Can open plan working prove beneficial?

CAN OPEN PLAN WORKING PROVE BENEFICIAL?
MBA DISSERTATION

VILMA GRATTON

CHESTER BUSINESS SCHOOL

JUNE 2009

Acknowledgements

The author would like to thank her colleagues who put up with endless questionnaires and returned every one within the allotted time. And special thanks to Steve Page without whose ultra-fast feedback this document would never have been finished.

Declaration

This work is original and has not been submitted previously for any academic purpose. All secondary sources are acknowledged.

Signed: ______________________

Date: ______________________

Abstract

This research uses social identity theory as a lens when examining whether open plan working can prove beneficial, bringing together several disciplines in one office. The research finds that benefits are evident but cannot be guaranteed in all circumstances. Similar benefits may not be replicated if a similar exercise were carried out elsewhere.

The research finds that the main benefits lie in an easing of the tension between process and practice and faster and improved communication. Additionally, learning about one's colleagues due to increased interaction can increase tolerance levels and improve relations. However, the starting sub-groups are found to persist through time and this can affect the standing of the newly created group. Leadership of the new group is also a cause for concern.

Further opportunities for research are identified. Placing deviant employees within an open plan environment can help mediate their behaviour (although the employee does need to possess a desire to remain a member of the ingroup and this desire is not something which can be easily manipulated). The benefits of possible behaviour modification of "difficult" employees warrants further investigation into how this outcome can be guaranteed. Additionally, the research indicates that there may be a possible link between low global self-efficacy, high organisational self-efficacy and citizenship behaviours and expended effort.

Table of Contents

Page No.

Chapter one – Introduction

The British upholstery sector is an endangered species. Like the British textile industry which withered and died several years ago, upholstery manufacturing appears to be falling victim to the creeping threat of cheap foreign imports. The British Furniture Manufacturing Association (BFM) published a benchmarking report on the export performance of UK manufacturers between 1994 and 2003 in April of 2005 which identified that UK expenditure on imports has tripled during the last ten years. Significantly, imports doubled between 1994 and 2001, but increased by 26.6% between 2001 and 2003 (see table 1). Unfortunately, there was not a similar increase in exports, levels remaining fairly consistent over the entire period. This is a worrying trend, in particular the sharp rise in imports between 2001 and 2003. Although Western Europe has traditionally been the major source of imports, its share is diminishing and it has lost ground over the ten year period covered by the report to Asia (up from 18% to 24%), in particular China (up from 2.2% to 13.04%); and Poland (up from 1.11% to 4.67%).

Despite this, the BFM report remains fairly upbeat about the sector's fortunes, pointing out that although imports were up, there had not been a corresponding decrease in the numbers employed within the industry (130,860 persons in 1997 and 123,670 in 2003), nor in the quantity of companies registered as furniture manufacturers (8,455 in 1997 as compared to 7,510 in 2003). The report's appendix highlights that there was a 6.5% reduction in furniture employees in 2003 compared to 2002 but simply states that this anomaly cannot be accounted for. In fact, the report suggests that imports may have created new markets within the UK. However, this could be an overly-optimistic view.

The report's authors interviewed both local and overseas buyers to ascertain their reasons for not purchasing UK products. Although the majority of buyers seemed in agreement that quality was satisfactory, one over-riding complaint was that prices were too high. These comments, when taken together with the BFM's later (2005) State of trade survey, appear to indicate that the optimistic stance adopted in the 2005 report could have been misplaced.
The state of trade survey, which was compiled from responses from 89 furniture companies and covered the period February 2003 to October 2005, indicated that :-

- The numbers employed were down for the fourth consecutive quarter. The report states that if the official government measure were applied, then the furniture industry would be officially designated as being in recession.
- 9% of companies anticipated having to make redundancies in the following year.
- 15% of companies had already implemented short-time working or lay-offs and 16% anticipated having to do so in the near future.
- Profit margins continued to fall. Those companies actually making a profit only achieved a maximum margin of 10% (see table 2).
- Costs continued to increase.

Table 1 – UK furniture imports – worldwide totals per annum (£'s millions)

Year	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**Cumulative total**
Total per annum	1.1	1.2	1.4	1.6	1.7	2.0	2.4	2.6	3.0	3.5	20.5

Source: Benchmarking the export performance of UK furniture manufacturers, 2005

Table 2 – Profit and Loss for Upholstery manufacturers

% of companies making:

Loss	Breakeven	Profit up to 2%	Profit 2%-5%	Profit 5%-10%	Profit greater than 10%
21%	30%	15%	12%	22%	0%

Source: BFM Annual Costs and Ratio Survey January 2005.

The threat from cheap labour

The author ventures that it seems highly coincidental that the UK furniture sector seemed to be struggling in the two years following such a sharp rise in imports. Perhaps the industry had been attempting to compete with cheap imports and finally reached a point beyond which it could not go without cutting costs and shedding employees. Of course, this is speculation on the author's part but it would appear that countries with low labour costs are a threat to the UK manufacturing base. As with other industries, the main competition is felt to be China. Although Eastern European countries are encroaching on UK manufacturers' territory, their attempts to join the EU, and the fact that many Polish and Lithuanian workers are actually leaving their home countries to earn higher wages in the UK, thus depleting their local labour force, helps minimise the perceived future impact from these quarters. Indeed, anecdotal evidence appears to indicate that certain UK companies which have set up off-shore businesses in Lithuania are finding it difficult to recruit skilled workers because of the exodus to the UK. China, however, is a different matter. Although the long shipping times make the lead-times on Chinese products relatively unattractive and the majority of the products imported from China appear to be high volume with lower retail price points, thus reducing the effect on the more expensive furniture ranges, this is unlikely to remain the situation in the future. Many fabrics used in the furniture industry are actually imported from China. Obviously, these will be even cheaper if bought locally, enabling the Chinese to be competitive on both labour **and** material costs. Faced with this, how will the UK compete?

The research company

The research company has been established some twenty two years, originally being set up to supply a major high street retailer. It is part of a larger group, the parent company being a supplier to the caravan market. Recently, along with many other UK upholstery companies, it has begun to experience competition from cheap foreign imports even though its target market is more within the middle to upper price bracket. Costs have been cut wherever possible, including the number of staff employed, but it still struggles to maintain its market share. In recent months the situation has worsened as the parent company has slipped into a loss making position. Two of the parent company's largest customers have gone into receivership and the caravan sector is in a serious state of decline. This has put even more pressure onto the research company to maintain a level of profit capable of supporting the loss-making areas of the group.

The research question

The research question is :-

> *"Can moving several departments into one open plan office have beneficial outcomes?"*

This question has several objectives :-

1. *To determine if the degree of co-operative behaviour will increase.*
2. *To determine if the behaviour of 'difficult' employees can be modified by placing them within such an environment.*
3. *To examine whether the sharing and transfer of knowledge can be improved.*
4. *To ascertain whether the new, larger group will work harder and more effectively in order to achieve the company's goals.*

Justification for the study

Furniture manufacture is a highly labour-intensive operation with few operations lending themselves to automation. Could this expensive labour force be used as a major asset? Could the intellectual capital of the employees be used to gain competitive advantage?

Laycock (2005) credits Tom Stewart (1998) with beginning to develop the case for knowledge as one of the "intangible assets" becoming important in late twentieth century organisations and Denton (1998) refers to Quinn's (1992) book, *Intelligent Enterprise*, in which Quinn , recognising that the traditional sources of competitive advantage – raw materials, plant, and equipment – are relatively easy to replicate, predicts a move away from 'ephemerally superior products' to 'a few highly knowledge and service based "core competencies"'. Other academics concur; Grayson and O'Dell (1998, cited in Bollinger and Smith, 2001) describe how knowledge management will increase competitiveness by creating new knowledge which will help reduce costs, increase speed, and meet customer needs; Silver (2000, cited in Stovil and Bontis, 2002) claims that knowledge management initiatives create "amplified business value, heightened organisational success and increased competitive edge"; Drucker (1992) claims that "Knowledge is *the* primary resource for individuals and the economy overall".

Duvall (1999) cautions against ignoring the importance of knowledge by referring to Choo (1998) :

"It is predicted that over one-third of the companies on the Fortune 500 list will be dropped from the list over the next five years. The companies that have and will survive are those that are able to withstand constantly changing conditions both internal and external to the organisation, to continuously innovate, and have the knowledge within the organisation to make decisions directed at achieving organisational success".

Additionally, Schein (1993, cited in Denton,1998) states that "Current circumstances tell us that learning is no longer a choice but a necessity".

But can knowledge really be considered a strategic asset? The resource-based view of the firm gives the definition of a strategic asset as one which is rare, valuable, imperfectly imitable and non-substitutable. Bollinger and Smith (2001) claim that knowledge satisfies the criteria to be considered a strategic asset. However, not all academics agree. Meso and Smith (2000) refer to the writings of Quinn et al (1996), Michalisn et al (1997), and Davenport et al (1998) when questioning the strategic importance of tacit knowledge. They hold that because tacit knowledge resides within an individual, it is lost when that individual leaves the organisation. Furthermore, because that tacit knowledge can be converted to explicit knowledge (or not, depending on which academic viewpoint is taken), it then becomes liable to acquisition by other companies, thus reducing its strategic value.

