Ed Nicolini, D., Gherardi, S. and Yanow, D. New York, London: M. E. Sharpe.

Blackler, F., Regan, S. (2009), "Intentionality, agency, change: practice theory and management", *Management Learning*, Vol. 40 No.2, pp.161-77.

Blundel, R., and Smith, D. (2001) Business Networks: SMEs and Inter-Firm Collaboration. A

review of the research literature with implications for policy. Small Business Services. Report to the Small Business Service, Research Report, RR003/01, September

Bogenrieder, I. (2002). "Social Architecture as a Prerequisite for Organizational Learning," *Management Learning*, Vol. 33 No.2, pp. 197-212.

Bourdieu, P. (1977). Outline of a theory of practice. Cambridge: Cambridge University Press.

Brown, J.S., Duguid, P. (1991), "Organizational learning and communities of practice: toward a unified view of working, learning and bureaucratization", *Organization Science*, Vol. 2 No.1, pp.40-57.

Brown, J. S. and Duguid, P. (1998). "Organizing Knowledge", *California Management Review* Vol. 40 No.3, pp.90–111.

Brown, J. S. and Duguid, P. (2001). "Knowledge and organization: A social practice perspective," *Organization Science* Vol. 12 No. 2, pp.198-213.

Brown, J.S., Duguid, P., (1991). "Organizational learning and communities of practice: toward a unified view of working, learning and innovation," *Organization Science* Vol. 2 No. 1, pp.40–57.

Bruni, A., Gherardi, S., Parolin, L.L. (2007), "Knowing in a system of fragmented knowledge", *Mind, Culture, and Activity*, Vol. 14 No.1 and 2, pp.83-102.

Burnes, B., Cooper, C. and West, P. (2003). "Organisational learning: The new management paradigm?" *Management Decision,* Vol. 41No.5, pp.452-464.

Caniels, M. C. J., and Romijn, H. A. (2003). "SME Clusters, Acquisition of Technological Capabilities and Development: Concepts, Practice and Policy Lessons," *Journal of Industry, Competition and Trade*, Vol. 3 No. 3, pp. 187-210.

Carlile, P. (2002). "A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development", *Organization Science* Vol. 13 No. 4, pp. 442-455.

Carlile, P. R. (2004). "Transferring, Translating and Transforming: An Integrative Framework for Managing Knowledge across Boundaries," *Organization Science*, Vol. 15 No. 5, pp.555-568.

Chan, A., and Garrick, J. (2003). "The Moral Technologies of Knowledge Management", *Information, Communication and Society*, Vol. 6 No. 3, pp.291-306.

Chiva, R., and Alegre, J. (2005). "Organizational learning and organizational knowledge – Towards the integration of two approaches," *Management Learning*, Vol. 36 No.1, 49-68.

Choueke, R., and Armstrong, R. (1998). "The Learning Organisation in Small and Medium-sized Enterprises A Destination or a Journey?" *International Journal of Entrepreneurial Behaviour and Research*, Vol. 4 No.2, pp. 129-140.

Ciborra, C. (2006), "The mind or the heart? It depends on (the definition of) situation", *Journal of Information Technology*, Vol. 21 No.3, pp.129-39.

Cohen, W., and Levinthal, D. (1990). "Absorptive Capacity: A New Perspective on Learning and Innovation," *Administrative Science Quarterly*, Vol.35 No.1, pp.128-152.

Contu, A., and Willmott, H. (2003). "Re-embedding Situatedness: The Importance of Power Relations in Learning Theory," *Organization Science*, Vol.14 No.3, pp.283-296.

Cook, S.D.N., and Yanow, D. (1993). "Culture and organizational learning," Journal of *Management Enquiry* Vol.2 No. 4, pp.373-390.

Cooke, P., and Wills, D. (1999). "Small Firms, Social Capital and the Enhancement of Business Performance through Innovation Programmes," *Small Business Economics*, Vol.13 No.3, pp.219-234.

