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The effects of managers on elements of the work environment that influence employees' informal workplace learning in small manufacturing firms: an exploratory study

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Abstract

Despite the importance of small business sectors to national economies, and wide recognition of the need to leverage learning for competitive advantage, field research on learning in small firms has not been forthcoming. This exploratory qualitative study used content analysis of data, collected through semi-structured interviews, to examine the effects of managers on employees' work-related learning in ten small manufacturing firms. Findings of this study offer preliminary evidence that managers do, either intentionally or unintentionally, have significant effects on employees' work-related learning. The effects of managers on salient elements of the firm's work environment that have the potential to influence employee learning are reported here. The ways in which the findings are suggestive for management practice and research are discussed.



INTRODUCTION

Burgeoning literature on workplace learning, organisational learning and the 'learning organisation' is evidence of growing interest in workplaces as learning environments. The importance of learning is primarily attributed to rapid and continuous change in the organisation's external environment (Gardiner, Leat & Sadler-Smith, 2001). Some commentators believe that organisations that learn faster will be able to adapt quicker and thus avoid the economic evolutionary weeding out process (Schein, 1993). According to De Geus (1988: 71), learning is important, not only for organisational survival, but also because "the ability to learn faster than your competitors may be the only sustainable competitive advantage".

Small firms represent a significant part of the workplace-learning context in New Zealand (Cameron & Massey, 1999). Almost 99 percent of New Zealand enterprises employ 49 or fewer full time equivalents, and these firms account for approximately 54 percent of people employed in enterprises (Statistics New Zealand, 2002). This has important implications for New Zealand's national prosperity and competitiveness. How learning is orchestrated in such organisations is a matter of major interest (Gibb, 1997; Sadler-Smith et al. 2000).

Small business researchers (e.g. Chaston, Badger & Sadler-Smith, 2001; Gibb, 1997; Field, 1998; Hill & Stewart, 2000; Kerr & McDougall, 1999) agree that formal training is generally not suited to small firms for a variety of reasons. These include cost, time and perceived lack of relevancy (Gibb, 1997). Informal, on-the-job learning is deemed the preferred approach. The importance of learning for competitive performance of small firms, and strong preference for informal, on-the-job learning in this sector, suggests that managers in small firms could play an important role in fostering informal workplace learning (Sadler-Smith et al. 2000; Hendry, Arthur & Jones, 1995).

In New Zealand (NZ), studies of manufacturing practices (Australian Manufacturing Council, 1994; Ministry of Commerce, 1999; Knuckey et al. 2002) show that employee practices, including employee development, are underdeveloped. Thus, although the discourses of Human Resource Management, the 'learning organisation' and 'knowledge management' suggest that learning is a central concern in the workplace (Evans & Rainbird, 2002), these NZ studies indicate that the potential of workplaces as sites for learning are not being fully realised. These concerns need to be investigated from a perspective that is broader than training to further understand learning processes in small firms, and to suggest practice that might, if addressed, improve both managerial performance and the quantity and quality of workplace learning.

This paper describes selected findings from an exploratory study that involved semi-structured interviews with managers and employees in small manufacturing firms located in the Wellington region. One research question that guided the study was: What are the effects of managers on salient elements of the firm's work environment that influence learning? Selected findings related to this question are reported here.

METHOD

For the current study, a manufacturing firm is defined as small if it has 10-49 full time equivalent employees. A small "sample" of respondents (17) comprised of managers and subordinates were interviewed in depth. Two sets of open-ended interview questions were used. One for interviews with managers, and a different set for interviews with subordinates. As soon as the transcript of an interview was available for review, it was checked for accuracy and carefully examined repeatedly. Reflective



remarks were recorded in the margins (Miles & Huberman, 1994). Thoughtful review of the interview transcript was followed by content analysis (Patton, 1990; Weber, 1985). The contents of the data were classified by writing codes directly on the relevant data passages, and then colour coding the data strips. Codes had been developed for three levels of analysis of the work environment: organisational, social, physical, using the frameworks suggested by Billett (2001) and Knowles (1990).