Whether knowledge can be considered a strategic asset or not will be considered irrelevant for the purpose of this report. Any advantage, however small, needs to be utilised when faced with difficult trading conditions and a poor prognosis for the future. This report will examine whether moving several related departments into one open plan office can have beneficial effects for the research company.

Outline of methodology

The research took the form of a longitudinal case study, conducted over some eighteen months. A qualitative research strategy was employed and an inductive stance was adopted.
Three research methods were used – observation, semi-structured interviews and questionnaires. This allowed triangulation to take place and helped cancel out the 'method effect'.
Semi-structured interviews were used for the initial exploratory research to gauge which areas might prove fertile research grounds. Interviews were conducted in the meeting room at the author's place of employment at the start of the research in April 2006.
In the case of observation, the author acted as a complete participant, although the ethical aspect of such research may be called into question in some quarters.
All questionnaire items were measured using a five-point Likert scale and, in an attempt to increase the overall validity of the study, instruments developed by established authors were used as well as the author's own instruments.

The methodology will be discussed in greater detail in chapter 3.

Chapter two – Literature review

This chapter will examine the body of literature currently available and relevant to the area of study.
When considering the research objectives, if knowledge and its transfer are to be considered important in retaining or achieving competitive advantage then what would be the ideal? One concept which has generated some debate is that of the learning organisation.

The learning organisation

Popularised by Senge (1990), the notion of the learning organisation has generated heated debate. Senge (1990) paints a utopian picture of a place where "people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together".
Others are more restrained. Denton (1998) gives an assortment of views ranging from:-
"An organisation which facilitates the learning of all of its members and continuously transforms itself" (Pedler et al, 1988);
to:-
"Organisations are seen as learning by encoding inferences from history into routines that guide behaviour" (Levitt and March, 1988).
This last definition seems worlds apart from Senge's (1990) vision. Argyris and Schon (1978) agree that past successful events will lead to repetitive behaviours which reinforce the "theory of action". However, as pointed out by Hedberg (1981, cited in Hong, 1999), this reinforcing of the theory of action can make it difficult for organisations to 'unlearn' old knowledge and adopt new behaviours. This will actually result in creating barriers to learning and, in particular, the double-loop learning advocated by Argyris and Schon (1978).

There is no widespread agreement as to what the learning organisation is. Additionally there is no concurrence over what the learning entity is within such an organisation. Some see the individual as the learning agent – Senge (1990) believes that "organisations learn only through individuals who learn. Individual learning does not guarantee organisational learning but without it no organisational learning occurs". Others regard the organisation as being akin to a learning superperson (Czarniawska-Joerges, 1994, cited in Ortenblad, 2001). Cook and Yanow (1993, cited in Ortenblad, 2001) dismiss the cognitive approach and see organisational learning as being more cultural, the organisation learning as a collective entity. Whatever the learning entity, one key aspect of the learning organisation is that employees are given responsibility for their own learning (Denton, 1998). Is it realistic to assume that all employees will be avid learners?

Further disputes arise over the wording of the phrase itself. Denton (1998) cites two opposing views. Weick and Westley (1996) see 'organisational learning' as an oxymoron. "To learn is to disorganise and increase variety. To organise is to forget and reduce variety". However, Peters and Waterman (1982) see it as possible to organise and learn simultaneously. They describe one of the characteristics of excellent companies as the possession of "simultaneous loose-tight properties". However, since the publication of their book, some of Peters and Waterman's case companies have fallen from grace. This is what is at the heart of the debate on the usefulness of the organisational learning concept. There appears to be little or no empirical evidence to suggest that any benefits inherent in becoming a learning organisation would be sustainable in the long term.

Also in question is the practicality of being able to achieve the status of a learning organisation. Although Pedler and Aspinwall (1996) describe the idea as "an attractive, if elusive, vision", Gold (1997) quotes Smith and Saint-Onge (1996) in describing it as a journey which is "both difficult and hazardous" whereas Garvin (1993) criticises the concept, arguing that "the topic in large part remains murky, confused and difficult to penetrate" (cited in Denton, 1998).

The learning organisation appears to be a difficult state to achieve. Perhaps it would be more beneficial to study knowledge itself and examine how it is created.

What is knowledge?

Information alone is not knowledge. Bollinger and Smith (2001) define knowledge as "the understanding, awareness, or familiarity acquired through study, investigation, observation, or experience over the course of time. It is an individual's interpretation of information based on personal experiences, skills, and competencies". Interpretation appears an important component in other definitions. Bourdreau and Couillard (1999, cited in Poltis, 2002, 2005) see knowledge as being about internal "meaning structures" in people's minds. Nonaka and Takeuchi (1995, cited in Li and Gao, 2003) take an interpretive stance in defining knowledge as a dynamic human process of justifying personal belief toward the "truth" (believing that there are no whole truths and that all truths are half-truths). Nonaka et al (2000) believe that "knowledge is created through the dynamic interactions among individuals and/or between individuals and their environments" (cited in Augier et al, 2001).

It would appear from the literature that knowledge is, as Nonaka said, created by interactions between individuals and between individuals and their environment. Different versions of knowledge can be created under similar circumstances due to the variation in interpretation applied by different individuals. Context can also shape the final version of knowledge acquired. Augier et al (2001) see contexts as emergent entities, citing other authors who are in agreement. They quote Erickson and Schultz (1997) who state "contexts are not simply given in the physical setting…nor in combinations of personnel…Rather, contexts are constituted by what people (do and where and when they do it)". As McDermott puts it succinctly (1976), 'people in interaction become environments for each other'". This implies that the permutations of different types of knowledge are huge (if the conditions are right for its creation).

Repeated reference is made to the necessity for what Nonaka termed "ba". Augier et al (2001) offer Nonaka and Toyama's (2000) description of "ba" as:
"…"ba" is…an open space where participants with their own contexts can come and go and the shared context (i.e. "ba") can continuously develop".

This concept of “ba” appears similar to Wenger’s (1998) community of practice. Although Augier et al (2001) complain that the definition of “ba” is unclear or ambiguous the author ventures that it can be viewed as the opportunity for knowledge creation.

Knowledge also comes in different forms.

Types of knowledge – tacit and explicit

Smith (2001) reports that 99% of the work people do is knowledge based and that 90% of an organisation’s knowledge is tacit which contrasts with explicit knowledge which is codified and can be held within various types of media and easily extracted for anyone’s use. Smith (2001) cites Wagner and Sternberg (1987) in claiming that the abilities to acquire and manage tacit knowledge are hallmarks of managerial success. This view is echoed by Laycock (2005) in quoting Buckman (2004) : “Tacit knowledge is the most dynamic asset you have. When you’ve located it, liberated it through effective knowledge-sharing you get huge benefits; improved innovation, better productivity”.

Most authors seem in agreement that tacit knowledge is difficult to share or diffuse. Haldin-Herrgard (2000) draws attention to the factors of time and distance, both of which inhibit effective tacit knowledge transfer. Most modern businesses can devote little time to the reflection needed to achieve tacitness in employees’ knowledge and, as face-to-face interaction is widely accepted as beneficial for the diffusion of tacit knowledge, distance can be an inhibiting factor. When locations are spread internationally the transfer becomes even more difficult as cultural differences come into play, affecting the context and interpretation of knowledge.

Organisational reliance on tacit knowledge is risky (Haldin-Herrgard, 2000) as once employees leave, the knowledge is lost. However, to convert tacit knowledge to an explicit form is also risky as it dilutes its competitive advantage. Difficulties with the transfer also lead to misconceptions. Wenger (1998) highlighted the tension between “process” and “practice” in his study of health claim processing. The “process” was designed by one group of individuals assuming that processing was carried out in a certain way. But the procedures did not sit comfortably with those who had to use them. The concept of Wenger's (1998) communities of practice will be discussed later in more detail.

Given the importance attached to knowledge, it would seem attractive to be able to find ways in which it could be nurtured and directed and the field of knowledge management has grown. However, this is not without problems. Rollinson (2005) points out that attempts to manage knowledge can reduce the emphasis on learning. He also cites Williams (2002) who holds that individuals can guard the valuable personal knowledge or expertise which gives them their market value in order to maintain their worth and avoid redundancy.
Bollinger and Smith (2001) cite Manville and Foote (1996) in suggesting that the term 'knowledge management' implies controlling people, and that if this is the perception adopted by employees, then KM initiatives will fail. They also draw attention to the work of Carayannis (1998) in pointing out that KM technology will be ignored or even subverted if employees are lacking in trust, respect or common goals.
Given this, how successful will attempts at knowledge management be?

For knowledge to be created, whether tacit or explicit, learning needs to be involved.