Coopey, J. and Burgoyne, J. (2000). "Politics and Organizational Learning," *Journal of Management Studies*, Vol. 37 No.6, pp.869-885.

Crossan, M. M., Lane, H. W., and White, R. E. (1999). "An Organizational Learning Framework: From Intuition to Institution," *Academy of Management Review*, Vol. 24 No. 3, pp. 522-537.

Crossley, N. (2001). The Social Body: Habit, Identity and Desire. London: Sage.

Czarniawska, B. (2004), "On time, space and action nets", *Organization*, Vol. 11 No.6, pp.773-91

David, P. (1985). "Clio and the Economics of Qwerty," *The American Economic Review*, Vol. 75 No. 2, pp.332-337.

De Long, D. W., and Fahey, L. (2000). "Diagnosing cultural barriers, to knowledge management," *Academy Of Management Executive*, Vol.14 No.4, pp.113-127.

Denis, J.L., Langley, A., Rouleau, L. (2007), "Strategizing in pluralistic contexts: rethinking theoretical frames", *Human Relations*, Vol. 60 No.1, pp.179-215.

DiBella, A. J., Nevis, E. C. and Gould, J.M. (1996). Understanding organizational learning capability. *Journal of Management Studies*, Vol. 33 No. 3, pp.361-379.

DiMaggio, P., and Powell, W. W. (1997). "Institutional Isomorphism "in Organisational Theory. London: Penguin. Ed Pugh, D. pp. 435-459.

Easterby-Smith M., Crossan, M., and Nicolini, D. (2000). "Organizational Learning: Debates Past, Present and Future," *Journal of Management Studies,* Vol. 37 No.6, pp.783–96.

Easterby-Smith, M. (1997). "Disciplines of organizational learning: Contributions and critiques," *Human Relations* Vol. 50 No. 9, pp.1085-1113.

Easterby-Smith, M., and Araujo, L. (1999). "Organizational Learning: Current Debates and Opportunities, " in Organizational Learning and the Learning Organization. Ed M. Easterby-Smith, J. Burgoyne and L. Araujo 1–21. London: Sage Publications.

Easterby-Smith, M., Araujo, L. and Burgoyne, J. (1999). Organizational Learning and the Learning Organization. Developments in Theory and in Practice. London: Sage.

Easterby-Smith, M., Lyles, M.A. (Eds) (2003). Handbook of Organizational Learning and Knowledge Management, Blackwell Publishing, Oxford,

Easterby-Smith, M., Snell, R., and Gherardi, S. (1998). "Organizational learning: Diverging communities of practice?" *Management Learning*, Vol. 29 No. 3, pp.259-272.

Edwards, M. (1997). "Organizational learning in non-governmental organizations: What have we learned?" *Public Administration and Development*, Vol. 17 No. 2, pp.235-250.

Elkjaer, B. (2003). "Social Learning Theory: Learning as Participation in Social Processes," in The Blackwell Handbook of Organisational Learning and Knowledge Management, Ed M. Easterby-Smith, and M. Lyles 38–53. Oxford: Blackwell Publishing.

Emirbayer, M. and A. Mische. 1998. "What is agency?" *American Journal of Sociology* Vol. 103 No.4 pp.962-1023.

Engeström, Y. (1987), *Learning by Expanding: an Activity Theoretical Approach to Developmental Research*, Orienta Konsultit, Helsinki,

Engestrom, Y. (1999a)." Activity theory and individual and social transformation," in Perspectives on activity theory. Ed Engestrom, Y., Miettinen, R. and Punamaki, R. L. Cambridge: Cambridge University Press.

Engestrom, Y. (1999b). "Innovative learning in work teams: Analysing cycles of knowledge creation in work teams," in: Perspectives on activity theory Ed Engestrom, Y., Miettinen, R. And Punamaki, R. L. Cambridge: Cambridge University Press.

Engeström, Y. (2004). "New Forms of Learning in Co-configuration Work", Journal of Workplace Learning Vol. 16 No. 1/2, pp.11-21.