To facilitate cross-interview analysis, data was displayed through building matrices with a descriptive intent (Miles & Huberman, 1994). Rows were devoted to codes assigned to interview participants, and columns to elements of the organisation's work environment. Cell entries in the matrices consist of direct quotes taken from coded data segments located in the interview transcripts. Looking for 'recurring regularities' (Patton, 1990) in the data, was the main tactic for drawing meaning from the data. Using this tactic, a total of nine themes emerged from the data. Only selected themes are discussed in the following section.

FINDINGS AND DISCUSSION

This section presents and discusses themes emphasised by the participants, and illustrates these themes by quotations. Actual names used in illustrative quotations have been changed. Insights from the current study are linked to existing theory, and where appropriate, links between the context of the current study and other contexts are also established.

Organisational Environment

As already noted, the first level of analysis concerned organisational aspects of the work environment. Several comments by numerous participants revealed the theme of managers *providing access to a range of authentic vocational activities* (Theme 1):

If we train a fitter and turner, we train him in every aspect. They do a stint on the automatics, they do a stint on the capstans, they also get involved on the presses. Then they get into the drafting side, learning the shrinkages on dies, and they spend time in the tool room. When they leave here they can do a variety of jobs, including welding, they are taught the whole lot right through.
(Foreman)

In one firm, workers seemed to enjoy broad, discretionary roles.

We're probably quite loose on job descriptions, position descriptions and titles, we try and work in terms of setting goals and responsibilities and objectives. We work all the way down to tasks and action plans, and probably maybe even less specified than we ought to be in terms of what those tasks and action plans are. It's the need to have people, not make it up as they go, but react to the environment and set their own agenda, fully aware of the objectives that need to be attained.
(Owner-manager)

Such environments, where workers experience fewer barriers to work practice, should offer greater opportunities for workplace learning (Billett, 2001; Ellstrom, 2001).

Although work assignments presented learning opportunities in some firms, this was by no means always the case. Other firms seemed to be characterised by low skilled work, with low learning potential and used job rotation to reduce boredom, rather than as a learning mechanism as suggested by Ortega (2001) and others.



If you sat on the machines all day you would get bored. So I try to rotate them, they get 4 hours on this machine and 4 hours on that, so they are not doing the same thing. I rotate them to try and keep the morale up a bit. (Leading hand)

The notion of *family* was important within the data set, and related to this, managers *encouraging recruitment from the employees' familial and social milieu* emerged as a theme (Theme 2). As seems to be the case with most small businesses, word-of-mouth was the most effective system of recruitment for firms in the current study (Ram & Holliday, 1993). Managers seemed to allow employees substantial autonomy in attracting new workers, and were ceding considerable discretion over the recruitment decision.

I haven't advertised for production staff for six years, and when somebody leaves the production staff find their own replacements. (Owner-manager)

Generally, recruitment involved managers encouraging their workers to ask friends and relatives to work for their firm. This made it more likely that new recruits would be from the workers' familial and social milieu:

A lot of the actual production line work, that's pretty well all ladies, there's a good mixture out there of different Island groups and Maori. They just seem to find their own replacements. I think a lot of the Island ones come from within a church group, and there's about three members of one family out there. (Owner-manager)

According to Ram and Holliday (1993), this practice of giving jobs to workers by virtue of their 'family' status, is inextricably linked with an important quality that an individual can bring to the job, which is to be able to 'fit in' with the existing workforce and organisational culture. Workers who help recruit a new employee from their familial or social milieu are likely to take the initiative in socialisation of the newcomer.

We've tended to hire family members in many cases. So, probably in a company of 20, 4 families. There is obviously a bit of pre-employment training that goes on within the family, so that has its challenges, but probably makes things a bit easier as well. (Owner-manager)

Thus some newcomers may already have started the process of being acculturated into the organisation, and developing an understanding of requirements of the owner-manager, before commencing employment. Such informality in recruitment may also be viewed as a means of furthering management's indirect control over the workforce (Holliday, 1995) and shifting management's overall responsibility for the initial training and job performance of newcomers to workers.