Learning

All individuals learn although the extent to which each person learns is unique to that individual. Bloom (1956) described six levels at which learning can occur (Rollinson, 2005) and there is no one theory which can account for all types of learning. As Bloom's hierarchy is climbed, more complex learning is involved, progressing from simple rote learning of information to reasoning, recognising underlying logic and creating links between different knowledge items.
Conditioning theory, as with the famous Pavlov's dog, can account for learning up to level 3 on Bloom's scale. Rollinson (2005) explains how behaviourist theories such as this can alter individuals' behaviour patterns at a basic level, eg. Consistent attendance at work, but cannot account for more complex behaviour patterns. Behaviourist theories only recognise behaviours

being modified by external stimuli. Pajares (2002) cites Bandura's response to theories of this type.

For Bandura:

"a theory that denies that thoughts can regulate actions does not lend itself readily to the explanation of complex human behaviour".

"Stimuli influence the likelihood of a behaviour's being performed by virtue of their predictive function, not because the stimuli are automatically connected to responses by their having occurred together" (Bandura, 1977)

Social learning theory, or vicarious learning, first proposed by Miller and Dollard in 1941, holds with the view that much human behaviour is learned through social interaction. Individuals will observe a model's behaviour and the rewards or punishments the model receives after exhibiting that behaviour and may mimic the model's behaviour should a rewarding outcome be anticipated. In the respect that the likelihood of exhibiting a behaviour is linked with potential reward, the motivation to exhibit a behaviour in social learning theory appears to agree with the expectancy and equity theories of motivation.

It should be noted that the observer, although they may have *acquired* the behaviour, may not necessarily, *perform* that behaviour. In order to perform the behaviour, the observer must be able to remember it, be physically and/or intellectually capable of performing it, and also be motivated to exhibit it (normally due to the presence of reinforcement).

Bandura further developed social learning theory, renaming it social cognitive theory. Central to this theory is the notion that individuals possess self-beliefs that allow them a degree of control over their thoughts, feelings and actions, that, "what people think, believe, and feel affects how they behave" (Bandura, 1986, cited in Pajares, 2002). Self-reflection is a dominant component of social cognitive theory. This is the process through which individuals make sense of their experiences, reassess their understanding, and engage in self-evaluation, sometimes resulting in changed behaviours.

Bandura's (1977) concept of self-efficacy is another important component of the theory.

Self-efficacy

Self-efficacy is the degree to which an individual believes they are capable of performing certain behaviours. Perceived self-efficacy can not only influence an individual's choice of activity but can also affect coping efforts during the activity. Those who persist in pursuing subjectively threatening activities (which in actuality are not) will gain corrective experiences which will reinforce the sense of efficacy, thus eliminating defensive behaviour (Bandura, 1977). Those higher in self-efficacy will expend more effort on an activity, be more persistent when faced with difficulties, and exhibit more resilience in the face of adverse conditions. Conversely, those low in self-efficacy will give up at an early opportunity, never increasing their self-efficacy levels even though they may be perfectly capable of achieving a given task. This view would appear to imply that pushing certain individuals beyond their comfort zone will increase self-efficacy and improve performance. However, this will only be true if the individual possesses the skills necessary for task accomplishment. Repeated failures will only serve to reduce or reinforce the current perceived level of self-efficacy.
According to Bandura (1977) self-efficacy is mediated by several factors:

- Performance accomplishments.
- Vicarious experience.
- Verbal persuasion.
- Emotional arousal.

Other authors have further expanded on the vicarious learning aspect of Bandura's theory of self-efficacy. For example, Weiss (1978) in his study of the similarity of work values between superiors and subordinates only found that the similarity of values between successful and competent supervisors and individuals with low self-esteem was significant. For individuals with high self-esteem, the correlation was not significant. However, Weiss also found that where a supervisor displayed consideration behaviours towards subordinates, then modelling of their values would occur, irrespective of the degree of self-efficacy of the observers.

Individuals are unique. As such, they will have different cognitive styles and preferences for a particular learning strategy.

The literature indicates different types of learning. Single-loop learning is the tweaking of current procedures in order to improve outcomes or remedy defective outcomes. In contrast, double-loop learning involves questioning and altering underlying beliefs and concepts ie altering the paradigm. Individuals are normally fairly competent at single-loop learning, but incompetent at double-loop learning (Argyris et al, 1985). Double-loop learning can be uncomfortable as it involves open discussion and leaving oneself open to criticism. Is it likely, therefore, that those individuals likely to be most comfortable in undertaking double-loop learning are also those high in self-efficacy?

Although the usefulness of double-loop learning can be understood intuitively, its practical use has been called into doubt. Henderson (1997) draws attention to March and Olsen's four learning conditions of "role constrained", "audience", "superstitious", and "ambiguous learning. Henderson points out that the efforts poured into removing barriers to learning within organisations can only serve to increase the incidence of these faulty learning conditions. Consequently, attempting to indulge in double-loop learning will never be an effective strategy as these types of dysfunctional learning will always permeate the organisation. Additionally, Addleson (1996) suggests, "Is there not a paradox in a notion of learning that involves using a thought scheme to challenge the way one thinks? Changing one's mind suggests an infinite regress of revising the systems that shape one's conception of systems."

The tendency to marginalise critical thinkers is illustrated by Van Woerkom, Nijhof and Nieuwenhuis (2002). They offer two descriptions of critical thinkers in the Brooks case study of a "Baby Bell" telephone company. Although on the one hand, they are credited with being able to "see the emperor is wearing no clothes", on the other, they are described as "troublemakers". Of course, there is also the issue of time. Critical reflection demands time and this is often in short supply. Indeed, time, or the lack of it, is a repetitive theme in McCracken's (2005) review of managerial barriers to learning. Unfortunately short-termism appears to abound in modern business so the perceived usefulness of double-loop learning is likely to be under estimated.

But is learning an individual or a social phenomenon? The following section will explore this question.

The standard paradigm versus the emerging paradigm

Paul Hagar (Rainbird, Fuller and Munro, 2004) argues for the acceptance of the emerging paradigm of learning. Hagar points out that the standard paradigm implies that learning is a solitary process, the learner is a spectator aloof from the world. Implicit in the standard paradigm is the notion that the best learning consists of abstract ideas that are context independent and transparent to thought. Hagar contrasts this with the type of learning experienced by an apprentice which is typically concrete, context dependent, intuitive and tacit. He also offers Toulmin's (1999) view that the standard paradigm offers 'no convincing account of the relationship between "knowledge" as the possession of individuals and "knowledge" as the collective property of communities of "knowers"' and that the assumption that meaning being established through individual minds does not help to explain the existence of collective knowledge. The standard paradigm does not take context into consideration either. The emerging paradigm sees learning as action in the world, learning changing both the learner and the environment, rather than just the learner (as in the standard paradigm).

That an individual learns is not in doubt. What is questionable is that learning is confined to the individual. Fuller and Unwin (Rainbird, Fuller and Munro, 2004) recognise this but also caution against leaning too much towards individualism or voluntarism in quoting Marx as saying, "Men make their own history, but they do not make it just as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given and transmitted from the past".

The existence of collective knowledge is illustrated by Yanow's study of flute makers (Nicolini, Gherardi and Yanow, 2003). Here, it was observed that no one flute maker could complete an entire flute alone, the whole group was required in order to complete a unit, leading to the inference that the flutemakers held knowledge collectively. Yanow agrees with Gagliardi (1998) in that knowing and learning are attributes of individuals and that the collective dimension can be seen in displays of their individual mastery. Yet, she also draws attention to the manner in which sports teams, groups of musicians or theatre troupes know their "plays" not as individuals but together as collectives. She further emphasises the social dimension by quoting Tsoukas (1996), "Individual knowledge is possible precisely because of the social practices within which individuals engage".

Another view of the interplay between individual and social knowledge is offered by Fuller and Unwin (Rainbird, Fuller and Munro, 2004) in quoting Boreham (2002), "The new idea which the concept of work process knowledge introduced is that workers need to understand not just the technical system they are operating, but the work process in which they themselves are participating – and creating – by way of operating that system. And this involves reconceptualising the worker as a member of a much broader system, where knowledge is partly owned by the individual workers and partly by the organisation." It should also be noted that this appears to reflect Senge's (1990) view that all employees should attempt to become 'systems thinkers'.

Perhaps one of the best known advocates of learning as a socially-based activity is Etienne Wenger. His research into communities of practice has been widely commented on and will be discussed in the following section.