Engeström, Y. (2005). "Knotworking to Create Collaborative Intentionality Capital in Fluid Organizational Field," in Collaborative Capital: Creating Intangible Value. Ed M. M. Beyerlein, S. T. Beyerlein and F. A. Kennedy. Amsterdam: Elsevier.

Feldman, M., and Rafaeli, A. (2002). "Organizational Routines as Sources of Connections and Understandings," Journal of Management Studies Vol. 39 No. 3, pp.309-331.

Fiol, C. M. (1994). "Consensus, Diversity, and Learning in Organizations," *Organization Science,* Vol. 5 No. 3, pp.403-420.

Fiol, C. M., and Lyles, M. A. (1985). "Organizational Learning," *Academy Of Management Review,* Vol. 10 No. 4, pp.803-813.

Floren, H. (1996). "Collaborative approaches to management learning in small firms," The Journal of Workplace Learning, Vol. 15 No.5, pp. 203–216.

Freel, M. (2000). "Do Small Innovating Firms Outperform Non-innovators?" *Small Business Economics,* Vol. 14 No. 3, pp.195-210.

Gherardi, S., Nicolini, D., and Odella, F. (1998). "Toward a social understanding of how people learn in organizations," Management Learning, Vol. 29 No.3, pp.273.

Gherardi, S. (1999). "Learning as Problem-Driven or Learning in the Face of Mystery?" *Organization Studies,* Vol. 20 No. 1, pp.101-123.

Gherardi, S. (2000). "Practice-Based Theorizing on Learning and Knowing in Organizations," *Organization*, Vol. 7 No.2, pp.211-223.

Gherardi, S. (2006). Organizational knowledge: The texture of workplace learning. Malden MA, Oxford, Carlton Vic: Blackwell Publishing Ltd.

Gherardi, S., and Nicolini, D. (2003a). "The sociological foundations of organizational learning" in Handbook of organizational learning and knowledge. Ed Dierkes, M., Berthoin Antal, A., Child, J. and Nonaka, I. Oxford: Oxford University Press.

Gherardi, S., and Nicolini, D. (2003b). "To transfer is to transform: The circulation of safety knowledge" in Knowing in organizations: A practice-based approach Ed Nicolini, D., Gherardi, S. and Yanow, D New York, London: M. E. Sharpe.

Gherardi, S. (2008), "Situated knowledge and situated action: what do practice-based studies promise?", in Barry, D., Hansen, H. (Eds),*Sage Handbook of the New and Emerging in Management and Organization*, Sage, London, pp.516-25

Gold, J., Holman, D. and Thorpe, R. (2002). "The Role of Argument Analysis and Story Telling in Facilitating Critical Thinking," *Management Learning*, Vol. 33 No. 3, pp.371-388.

Grant, R. (1996). "Toward a Knowledge-Based Theory of the Firm," *Strategic Management Journal*, Vol. 17 No. Winter SI, pp.109-122.

Gray, C. and Gonsalves, E. (2002). "Organizational Learning and Entrepreneurial Strategy," *The International Journal of Entrepreneurship and Innovation*, Vol. 3 No. 1, pp. 27-33.

Heath, C., Button, G. (2002), "Special issue on workplace studies: editorial introduction", *The British Journal of Sociology*, Vol. 53 No.2, pp.157-61.

Heidegger, M. (1962), *Being and Time*, Harper & Row, New York, NY, .

Heracleous, L., and Marshak, R. J. (2004). "Conceptualizing Organizational Discourse as Situated Symbolic Action," *Human Relations*, Vol. 57 No. 10, pp.1285-1312.

Hoffman, K., Parejo, M., Bessant, J., and Perren, L. (1998). "Small Firms, R&D, Technology and Innovation in the UK: A Literature Review," *Technovation*, Vol. 18 No. 1, pp.39-55.

Holmqvist, M. (2004). "Experiential learning processes of exploitation and exploration within and between organizations: An empirical study of product development," *Organization Science*, Vol. 15 No. 1, pp.70-81.