The good thing about it is that if somebody is not doing the job properly you really don't have to do much. They sort it out themselves. And I stay out of it. I just speak to Mareikura who is the Union delegate and we just don't have to worry about whether anyone's up to the job because the rest of them keep them up to the job. Or you'll find that one will just suddenly stop turning up and I'll say, 'She's not turning up', and they say, 'No, she's left, but I've got another girl lined up'. (Owner-manager)

The next excerpt also seems consistent with Ram and Holliday's (1993) view that "small firms are saturated with the ideology of the family" (p.629).



I came home from work one night and he said 'I'm leaving school'. And I said 'No you're not!' He said, 'Yeah, I'm leaving school'. He said, 'I've got an apprenticeship.' So I thought, oh, okay, 'Where have you got this apprenticeship?' He said, 'Where you work'. So the system had been shortcut, I didn't get spoken to about it at all. But he served his time and he's doing really... in Hamilton... he's doing really well up there now. And I probably was harder on him than anybody. (Foreman)

These comments suggest the foreman gave his son extraordinary attention as a learner and provide further evidence that extensive familial involvement, that is encouraged in some of the firms studied, could have important implications for employee learning.

Employee selection methods used by some managers also seem to have important implications for employee learning. Data suggests it may be common to *use employee selection methods that also help diagnose the learner's current skill level* (Theme 3). These methods include assessing potential new employees on the job using work sample tests, and employing staff on a 'trial' basis:

They basically go out there and sit on a sewing machine and the operators out there tell us whether they can sew or not, what they can do, and what they think. That's way better than me saying, 'I like this person'. Because if they can't sew, they can't sew. (Owner-manager)

Our main recruitment area is when we have major peaks of work we tend to bring on casual contract labour to help us through that peak. And we often pick the eyes out of those people. They might be here for two to three months, and that's long enough to assess those sorts of people and their value to what we do. (Owner-manager)

In addition to providing information to select an employee, such methods could also help diagnose the person's current skill level, and provide information about learning needs of the new recruit.

Usually we throw them in the deep end and see how they swim. We did that with Marcel and he did very well. He did some very difficult tasks that will require quite a bit of training, and he was doing them on his first day and in his first week. So he was very skilled in picking up skills, and doing it quickly. And then you just gradually learn what his weaknesses and his strengths are. And you apply what would help his strengths and what would help his weaknesses. (Supervisor)

These excerpts, as well as other comments by respondents, suggest that it may be inaccurate to characterise learning arrangements in small firms as 'unstructured' and 'ad hoc' (Kerr & McDougall, 1999). Although formal identification of training needs is practised more frequently in larger firms (e.g. Sadler-Smith, Sargeant & Dawson, 1998; Vikerstaff, 1992), it could reasonably be argued that employee selection methods used by some firms that participated in the current study may, inadvertently, also serve as a mechanism to identify the learning needs of new recruits. Supervisors and experienced co-workers can then identify and select tasks appropriate to the learner's level of readiness, and establish pathways of learning activities that provide engagement in tasks of increasing accountability and complexity (Billett, 2001; Lave & Wenger, 1991).

Social Environment

The second level of analysis was in terms of social aspects of the work environment. The relationship between the amount and quality of communication in the workplace on the one hand, and employee



learning on the other, was a recurring theme. Participants in several firms provided numerous examples of how communication either facilitated or constrained learning. Managers were perceived to have an important responsibility to *promote communication in the workplace* (Theme 1).