Communities of practice

Wenger (1998) in his study of health claims processors, put forward the idea of communities of practice. He defines practice as, "First and foremost, a process by which we can experience the world and our engagement in it as meaningful." The community's members, "make the job possible by inventing and maintaining ways of squaring institutional demands with the shifting reality of actual situations." In this way members deal with the tension between "process" and "practice". Negotiation of meaning occurs within the practice through interaction, achievement and give-and-take. Wenger describes it as being "at once both historical and dynamic, contextual and unique." Each member of the practice finds a unique place and gains a unique identity. Authors have recognised that communities of practice can be useful vehicles for the transfer of knowledge and can help increase collaboration by providing a context for shared identity (Zarraga-Oberty and Saa-Perez, 2006). Although Wenger does not imply that a work team is a community of practice – the community is defined more by the knowledge than by the task; individuals are pulled into the community by a shared sense of purpose and a need to know what each other knows – other authors (for example, Hildrech et al, 2000; Hutchins, 1995, cited in Zarraga-Oberty and Saa-Perez, 2006) have suggested that work teams can become communities of practice when they develop informal relationships, indulge in face-to-face contact and develop a mutual sense of trust. Although the implication is that all communities of practice are desirable, Wenger does point out that the practice will respond to conditions in ways not determined by the institution. This response will apply equally to what the company wants and also to what it does not want. Importantly, the response is a communal response, even when some members possess more power than others. Additionally, Wenger cautions against romanticising communities of practice, “They can reproduce counterproductive patterns, injustices, prejudices, racism, sexism, and abuses of all kinds. In fact, I would argue that they are the very locus of such reproduction.” Learning within a community of practice occurs through generational encounters and membership is not fixed. Newcomers can be granted peripheral access and will graduate to full membership as they gain competence in the eyes of other members. Conflict will occur within these generational encounters and through this learning will be generated. One important aspect of Wenger’s communities of practice is the notion of brokering. Brokering occurs between a community of practice and the outside, the broker helping to create interaction between different communities. Wenger points out that managers can broker across boundaries between practices and that a good broker can open up new possibilities for meaning, thus facilitating learning. As Wenger puts it, “Learning communities do have a strong core, but they let peripheral and core activities interact, because it is in these interactions that they are likely to find the new experiences and new forms of competence necessary to create new knowledge.” Additionally, once a member of one community it is not necessary or even desirable to remain there. “A learning community must pay attention to the cost of membership and to the blinders it creates, remembering that letting go of one’s identity is both a loss and a liberation” (Wenger, 1998). Although undeniably useful, the actual ability to manipulate communities of practice to meet company goals must be called into question. By Wenger’s admission communities of practice differ from institutions in three respects:-

1. They negotiate their own enterprise, though they may at times construct a conforming response to institutional prescriptions.
2. They arise, evolve, and dissolve according to their own learning, though they may do so in response to institutional events.

3. They shape their own boundaries, though their boundaries may at times happen to be congruent with institutional boundaries

(Wenger, 1998).

Congruence between community and institution is not an issue as it cannot be assumed. Instead, the issue is one of alignment. In this regard the institution must pay attention to the support of practice and avoid the displacement of knowledgeability of practice. This point is illustrated in Wenger's work in the forms the claims processors were given to use. Being designed by those outside of the practice, these forms were difficult to utilise, diminishing the processors' confidence in their ability in some instances.

Although influential, other authors have addressed what they see as short-comings or omissions in Wenger's work. Stephen Billet (Rainbird, Fuller and Munro, 2004) stresses that the practice does not wholly determine engagement and what is learnt. Rather, the individual determines their level of participation and what they construe and learn from their experience. Billet cites Valsiner (1994) in saying that rather than being uni-directional, the knowledge is co-constructed via interactions between the practice and the individuals participating in learning. Billet draws attention to Somerville's (2002) view that individuals are not passive either in their participation and learning or in the construction of their occupational identities. The individual's agency determines this. As individuals' ontogenies are unique, each individual's engagement in and learning through work will always be unique in one way or another. Not only will negotiation occur between the workplace's norms and practices but also between the individual's subjectivities and identities (Valsiner, 2000, cited by Billet). In Billet's view, alignment will not ever be perfect – tensions will always exist between the goals of enterprise and the individual.

In the light of the preceding discussion, it seems reasonable to assume that learning is both an individual and a social phenomenon. If social, then what of the groups within which learning occurs?

Work groups

"Many studies have demonstrated that the tightly knit, cohesive work group may, under proper conditions, be far more effective than an equal number of separate individuals in achieving organisational goals. Yet management, fearing group hostility to its own objectives, often goes to considerable lengths to control and direct human efforts in ways that are inimical to the natural groupiness of human beings. When man's social needs… are thus thwarted, he tends to behave in ways which seek to defeat organisational objectives. He becomes resistant, antagonistic, uncooperative." (McGregor, 1960 cited in Haslam, 2004).

The importance of work groups is illustrated by the above quote. If cohesive groups can produce higher quality work than individuals, and if learning can also occur within them, then surely they are desirable?

However, cohesion can be problematic as shown by the concept of groupthink (Janis, 1982, cited in Haslam, 2004). Although widely criticised, the notion of groupthink persists. Turner and Pratkanis (1994, 1998 cited in Haslam, 2004) proposed a social identity model of groupthink. In this model the role of perceived or actual threat from an outgroup is seen as pivotal. In such a situation, pressure on the ingroup to maintain its positive self-image 'at all costs' is heightened. Interestingly, Turner et al (1992) found that the quality of group decisions was not so poor when the existence of a threatening situation was accompanied by an excuse for failure. Janis proposed that a remedy for a groupthink situation would be to reduce the level of social identity salience (and so reduce cohesion). However, as Turner and Pratkanis observed, salience is actually likely to be heightened should, for example, the monitors or devil's advocates introduced into a group in an attempt to ameliorate groupthink be perceived by its members as outgroup agents. This was clearly seen in a recent reality TV show, "The Island" (channel 4, 2006) where one competitor defected to a rival island with the intention of disrupting the group and recruiting members for his own 'ingroup'. His efforts failed. He was recognised as an outgroup agent and his actions served to increase the cohesiveness of the group he had sought to break up.

Other researchers have examined aspects of the groupthink concept, Hog and Hains (1998) found that group cohesiveness was social rather than personal in nature and that groupthink is a phenomenon derived from a group-based definition of self.

Haslam (2004) summarises groupthink with a quote from Whyte (1993):

‘Groups may perform better than individuals on some tasks, but decision making in escalating situations is apparently not one of them.’
Perhaps, in high threat situations, strong leadership might be a preferable option to group-based consensus?

Other theories of decision making within groups have been proposed. Amongst these is the persuasive arguments theory. This has been challenged on the grounds that polarisation can occur without the presentation of arguments. For example, Cotton and Baron (1980 cited in Haslam, 2004) found that polarisation occurred by simply making individuals aware of the other (ingroup) members’ positions. Additionally, some polarisation can also be accompanied by a degree of convergence (Turner, 1991 cited in Haslam, 2004). This conflicts with theories advanced by social comparison theorists who hold that extremitisation will result when individual group members discover that other group members hold the same views as themselves. Haslam (2004) sees the main problem with both the persuasive arguments and social comparison theories as being the individual emphasis leading to the neglect of the psychological properties of group decisions as social products. Haslam (2004) draws attention to one particularly interesting study by Lewin (1960) into changing the health and dietary habits of Americans. Lewin found that the greatest acceptance of information was achieved in the group situation. He had already explained this earlier (1956) in the following way:
‘Both the mass approach and the individual approach place the individual in a quasi-private, psychologically isolated situation with himself and his own ideas. Although he may, physically, be part of a group listening to a lecture, he finds himself in an ‘individual situation’ psychologically speaking’.
In individual situations like this:-
‘The degree of eagerness (to go along with the message) varies greatly with the personal preference…(But) in the case of the group decision the eagerness seems to be relatively independent of personal preference; the individual seems mainly to act as a ‘group member’’. (Haslam, 2004).
Individual agency has already been touched upon earlier – the degree to which an individual desires to learn being related to their agency. Is this implying that involving an individual within

a group can actually entice them to learn something that they would have no desire to in a purely individualistic situation?

Clearly the workgroup is a complex structure. It can produce higher quality work than individuals but, under conditions of threat to its self-image, it can arrive at poor quality decisions in an attempt to preserve this self-image. However, if the author's interpretation of Lewin's work is correct, it can also side-step the issue of individual agency, enticing an individual to learn in a group environment whereas they may not have been inclined to if left to their own devices.

To work within a group interpersonal communication must be possible. The following section will examine the field of communication.

Communication

Is all information good information? Is it a case of more is more or more is less? Given the nature of modern business, the latter may be more applicable. Open systems theory (Katz and Khan, 1966, cited in Haslam, 2004) suggests that free and frequent transfer of information can lead to Babel-like pandemonium and many modern managers can identify with the problem of opening their e-mail system and discovering a sea of messages. Central to Katz and Khan's view is the concept of 'coding categories' relevant to the different subsystems of an organisation. These coding categories serve to 'impose omission, selection, refinement, elaboration, distortion, and transformation upon the incoming information.'
'All members of an organisation are affected by the fact that they occupy a common organisational space in contrast to those who are not members. By passing the boundary and becoming a functioning member of the organisation, the person takes on some of the coding system of the organisation, since he accepts some of its norms and values, absorbs some of its subculture, and develops shared expectations and values with other members. The boundary condition is thus responsible for the dilemma that the person within the system cannot perceive things and communicate about them in the same way that an outsider would' (Katz and Khan, 1966 cited in Haslam 2004).