Iles, P., and Yolles, M., (2002). "Across the great divide: HRD, technology translation, and knowledge migration in bridging the knowledge gap between SMEs and universities," *Human Resource Development International*, Vol. 5 No. 1, pp.23–53.

Inkpen, A. (2000). "Learning Through Joint Ventures: A Framework of Knowledge Acquisition," *Journal of Management Studies,* Vol. 37 No. 7, pp.1019-1043.

Kakati, M. (2003). "Success Criteria in High-Tech New Ventures," *Technovation*, Vol. 23 No. 5, pp.447-457.

Kamoche, K. and Mueller, F. (1998). "Human Resource Management and the Appropriation-Learning Perspective," *Human Relations*, Vol. 51 No. 8, pp.1033-1060.

Kazanjian, R. K. (1988). "Relation of Dominant Problems to Stages of Growth in Techno," *Academy of Management Journal*, Vol. 31 No. 2, pp. 257-279.

Knight, D., Murray, F. and Willmott, H. (1993). "Networking as Knowledge Work: A Study of Strategic Interorganizational Development in the Financial Services Industry," *Journal of Management Studies,* Vol. 30 No. 6, pp.975-995.

Knorr Cetina, K. (1997). "Sociality with objects. Social relations in postsocial knowledge societies," *Theory, Culture & Society*, Vol. 14 No.1 pp.1-30.

Lave, J., Wenger, E. (1991), *Situated Learning. Legitimate Peripheral Participation*, Cambridge University Press, Cambridge, .

Leonard-Barton, D. (1995). *Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation*, Boston, Harvard Business School Press.

Levinthal, D. A., and March, J. G. (1993). "The Myopia of Learning," *Strategic Management Journal*, Vol. 14 No. special issue, pp.95-112.

Macpherson, A., Jones, O., and Zhang, M. (2005). "Virtual Reality and Innovation Networks: Opportunity Exploitation in Dynamic SMEs," *International Journal of Technology Management*, Vol. 30 No. 1/2, pp. 49-66.

Miettinen, R., and Virkkunen, J. (2005). "Epistemic Objects, Artefacts and Organizational Change," *Organization*, Vol. 12 No. 3, pp. 437-456.

Nahapiet, J., and Ghoshal, S. (1998). "Social Capital, Intellectual Capital and the Organizational Advantage," *Academy of Management Review*, Vol. 23 No. 2, pp.242-66.

Nelson, R. and Winter, S. (1982). *An Evolutionary Theory of Economic Change*, Cambridge, MA, Harvard University Press.

North, D. and Smallbone, D. (1996). "Small Business Development in Remote Rural Areas: The Example of Mature Manufacturing Firms in Northern England," *Journal of Rural Studies*, Vol. 12 No. 2, pp. 151-167.

Orr, J. (1996), *Talking about Machines: An Ethnography of a Modern Job*, Cornell University Press, Ithaca, NY, .

Orlikowski, W. (2000), "Using technology and constituting structures: a practice lens for studying technology in organizations", *Organization Science*, Vol. 12 No.4, pp.404-28.

Orlikowski, W.J. (2002), "Knowing in practice: enacting a collective capability in distributed organizing", *Organization Science*, Vol. 13 No.3, pp.249-73.

Orlikowski, W.J. (2007), "Sociomaterial practices: exploring technology at work", *Organization Studies*, Vol. 28 No.9, pp.1435-48.

Owen, C.A. (2001). "The role of organisational context in mediating workplace learning and performance," *Computers in Human Behaviour*, Vol. 17 No.5, pp.597-614.

Park, S. H., Chen, R., and Gallagher, S. (2002). "Firm Resources as Moderators of the Relationship between Market Growth and Strategic Alliances in Semiconductor Start-Ups," *Academy of Management Journal*, Vol. 45 No. 3, pp.527-545.

Polanyi, M. (1966): *The Tacit Dimension*, Routledge and Kegan Paul: London, UK.