We've got a new production manager in, who is much, much better in terms of the whole area of communication with staff. He's far more open about what he's doing, he explains what he's doing and he includes the people around him in the process of trying to solve a problem. With him coming in there's a far more relaxed and free flow of communication right through from sales and marketing and administration into production. And that I think has seen people taking more responsibility for the things that they're involved in doing. (Owner-manager)

Novice employees were expected to take responsibility for their own learning, and engage in learning behaviours, including seeking feedback and asking for help. Supervisory staff emphasised that they encourage learners to engage in such learning behaviours:

And I said, 'Look Anthony, if you're not clear ask. I don't care if you ask me a hundred times. I'd sooner tell you a hundred times and you get it right than get frustrated with it.' (Foreman)

In two organisations it was reported that some production workers had low levels of English proficiency. This was considered a major barrier to workplace learning.

We've got quite a few different languages out there. There's Greek, and Samoan, and Maori and Indian as well, so there's quite a mix of different ethnic backgrounds, which can make communication a little bit hard at times. It can be a problem, especially in perhaps a staff meeting where not everybody understands what is being said and it can lead to confusion and miscommunication and even an instruction to do something can occasionally lead down the wrong path. (Production Co-ordinator)

An owner-manager explained how she tried to limit negative effects on the learning of employees' who lack proficiency in English:

I'm lucky in that I've got a team that is really keen to learn. But then I've also got three Indians. And communications are sometimes not perfect because of the language barrier and that. But they are just as keen to learn as my two young guys. So one of the guys is pretty good at English, and we get him to transfer everything into Indian for them. That helps them along so that they get a better understanding of where we are all going. (Owner-manager)

Discussion thus far highlights the critical importance of communication in relation to facilitating workplace learning, and the manager's task of promoting communication in the workplace. There is also a consistent view within management theory that managers can play a key role in facilitating learning by creating an open communication climate, and encouraging dialogue in the workplace (e.g. Senge, 1990). Peer communication and interaction within the organisation is considered an important influence on learning (Tannenbaum, 1997). Managers can facilitate peer communication by encouraging employees to use each other as information and learning resources (Lang & Wittig-Berman, 2000). Some managers who participated in the current study, appear committed to encouraging a free flow of communication in the workplace. But it seems lack of English proficiency, particularly among the production workers, may be a factor that constrains communication, and thus learning.



Numerous respondents stressed the importance of learners' interaction with more experienced co-workers who are able to guide novices through the complexities of practice. It was evident that managers play an important role in *facilitating the learners' access to direct guidance from more skilled others* (Theme 2).

If I was to give an employee a job that he hadn't done before, or a new employee work, the best option is to put him with somebody who has done the job before. In that way they can communicate with that person as to why they do these things, and the process in which they do them. And that may happen a couple of times and then that employee who is new would be put on that job by himself and then he would learn that way by doing it himself and also pick up the individual skills to do it, and come up with different ideas as to how it can be done better and more efficient as well. (Supervisor)

The following excerpt further illustrates how a manager contributes to an employee's learning through facilitating access to close guidance from a co-worker who can reveal 'tricks of the trade' (Billett, 2001) that novices are unlikely to discover on their own.

We tend to try and pair guys up. So, one of the guys will say, 'I'm not doing enough roller doors'. We can afford to send him out, so we will send him out with Peter for half a day. So he's working with Peter who knows all about the roller doors. And there are little tricks here and there that they pick up. (Company Manager)

Indirect guidance, such as learners listening to and observing other workers, was also considered important:

As far as training goes, it's watching others, it's watching Adam and other people. There's not anything formal about training or skill development. (Supervisor)

These excerpts illustrate the vital importance of direct guidance from more skilled others (Billett, 2001) and more distal support through observing and listening to other workers (Bandura, 1977) in the process of learning at work. However, some may be reluctant to share their knowledge. They may fear displacement, or challenges to their status, by those whom they are assisting to learn (Billett, 1995; Lave & Wenger, 1991). What's more, providing learning support may reduce their productivity, and their contributions to the learning of others' may not be rewarded, or at least recognised (Billett, 1995). This highlights the need for managers to create a social environment that is perceived by workplace participants to be favourable for knowledge sharing.