Roberts et al (1974) point out that open systems theory ‘is constructed at such an abstract level that it is difficult to reduce its principles to testable hypothesis’ (Haslam, 2004). However, the theory does help illustrate how cognitive processes can lead to communication error and misunderstanding. In particular, Katz and Khan argue that information overload is reduced by subsystems but, in the process, this leads to omissions, transmission errors and delays, filtering, oversimplification, use of multiple communication channels, or communication avoidance (Haslam, 2004). The problem of overload was also examined by Finholt and Sproull (1990, cited in Rollinson, 2005) who found that individuals, when faced with too much information, tend to ration their attention leading to important information being overlooked or some messages being ignored completely. This is in line with Katz and Khan’s findings. Although Hsia (1977, cited in Rollinson 2005) advocates the use of multiple channels allowing the use of redundancy in order to ensure that the message is received with its meaning intact, it would appear from the previous arguments that this can only contribute towards overload. Additionally, research has shown that verbal communication is much richer than the written form. Although this can have advantages, there can also be a clash between what is said and the speaker’s non-verbal clues. Perhaps the lesson here is to only verbally and visually communicate information which one believes in, particularly as when a clash exists between verbal and non-verbal cues it is the non-verbal message which is taken as being the factual one (Eckman and Friesen, 1975 cited in Rollinson 2005).

Within groups, it has been found that a preference exists for exchanging material common to all group members (Haslam, 2004). Wittenbaum and Stasser (1996) propose that this may be because it has a positive motivational impact on the group, increasing commitment and self-assurance (Haslam, 2004). It has been found that sharing of common information occurs in the early stages of group formation, being a means of demonstrating what ‘we’ have in common, or, as Levine and Moreland (1991) put it, a shared mental model of ‘us’ (Haslam, 2004). As the group matures, the need to share common information is relaxed and more unique information comes to the fore (for example, Larson et al’s (1996) study of medical practitioners (cited in Haslam, 2004)). Other research suggests that groups prefer to share information that they already know and which is in agreement with the group’s norms and values rather than information which is new, or perhaps disturbing (Stasser and Titus, 1985, 1987 cited in Haslam

2004). This gives a poor prognosis for learning within groups. How can learning occur if the only information discussed is that which is already known? Double-loop learning will definitely be unachievable if uncomfortable or threatening information is avoided. For this reason, research has identified several ways in which these tendencies can be avoided such as critical leadership, assignment of expert roles, and notification as to the whereabouts of unique information, although researchers often concur that the possibility of such avoidance is low (Haslam, 2004).

But what creates the desire to communicate? Social identity theory proposes that those who share a particular social identity will be motivated to communicate. Conversely, those who do not share a particular social identity will not be motivated. Additionally, the absence of a shared cognitive framework will give rise to a greater likelihood of miscommunication and misunderstanding. Competitive relations will further reduce the desire to communicate with an 'outgroup'. In Agama's (1997) study of 'Airsafe' competition between different groups actually resulted in an overall tendency to reduce communication. Participants spoke less to both members of the ingroup and outgroup (Haslam, 2004). Competition is sometimes used as a means of increasing the performance of workgroups. This study would appear to indicate that this can be counter-productive.

And, finally, what of leadership within groups? Is leadership within a team environment any different to leadership in other contexts?

Leadership

Views on the concept of leadership have varied widely over the years. Indeed, Dulewicz and Higgs (2005) conclude from reviewing the works of Goffee and Jones (2000), Gill (2001), Higgs (2003) and Higgs and Rowland (2003) that, "From the leadership literature there is an emerging consensus that there is no single prescription for effective performance". That leadership is important is not in doubt. Smith and Cooper (1994) quoted several authors in order to illustrate this point. Thorlindsson (1988) found that the leadership characteristics of individual fishing ship skippers accounted for between 35% and 49% of the variation of the catch. Likewise, Thomas (1988) and Day and Lord (1988) postulate that alterations in the top tiers of the management of UK retail stores and that executive management account for more than 60% of the variance in profit and sales of stores and can explain up to 45% of an organisation's performance respectively. Only the concepts of self and shared leadership will be examined here as these appear most relevant when considering leadership within a fairly autonomous team environment.

Self-leadership first emerged in the mid 1980s under the authorship of various combinations of Manz, Sims and Neck. It is a self-influence process through which the individual is able to perform using self-direction and self-motivation. Various behavioural and cognitive strategies are employed in order to achieve personal effectiveness. These strategies are normally segregated into the three sub-groups of behaviour-focused, natural reward and constructive thought pattern strategies. However, use of these strategies to excess is to be avoided as cautioned by Manz and Sims (2001, cited in Neck and Houghton (2006)). The use of self-punishment and self-criticism to a high degree and the resulting guilt it is likely to cause is hardly likely to be conducive to high performance. Although fairly well documented, there have been several criticisms of the theory. Neck and Houghton (2006) draw attention to the lack of a large number of empirical studies in organisational settings but counter that this may be due to the lack of a valid self-leadership measurement scale. Additionally, they refute the argument that many theorists have forwarded that self-leadership is not a unique and distinguishable construct and is merely a repackaging exercise by pointing out that self-leadership is a normative model rather than a descriptive or deductive theory. In self-leadership's defence Neck and Houghton (2006) emphasise how the use of behaviour-focused strategies can enhance both self-awareness and self-focus, citing Carver (1975) and Wicklund and Duval's (1971) findings that increases in self-focus can lead to an increase in task-focus and, ultimately, improvements in task performance. Neck and Houghton (2006) also draw on research by Neck and Manz (1996) and Prussia et al (1998) in suggesting that self-leadership strategies such as positive self-talk and mental imagery may help to enhance self-efficacy. This is a view expressed in Bligh, Pearce and Kohles' (2006) paper in which they cite Houghton et al (2003), "substantial empirical evidence supports the effectiveness of self-leadership strategies in increasing self-efficacy perceptions". Neck and Houghton (2006) conclude that self-efficacy may be the primary mechanism through which self-leadership strategies can affect performance and that those indulging in self-leadership display other favourable outcomes such as increased commitment and independence due to the sense of ownership which individuals may develop over their tasks. They go on to suggest that increased independence will manifest in higher levels of independence in both behaviour and decision making. This would be useful within a self-managing team with no formal leader and they suggest that individuals not practising self-leadership may depend too much on their leaders to guide their actions and thus become less capable of independent thought and action. Neck and Houghton (2006) do also point out that these claims have not yet been substantiated through any empirical examinations. Other authors have also found benefits related to self-leadership. Poltis (2006) found that behavioural-focused strategies could explain over 29% and 30% of the variance of intrinsic and extrinsic job satisfaction respectively, and Diliello and Houghton (2006) view self-leadership as a tool capable of building a social and psychological climate conducive to creative problem solving (note the parallel here to Nonaka's concept of "Ba").

That self-leadership removes the need for a traditional leader is an attractive proposition. No one person exists who is capable of doing everything and the average leader has limited personal resources. The likelihood of self-leadership occurring can be increased by both the leader's efforts to empower employees and also by the latent personality trait of need for autonomy. Conversely, overly directive leadership can suppress self-leadership in those high on need for autonomy (Yun, Cox and Sims, 2006). However, no matter how attractive the concept appears when considering the team environment, Bligh, Pearce and Kohles (2006) point out that self-leadership is an individualistic concept and lacks team focus. They caution that teams which rely on self-leadership should also employ team and organisational incentives to encourage team building and also emphasise the importance of team rather than individual achievements in order to offset its individualistic orientation.

Shared leadership involves distributing leadership among a set of individuals, the leader of the moment being the individual most suitable for the job at hand. In this context, shared leadership has similarities with situational leadership. It appears an attractive proposition but suffers from the effects of human nature. The reality of shared leadership may be unattainable. Some individuals may want the status associated with being the leader, others may not. Additionally, some may better fit the prototype of leader than others (Seers, Keller and Wilkerson). Although Pearce and Sims (2002, cited in Fletcher and Kaufer) found evidence of more vertical than shared leadership in low performing teams and more shared than vertical leadership in high performing teams, Neubert (1999 cited in Seers, Keller and Wilkerson) found that leadership dispersion correlated with team cohesion but was not significantly correlated with performance. This could be explained by Seers et al's observation that "individuals who verbalise more most often emerge as leaders", implying that it is those who are the most vocal and not the most capable or knowledgeable who fall into the leadership role.

In conclusion, shared leadership, though an admirable concept, is not a reliable form of leadership given the human condition.

From a social identity point of view who should be leader? According to Hollander (1964, cited in Haslam) "It is therefore important that the leader, by his (or her) behaviour, manifest a loyalty to the needs and aspirations of group members. These things must matter to him (or her) in ways that are accessible to view because such evidences of good faith and sincere interest serve to elicit greater acceptance of influence". This, according to Platow and van Knippenberg (2001, cited in Haslam) is moreso in the case of the aprototypical leader. According to these authors, the prototypical leader can lead in whichever way they see fit as their characteristics are so strongly representative of the group's norms and values that shortcomings are glossed over. Conversely, the aprototypical leader needs to act in ways which prove their ingroup status. According to social identity theory, leaders in a tenuous position can strengthen their power by displaying hostility towards an outgroup. This is a tried and trusted method amongst political leaders as pointed out by Brown (1988, cited in Haslam). Remember Margaret Thatcher and the Falklands conflict? Generally speaking, the preferred leader is that most capable of differentiating between the ingroup and outgroup to the benefit of the ingroup (eg. Duck, 1998, cited in Haslam). This helps explain why Thatcher's strategy was so successful at a time when her popularity was waning. Additionally, a leader should be fair (although the definition of fair differs depending on whether it refers to the ingroup or the outgroup). As fairness serves as an indicator of the worthiness of an individual, leaders who are distributively and procedurally fair within an intragroup context will strengthen their position (Tyler, 1994; Tyler and Degoey, 1995, cited in Haslam, 2004). However, in an intergroup context group members will tend to prefer leaders who favour the ingroup, being procedurally and distributively unfair (Platow et al, 1997, cited in Haslam, 2004).