Rae, D. (2002). "Entrepreneurial Emergence: A Narrative Study of Entrepreneurial Learning in Independently Owned Media Businesses," *The International Journal of Entrepreneurship and Innovation*, Vol. 3 No. 1, pp.53-59.
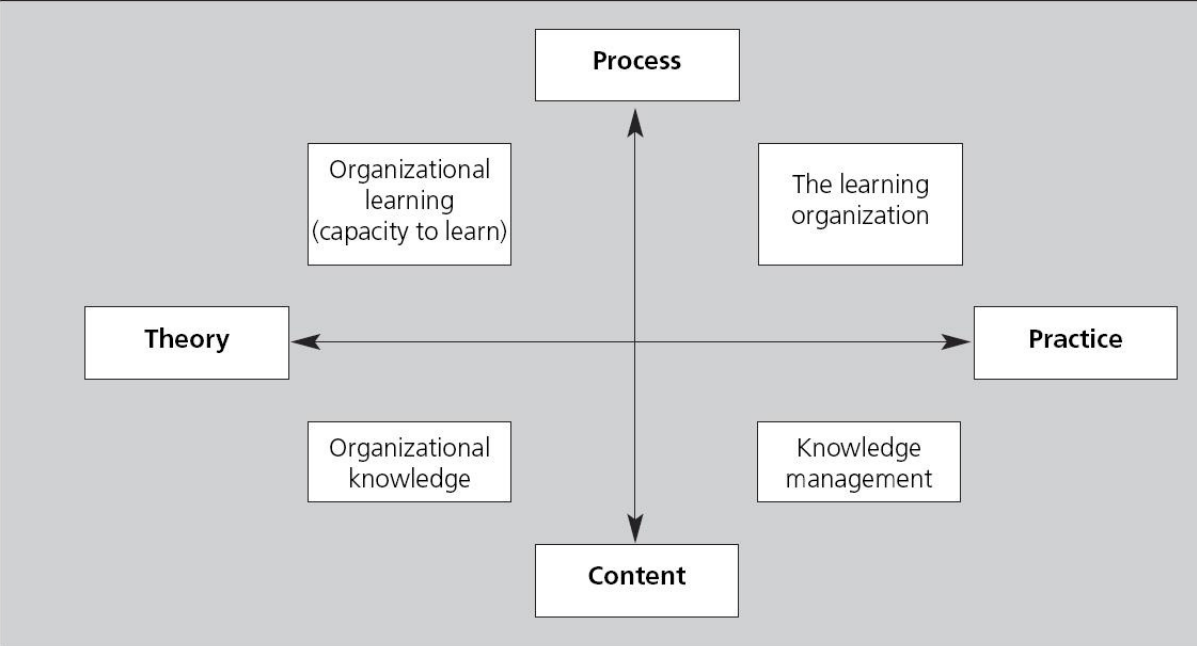
Rae, D. (2004). "Practical Theories from Entrepreneurs Stories: Discursive Approaches to Entrepreneurial Learning," *Journal of Small Business and Enterprise Development*, Vol. 11 No. 2), pp.195-202.

Rae, D., and Carswell, M. (2001). "Towards a Conceptual Understanding of Entrepreneurial Learning," *Journal of Small Business and Enterprise Development*, Vol. 8 No.2, pp.150-158.

Rheinberger, H.J. (1997). Toward a history of epistemic things: Synthesizing proteins in the test tube. Stanford, CA: Stanford University Press.

Salaman, J.G., and Storey, J (2002). "Managers' theories about the process of innovation" *Journal of Management Studies*, Vol. 39 No.2, pp. 147-165.

Sanchez, R. and Heene, A. (1997). "A Competence Perspective on Strategic Learning and Knowledge Management," in Strategic Learning and Knowledge Management Ed R. Sanchez and A. Heene 3–18. Chichester: John Wiley & Sons Ltd.

Sarasvathy, S. (2003). Entrepreneurship as a science of the artificial. *Journal of Economic Psychology*, Vol. 24, pp.203–220.

Schulz, M. (2001). "The Uncertain Relevance of Newness: Organizational Learning and Knowledge Flows", *Academy of Management Journal*, Vol. 44 No.4, pp.661-681.