Managers provided a structured form of personal support for learning in some firms by *designating learning facilitators* (Theme 3). In three firms a specific member of staff was responsible for the management and delivery of one or more programme, such as induction and health and safety.

She does all that induction, and runs our food safety programme, keeps it all up to date. And does the same with our health and safety programme (Owner-manager).

In some firms, one member of the supervisory staff assumed a key role in facilitating learning in the production area, and was viewed by participants as an exemplary facilitator of learning.

The production manager, he continually explained how he does his job and the background behind it. So I was learning how the whole organisation works, especially the production area, so just a



huge knowledge gain. He is a very approachable, person, which is good. In a different organisation, with a different production manager, it might have been a different outcome. But because he was so approachable and I could ask him questions and he was constantly giving little stories, information. (Production co-ordinator)

These comments suggest that the quality of interactions between learners and more experienced co-workers, including supervisors, will have important effects on learning outcomes. More specifically, the above excerpt implies that the personality, interpersonal skills, knowledge and learning orientation of key supervisory staff are major factors affecting employees' learning. This is consistent with Billett's (2001) view that "those who are to become learning guides will need to demonstrate particular attributes" (p. 188).

The findings thus suggest that some senior managers view designating learning facilitators, who provide a structured form of personal support for learning, as an important strategy to manage learning in the workplace. Additionally, findings provide further support for the belief held by some commentators (e.g. Sadler-Smith et al. 2000; Hendry, Arthur & Jones, 1995) that managers can play an important role as facilitators of learning in small firms.

Physical Environment

The third level of analysis was in terms of physical aspects of the work environment. It can be argued that a variety of elements comprising the physical environment can either help or hinder learning (e.g. Billett, 2000; Knowles, 1990). For example, in one engineering firm, a participant saw availability of more modern equipment (computer numerically controlled lathes) in competing firms as a factor that constrained learning within his firm. Whereas in bakeries, comments by respondents indicate that recipes provide important cues and clues to learning.

Myself, I learn very well from just watching, as well as hands on, and having people instructing me. But I also learn quite well through reading, like reading these recipes. (Apprentice)

The richness and accessibility of learning resources is one aspect of the physical environment that learning theorists agree is crucial to effective learning (Ellstrom, 2001). A manager gave an example of how he fostered learning through provision of a learning resource:

One of my managers loves computers, so I bought him one. Now he's an IT engineer, on good money. Soon after I bought a computer I bought him a robot, just a data computer and a cutting head that cuts shapes. And he just went to it that way, cut to order. (Owner-manager)

CONCLUSIONS

The findings offer preliminary evidence that managers in small firms do, either intentionally or unintentionally, have significant direct and indirect effects on employees' learning. Overall, the findings suggest that, in the opinion of participants, factors related to the organisational and social environments have a greater impact on employees' learning than factors related to the physical environment. To improve learning at and through work, managers need to create a work environment that offers (1) learning opportunities (e.g. challenging work activities, delegation, projects, time for learning); (2) support for learning (e.g. provision of learning resources, supervisor and peer support); and (3) encouragement to learn (e.g. recognition and rewards for learning, learning leadership).



Providing guided access to workplace activities is thought to be central to fostering learning (Billett, 2001). In this regard, first level managers, and other experienced workers, seem to play an important role. They identify and select tasks appropriate to the learner's level of readiness, and establish pathways of learning activities that provide engagement in tasks of increasing accountability and complexity (Lave & Wenger, 1991). Staff who act as learning resources and facilitators, should have the knowledge, skills and personal attributes to effectively perform their role (Billett, 2001). It is likely that they will need practical advice and behavioural guidelines to help them strengthen informal learning at work. What's more, their performance should be managed.

Clearly, more empirical studies are needed to further enhance understanding the effects of managers on employee's learning in small firms. In such future work, management theory will need to be complemented by insights from other literatures. Situated learning (Lave & Wenger, 1991), informal and incidental learning (Marsick & Watkins, 1990) and social learning theory (Bandura, 1977) may be especially helpful in arriving at a better understanding of the topic.

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