In marrying self-leadership with social identity theory, the leader who is more empowering and supportive of individuals, allowing them to grow their self-leadership skills would appear to be the most prototypical leader whereas the directive leader, who suppresses individuals' need for autonomy, would appear to be the most aprototypical and least desired leader.

Chapter three – Methodology

One of the central issues of epistemology is whether the social world can or should be studied using the same principles and procedures as the natural sciences. The epistemological position of positivism affirms that this is possible. However, the author rejects this stance and adopts that of interpretivism. Proponents of interpretivism state that the social sciences are greatly different to the natural sciences and therefore require research procedures that reflect the distinctiveness of humans as against the natural order (Bryman and Bell, 2007).

Phenomenology is an anti-positivist tradition associated with the interpretivist stance and its application to the social sciences has been mainly credited to the work of Alfred Schultz. Schultz was influenced by phenomenological philosophers such as Husserl and, in particular, by Weber's concept of *Verstehen*. Bryman and Bell (2007) quote the following passage from Schultz's work:-

"The world of nature as explored by the natural scientists does not 'mean' anything to molecules, atoms and electrons. But the observational field of the social scientist – social reality – has a specific meaning and relevance structure for the beings living, acting, and thinking within it. By a series of common-sense constructs they have pre-selected and pre-interpreted this world which they experience as the reality of their daily lives. It is these thought objects of theirs which determine their behaviour by motivating it. The thought objects constructed by the social scientists, in order to grasp this social reality, have to be founded on the thought objects constructed by the common-sense thinking of men (and women!) living their daily life within the social world" (Schultz, 1962).

Within his words, Schultz is highlighting the difference between the natural and social sciences and that the social sciences require an epistemology which takes this fact into consideration. The social reality of human beings and the meaningfulness of human action is particularly emphasised by phenomenology.

"The phenomenologist views human behaviour…as a product of how people interpret the world…In order to grasp the meanings of that person's behaviour, *the phenomenologist attempts to see things from that person's point of view"* (Bogdan and Taylor, 1975, cited in Bryman and Bell (2007).

Another consideration within research philosophy is whether social entities should be considered objective entities with a reality external to social actors, or should they be seen as social constructions generated from the perceptions and actions of social actors? These are the positions of objectivism and constructivism and the author adopts the latter. If the epistemology of interpretivism is adopted which holds the social sciences as being particularly distinct from the natural sciences and if a phenomenological approach is used which is concerned with the way in which humans make sense of their reality, attaching meaning to the actions of themselves and others, then nothing other than a position of constructivism can be used. From this standpoint, social phenomena is not only produced through social interaction but they are also in a constant state of revision – action gives rise to interpretation which gives rise to more action and more interpretation and so on.

Research strategy

The research undertaken by the author was qualitative in nature. Have (2004) quotes Ragin (1994) when explaining the difference between qualitative and quantitative research :-
"most quantitative data techniques are *data condensers*" and "qualitative methods, by contrast, are best understood as *data enhancers*"
Have (2004) considers the crucial feature of qualitative research is to "'work up' one's research materials to search for hidden meanings, non-obvious features, multiple interpretations, implied connotations, unheard voices". In essence, qualitative research "offers complex descriptions and tries to explicate webs of meaning". This illustrates the socially constructed nature of reality. Denzin and Lincoln (2003) concur and describe how the qualitative researcher examine *how* social experience is created and given meaning whereas the quantitative studies concentrate on the measurement and analysis of causal relationships between variables, and not processes. Denzin and Lincoln (2003) further draw on the work of Flick (1998) to illustrate the difference between the two strategies. Flick (1998) describes how the quantitative approach has been used for the purposes of isolating "causes and effects…operationalising theoretical relations…(and) measuring and…quantifying phenomena…allowing for the generalisation of findings". However, "rapid social change and the resulting diversification of life worlds are increasingly confronting social researchers with new social contexts and perspectives…traditional deductive

methodologies…are failing…thus research is increasingly forced to make use of inductive strategies instead of starting from theories and testing them…knowledge and practice are studied as local knowledge and practice".

Flick's observation that the social arena is rapidly changing helps to moderate the usual criticism of qualitative research in that it is difficult to generalise from the findings of such research. After all, if conditions change over a period of time then the value of the ability to generalise is diminished.

Deduction or Induction?

Deductive research is a fairly linear process which takes a theory, formulates a hypothesis, collects data, and produces findings which lead to confirming or rejecting the hypothesis to revision of theory. This last phase, the revision of theory, is an inductive step which allows the researcher to consider the implications of their findings on the theory they started with. In this way, theory may or may not be modified by the use of deductive research. However, an inductive strategy attempts to produce theory as an outcome and the strategy is typical of qualitative research. An inductive strategy can help avoid the research being constrained by adhering rigidly to established theories and was the strategy selected by the author. From a purist standpoint, using an inductive strategy, such as with grounded theory (originated by Glaser and Strauss), expects the researcher to begin without any fixed ideas about their research and thus prohibits a literature review of the subject. In practice, this extreme view is rarely adopted and the author followed the advice of Saunders, Lewis and Thornhill (2003), examining a large body of literature in order to achieve a competent level of knowledge about the subject area. This literature review was not intended to generate any fixed ideas, rather to provide a place for the researcher to start. Apart from the appeal of the lack of constraint mentioned earlier, induction is better suited to qualitative research than deduction. And if the social world is forever changing as described by Flick (1998) then it appears pointless to test a hypothesis based on an established theory as that theory may become obsolete. Induction offers an opportunity to examine social interactions and, possibly (but not always) generate new theory.

Research design

The study originally intended to examine whether an open plan office would prove more beneficial to working than the previous method of individuals working within separate 'functional silos'.

On examining the literature, the author formulated an opinion that most research was confined within the limits of individual constructs. Therefore, a decision was taken to attempt to conduct a more holistic type of research. In particular, using the lens of social identity theory to try to explain the social phenomena observed.

The research setting was a recently set-up open plan office within a manufacturing company. This is the author's place of employment and the author resides in the office along with ten other colleagues. These ten colleagues were the population selected for investigation. The colleagues consist of one works manager, one senior manager, four middle managers and four staff. There are four females and six males in the office. Due to the small size of the population, sampling was not used.

The research took the form of a case study. Although it was originally intended to make this a cross-sectional case study as the anticipated period of study was around six months, circumstances dictated that the research extended over a two year period, transforming the study into a more longitudinal form. Bryman and Bell (2007) cite Pettigrew's (1990) view of the importance of longitudinal design in facilitating deeper understanding of organisations and the mechanisms and processes through which changes are created. Time and cost constraints generally preclude longitudinal studies within business and management research so it was perhaps fortuitous that circumstances dictated that such a design was possible.

Although an issue of case studies is the lack of ability to generalise it was felt that this research would be more valuable to the author's company than any other which was considered at the time.

Methods

Three research methods were used – observation, semi-structured interviews and questionnaires. This allowed triangulation to take place and helped cancel out the 'method effect'. Triangulation can help avoid type three errors (ie. Asking the wrong question) which can be the source of most validity errors. Webb et al (1966, cited in Kirk and Miller, 1986) say:-

"The most fertile search for validity comes from a combined series of difference measures, each with its own idiosyncratic weaknesses, each pointed to a single hypothesis. When a hypothesis can survive the confrontation of a series of complementary methods of testing, it contains a degree of validity unattainable by one tested within the more constricted framework of a single method".

This quote can also be used to argue the case for qualitative research in that the more diffuse and less focused the method, the wider net it casts (Kirk and Miller, 1986).

The methods used will be discussed in the following section.

Instrumentation and administration

a). Semi-structured interviews

Semi-structured interviews were used for the initial exploratory research to gauge which areas might prove fertile research grounds. Interviews were conducted in the meeting room at the author's place of employment at the start of the research in April 2006.

b). Observation

In the case of observation, the author acted as a complete participant. This, of course, had ethical implications by not revealing to the participants that they were being observed. The decision was taken because it could not be seen that participants would be unduly harmed by not giving their informed consent and the author drew on the views of established authors in order to justify this tactic. For example, Jack Douglas believes that the researcher is "entitled and indeed compelled to adopt covert methods, in order to achieve the higher objective of scientific truth" (Douglas, 1979, cited in Bailey, 1999). Also cited by Bailey (1999) is Gans (1962):

“If the researcher is completely honest with people about his activities, they will try to hide actions and attitudes they consider undesirable, and so will be dishonest. Consequently the researcher must be dishonest to get honest data”.

However, in hindsight, because the research eventually took two years to complete, it may have been more ethical to act as a participant observer as any effects due to reactivity would have been likely to reduce due to habituation.