Schultze, U., Boland, R. (2000), "Knowledge management technology and the reproduction of knowledge work practices", *Journal of Strategic Information Systems*, Vol. 9 No.2-3, pp.193-212.

Shiristava, P. (1983). "A Typology of Organizational Learning Systems," *Journal of Management Studies*, Vol. 20 No.1, pp. 7-28.

Spender, J. C. (1996c). "Organizational Knowledge, Learning and Memory: Three Concepts in Search of a Theory," Journal of Organizational Change Management Vol. 9 No.1, pp.63–78.

Spender, J.C., and Grant, R. (1996). "Knowledge and the Firm: Overview," Strategic Management Journal Vol. 17 No.SI Winter, pp.5-9.

Spender, J.C., (1989). Industry recipes: the nature and source of management judgement. Basil Blackwell, Oxford.

Stanworth, M. and Curran, J., (1976). "Growth and the Small Firm – an Alternative View," *Journal of Management Studies*, Vol. 13 No.2, pp.95-110.

Strati, A. (2007), "Sensible knowledge and practice-based learning", *Management Learning*, Vol. 38 No.1, pp.61-77.

Teece, D. T. (1998). "Capturing Value from Knowledge Assets: The New Economy, Markets for Know-how, and Intangible Assets," *California Management Review*, Vol. 40 No.3, pp.55–79.

Tsoukas, H., and Vladimirou, E. (2001). "What Is Organizational Knowledge," *Journal of Management Studies*, Vol. 38 No.7, pp. 973-974.

Vera, D., and Crossan, M. (2004). "Strategic Leadership and Organizational Learning,"*Academy of Management Review*, Vol. 29 No.2, pp.222-240.

Vera, D. and Crossan, M. (2003) Organizational learning and knowledge management: Toward an

integrative framework *In*: Easterby-Smith, M. and Lyles, M. A. (Eds.) *The Blackwell handbook of organizational learning and knowledge management*. Malden, Oxford, Melbourne, Berlin: Blackwell Publishing Ltd.

Vince, R., and Saleem, T. (2004). "The Impact of Caution and Blame on Organizational Learning," *Management Learning*, Vol. 35 No.2, pp. 133-154.

Von Krogh, (2002) The communal recourse and information systems. *Journal of Strategic Information Systems,* Vol. 11 No.2, pp. 85-107.

Walsh, J. P. and Ungson, G. R. (1991). "Organizational Memory," Academy of Management Review Vol. 16 No.X, pp. 57-90.

Watkins, K. E., & Marsick, V. J. (1993). Sculpting the learning organization: Lessons in the art and science of systemic change. San Fransosco: Jossey-Bass.

Weick, K. (1995). Sensemaking in Organizations, Thousand Oaks, CA, Sage.

Weick, K. E. (1988) ."Enacted sensemaking in crisis situations," *Journal of Management Studies,* Vol. 25 No.4, pp. 305–317

Wenger, E. (2000). "Communities of Practice and Social Learning System," *Organization*, Vol. 7 No.2, pp.225-246.

Wenger, E.C., and Snyder, W.M. (2000). "Communities of Practice: the Organizational Frontier," *Harvard Business Review*, Vol.78 No.1, pp. 139-145.

Wenger, Etienne (1998). Communities of Practice: Learning, Meaning, and Identity, Cambridge: Cambridge University Press, pp. 318.

Yanow, D. (2004). "Translating local knowledge at organizational peripheries," British Journal of Management Vol.15 No. S1, pp. S9-S25.

Zeitsma, C., Winn, M., Branzei, O. and Vertinsky, I. (2002). "The War of the Woods: Facilitators and Impediments of Organizational Learning Processes," *British Journal of Management*, Vol.13 No. SI, pp. S61-S74.

Figure 1

Mapping of key topics

	Process	
Organizational learning (capacity to learn)		The learning organization
Theory ←————————————→ **Practice**		
Organizational knowledge		Knowledge management
	Content	

(Source: Adapted from Easterby-Smith and Lyles, 2005)