As the author was present in the office there were ample opportunities to gather field notes. The act of note taking was not transparent to the participants as the author is a regular computer user and all notes were recorded at the time of observation via the keyboard.

As advised by Saunders, Lewis and Thornhill (2003) using observation should increase the ecological validity of the study and the fact that the research took place over a two year period should reduce the reliability threats of history and maturation.

c), Questionnaires

All questionnaire items were measured using a five-point Likert scale.

Organisational self-esteem was measured using just one item which asked how well the participants felt each of their colleagues rated their ability to carry out their job. This item was measured on a five-pint Likert scale: 1=definitely not true, 2=not true, 3=neither true nor untrue, 4=true, 5=definitely true.

Task interdependence was measured using three items:

1. I deal with XXX frequently when carrying out my job.
2. How well XXX performs his/her job affects how well I can perform my job.
3. If XXX had too much work to do then I would help him/her out.

Again, this item was measured on a five-pint Likert scale: 1=definitely not true, 2=not true, 3=neither true nor untrue, 4=true, 5=definitely true.

In an attempt to increase the overall validity of the questionnaires, in addition to the author’s own compilations, instruments developed by published authors were also used.

Type of leadership (directive or empowering) was measured using Yun, Cox and Sims’ (2006) shortened version of the Leadership Strategies questionnaire II (Cox and Sims, 1996). Yun, Cox and Sims (2006) took six items each for both empowering and directive leadership:

Directive:-

1. When it comes to my work, he/she gives me instructions on how to carry it out.
2. He/she provides commands in regard to my job
3. He/she gives me instructions about how to do my job.
4. He/she establishes my goals for me.
5. He/she establishes my performance goals.
6. He/she establishes the goals for my work.

Empowering:-

1. He/she urges me to assume responsibilities on my own.
2. He/she advises me to solve problems without always getting his/her stamp of approval
3. He/she encourages me to search for solutions to my problems on the job without his/her supervision
4. He/she encourages me to find solutions to my problems at work without his/her direct input.
5. He/she encourages me to work together with other managers/supervisors who report to him/her.
6. He/she advises me to coordinate my efforts with other managers/supervisors who report to him/her.

These items were measured on a five-point Likert scale: 1=definitely not true, 2=not true, 3=neither true nor untrue, 4=true, 5=definitely true.

Yun, Cox and Sims' (2006) instrument for testing need for autonomy was also adopted. This instrument consists of six items :-

1. I solve problems when they pop up without always getting my supervisor's stamp of approval.
2. I search for solutions to my problems on the job without supervision.
3. I find solutions to my problems at work without seeking my supervisor's direct input.
4. I assume responsibilities on my own.
5. I solve my own problems without being dependant on solutions from my supervisor/manager.

6. I take initiatives on my own.

This item was measured on a five-pint Likert scale: 1=definitely not true, 2=not true, 3=neither true nor untrue, 4=true, 5=definitely true.

Self-leadership utilised Houghton and Neck's (2002) instrument which they adapted from earlier work by Anderson and Prussia (1997) and Cox (1993). Houghton and Neck (2002) named this instrument the revised self-leadership questionnaire (RSLQ). The measures both the behaviour (five sub-scales) and the natural rewards (three sub-scales) dimensions of self-leadership. All items were randomised within the questionnaire.

The behaviour dimension is represented by the following sub-scales :-

1. Self-goal setting (five items)
2. Self-reward (three items)
3. Self-punishment (four items)
4. self-observation (four items
5. Self-cueing (two items)

The natural rewards dimension is represented by the following sub-scales :-

1. Visualising successful performance (five items)
2. Self-talk (three items)
3. Evaluating beliefs and assumptions (four items)

All items will not be listed here but can be seen in the appendices.

As before, these items were measured on a five-point Likert scale: 1=definitely not true, 2=not true, 3=neither true nor untrue, 4=true, 5=definitely true.

Other established instruments were also used (Learning styles were identified using the North Carolina University's web based test and the degree of reflective behaviour and the degree of political skills were assessed using West's (1996) and Ferris et al's (1996) instrument (cited in Ahearn et al ,2004) respectively) but they will not be discussed here as they were not relevant to the final area of study used in this research.

Administration of instruments

a). Semi-structured interviews

As previously mentioned, the interviews were conducted at the start of the research process in order to gauge which areas might prove beneficial to research.

The author spoke to all participants requesting their attendance at an interview at their convenience. At the start of the interview, participants were asked if they would consent to the interview being recorded using a small digital recorder as this would help the interview flow more smoothly, allow accurate recording of any data and would also shorten the amount of time it would take to complete the interview. All participants were assured that the recordings would be erased after the interview had been transcribed. The interviewees were given full control of the recorder and told they could switch it off at any time.

As the author had worked closely with the participants for a considerable period of time it was felt that she could recognise inaccurate information. This follows the comment by Healy and Rawlinson (1994, cited in Saunders, Lewis and Thornhill, 2003) that "A well informed interviewer has a basis for assessing the accuracy of some of the information offered". However, the author also had to bear in mind the preconceptions she might hold that could threat the reliability of the data recorded at the interview due to this familiarity.

In line with Saunders, Lewis and Thornhill's (2003) recommendations, an open posture and an interested tone was adopted throughout the interview and every effort was made to remain neutral throughout the duration.

All interviews were transcribed within twenty four hours in order to retain accuracy as recommended by Saunders, Lewis and Thornhill (2003).

b). Observation

Observations began at the start of the research in April 2006 and continued right through until October 2008. All observations were conducted within the open plan office. Field notes were gathered immediately as and when interesting events occurred and recorded on the author's desktop.

c). Questionnaires

Questionnaires were administered twice during the study. Once at the start of the study in April 2006 and again at the conclusion of the study in October 2008.

All questionnaires were pilot tested. Although the general recommendations are for piloting within the population to be tested, due to the envisaged lack of time and the small population size (the author did not want to "waste" any of the participants by using them in the pilot), the questionnaires were piloted amongst several of the author's friends instead. The questionnaires were then refined in line with comments received. Although this method of piloting is not ideal, it does, at least, allow the testing of the face validity of each questionnaire.

All questionnaires were self-administered as it has been suggested that respondents to this type of questionnaire are less likely to be susceptible to social acceptability bias (Dillman, 2000 cited in Saunders, Lewis and Thornhill (2003)..

A questionnaire pack was given to each of the participants at the start of the study in April 2006 and then again in October 2008. At both times the participants were asked to fill in the questionnaires at their leisure but given a deadline two weeks later. Gentle reminders were issued out one week after distributing the questionnaires.

The results of all questionnaires were recorded in an Excel spreadsheet in order to allow easy manipulation and analysis of the data. The 2006 results were compared with the 2008 results in an attempt to gauge if anything had changed during the study period.

Chapter four – Findings and analysis

This chapter will attempt to analysis the findings gleaned from the study, taking the findings of established authors in several different areas and viewing them through the lens of social identity theory. Within this chapter the author analyses the social workings of the open plan office and considers whether the environment has produced beneficial or detrimental outcomes and what could be the possible reasons for this. These findings are specific to the studied company and the author does not, in any way, consider that they could be generalised to other companies without a great deal more supportive research. Nevertheless, several areas could prove worthwhile of further investigation.

Does being placed within a group guarantee membership of the group? The case of the new employees

> *"The office consists of several subgroups – planning (five members), purchasing (one member), upholstery (two members), the works manager (who was over the upholstery section prior to being promoted to works manager), and the engineering manager. Before being moved into the office all of the subgroups were housed in separate areas. Although the works manager is the most senior person in the office, she only has responsibility for the purchasing and upholstery subgroups. Planning has its own manager who reports directly to the operations director, as does the works manager and the engineering manager.*
> *During the course of the study, two new members entered the group. Karen was recruited at managerial level to run the offshore sewing operation in Rumania and Mark was taken on at clerical level to provide additional administration support to the planning function.*
>
> *In its initial stages the offshore sewing operation proved extremely problematic. Quality was poor and deliveries were often late or incorrect. This had a detrimental effect on the output of the upholstery section and there were frequent arguments about this between Carole and Karen. Carole would often complain to*

Karen about the Rumanian company's performance but Karen would not accept criticism from Carole. In a similar vein, Chris, the upholstery quality manager, often brought up quality issues with Karen but she would not accept his views and virtually every observed interaction between these two individuals culminated in an acrimonious exchange. Whenever Karen was out of the office Chris would refer to her as "that stroppy bitch" or something similar.
During the course of the study the works manager arranged several social events to which all group members were invited. Mark attended all of them but Karen avoided all of them apart from one Christmas party. She brought her partner to the party and spent the evening with him rather than with her work colleagues.

The other new member, Mark, was very quiet initially. He made mistakes whilst he was training but always apologised to those affected by them. As time progressed he became more outgoing and indulged in banter with the more senior members of the office, frequently making fairly cheeky comments which did not appear to cause offence. Karen, on the other hand, appeared to become more and more alienated from the group. This eventually culminated in her moving out of the office around twelve months later in order to move to the Deeside site citing her reasons for moving to the operations director as "nobody likes me here"."

Social identity theory, social learning theory and the theory of communities of practice could be drawn on here to explain how Karen and Mark fared differently when they joined the group. Karen had a very strong personality. She had previously held senior management positions at several other companies and the Rumanian company she ran had been owned by her prior to being purchased by Company A after it fell into bankruptcy. She did not appear to feel the need to conform within the group. In contrast, Mark was a first time employee with no experience of the workplace. Perhaps it is no surprise that Mark conformed more readily than Karen.

It could be expected that Mark would have a lower degree of organisational self-efficacy than would Karen. Bandura proposed that individuals with low esteem are generally less inclined to rely on their own reactions in ambiguous situations and are more likely to imitate others. Conversely, individuals with high self-esteem and more confidence in their own reactions, are less likely to be influenced by models (Weiss, 1978). This process of modelling could be interpreted as conformance by the group's members as the individual exhibiting modelling would be more likely to be showing behaviours most commonly carried out by group members. Karen could also have been exhibiting modelling but she could have been drawing on past experiences external to the office. Consequently, her behaviour could have appeared non-conformist to the group members.

From a social identity standpoint, Karen obviously considered group boundaries to be permeable. She did not consider it necessary to become a permanent member of the group if she saw the group as undesirable. Haslam (2004) drew on work from Rao, Davis and Ward (2000) and Boen and Vansbeselaere (2000, 2002) when he explained how an individual would disassociate themselves from other ingroup members in favour of working towards improving their own personal outcomes by defecting to what they see as a higher status outgroup.

Not only did Carole and Chris keep Karen on the periphery of the community pending proof of her abilities before allowing her to become a fully fledged member as predicted by Wenger (1998) but the problems caused by the Romanian company's shortcomings threatened their sense of self identity as it made their goals more difficult to achieve. If the upholstery department failed in its goals then this would have a knock-on effect for planning and purchasing. If upholstery could not adhere to the prescribed plans then the raw materials stocks and the following week's plans would need to be amended to compensate for any failures in the current week. This made Karen an atypical group member in the eyes of all of the group members.

Although, to an outsider, the group's view of Karen might seem a little disproportionate to the "sins" she committed against the group, studies have shown that deviant group members are often judged more harshly than outgroup members (Margues and Yzerbyt, 1988, cited in Wellen and Neale (2006). This "black sheep" effect occurs because deviant members are seen to threaten the group's identity and group norms and, in order to protect the group's collective self-image, the "black sheep" is alienated from the rest of the group. One worrying aspect of Wellen and Neale's (2006) study is their conclusion that the presence of even one deviant can lower levels of perceived task cohesion and may threaten how committed members are to achieving group goals.

Given Karen's view that boundaries were permeable and the other group members' views that she was compromising the group, it is perhaps no surprise that she left.

Does the office environment help mediate deviant behaviour? John's story

John, the purchasing manager, has been with the company some twenty years. Prior to the creation of the open plan office he resided in an office on his own. John has been well known for his volatile temper. His relationship with Anne has been a particularly poor one. Whenever he felt that Anne had made a mistake he would come barging into the planning office shouting obscenities at Anne and behaving in an extremely offensive manner. This led to many disagreements between him and Anne's manager who felt that his behaviour was unacceptable. At the start of the study all participants were asked how good they felt their colleagues thought they were at their jobs. Anne reported that John rated her very poorly. When everyone moved to the open plan office John carried on behaving towards Anne as he had previously. However, the others soon made their disapproval of his behaviour clear through the sudden silences following one of his outbursts, to disapproving glances or outright comments such as, "You're out of order John".

During the course of the study there was a remarkable change in John. Not only did his outbursts reduce dramatically in both frequency and intensity, he also began to display unexpected behaviours. As John is the purchasing manager he is sent gifts by his suppliers around Christmas. No-one else in the office receives such gifts. After being in the office for six months John decided to donate all of his gifts to an office draw at Christmas. This resulted in some forty five bottles of alcohol being shared between the office inhabitants. It was not just the bottles which John was given in full view of his colleagues which were donated – he would *often come into the office having just seen a supplier bearing gifts. It would have been very easy for him to conceal those bottles in his car. When John had contributed some thirty bottles to the draw his colleagues told him he should keep the rest for himself but he refused. He only retained one particularly good red wine (for which John has a particular liking) when told "If you don't take that home with you we wont take any of the bottles".*

After eighteen months John's outbursts were virtually non-existent and directed toward external sources rather than his colleagues.

His colleagues also demonstrated emotional support for John on several occasions. For example, when the group buyer visited John and John was somewhat worried about the reasons for the visit his colleagues voiced opinions such as, "He's a dick-head as well as being arrogant". A further visit generated more hostility: "Everything he's suggested we've already done or are about to do"and "I think he's just trying to justify his job".

When the final questionnaires were submitted Anne scored John as rating her job performance as 4.

Several constructs warrant discussion when analysing John's behaviour. The results of the first questionnaire showed that John scored highly on self-leadership and employed more self-leadership strategies than anyone else. In particular he employs self-punishment which is not regarded as a particularly healthy strategy when exercised in isolation. Self-leadership has been described as not particularly conducive to team-working and this appears to apply in John's case. This could help explain why he was so volatile when work did not go well – he felt badly about himself and lashed out against those he felt responsible for making him feel like that.

From a social identity viewpoint, work pressure or conflict between group goals and sub-group goals appears to reduce the identity to the sub-group level. Work pressure could have resulted in John adopting an individualistic stance and giving vent to his frustrations in a loud and abusive manner at the beginning of the study. However, once installed in the open plan office John began to experience the support of his colleagues which could have helped alleviate the amount of pressure he felt and prevent his sense of self-identity moving from the group to the individual level.

John could have been demonstrating his desire to belong to the group by beginning to conform to the group's norms for behaviour. His willingness to donate all of his Christmas gifts to the other group members could be seen as demonstrating his commitment to the group. Indeed, at the conclusion of the study, John appeared to have taken on the role of group jester, frequently cracking jokes and pointing out the humorous side of situations.

As regards John's working relationship with Anne there are several explanations for its improvement. Festinger et al's (1950) study of friendship patterns at a university campus illustrated that proximity influences liking (Gross, 1996). Proximity provides more opportunities for interaction and increased interaction produces what Zajonc (1968) calls the mere exposure effect (Gross, 1996). Moving from individual offices to one combined office cannot help but increase the frequency of interaction.

From Wenger's (1998) study of claims processers, it is evident that there can be a misalignment between what individuals perceive as the practice of their colleagues and the actuality of that practice. John would have had preconceived opinions about how Anne conducted her job and the amount of skill and effort involved. When working in the same office John would become more aware of the actuality of this practice rather than what he imagined it to be. Indeed, most participants appeared to become more tolerant of the amount of time their colleagues needed to carry out certain duties over the course of the study. Van der Vegt and Van de Vliert (2005) explain this through studies by Brewer and Miller (1984) and Stephan and Stephan (1984) which explored how increased contact increases knowledge about a dissimilar other and produces "personalising interactions with the exchange of more intimate information, which reduces anxiety."

Has the open plan office increased the degree of co-operative behaviour?

At the start and conclusion of the study, questionnaires were filled in by the participants which detailed how often each individual dealt with their colleagues, how much the quality of their colleagues' work affected the quality of their own work, and how willing each person would be to help out their colleagues should they suffer from an excessive workload. For the most part, the initial results were very similar to the later results:-
Carole declared that she was willing to help everyone out (although no evidence was seen of this. In fact, when Anne told her she could not produce the quality reports for the quality manager due to high absenteeism within the planning department Carole merely asked Anne's manager what she was going to do about it. When told that nothing could be done because it was a resource issue Carole initially complained that they needed to be done but then later did approach the customer services manager (whose department had compiled the reports prior to them being taken over by planning) to ask for some assistance. When this was not forthcoming she did accept that the reports would not be produced but did not offer any instrumental assistance from either herself or her staff)

Jane would be willing to help Anne, Carole and Kim.

Anne would be willing to help Jane and Kim (and in the initial results would have been willing to help out John also).

Chris would be willing to help Carole and Michael.

Michael would be willing to help Carole and Chris.

John would not be willing to help anyone out (although in the initial results John scored this category as 1 for everyone ie. Definitely would not help out; whereas in the later questionnaire he altered his response to either 2 or 3. Although this does not demonstrate a willingness to help, it could, perhaps, be seen as a softening of his attitude)

Nigel initially scored himself as 3 or 4 on this category but in his later questionnaire altered his response to 1 for everyone.

Observation revealed that the only person who appeared to take on extra work in order to help any of her colleagues out during the course of the study was Anne. Karen asked Anne to provide her with more detailed reports after the plans had been compiled in order to make her job easier. Anne readily complied but, when her workload became unmanageable she began to berate Karen for asking for this extra information even though she had agreed to the extra work in the first place and, although Karen was likely to have insisted on having the revised reports, the matter could have been referred to her manager to discuss with Karen.

In regard to how an individual's job is affected by the quality of their colleagues' work:-
Carole is affected by all of her colleagues.
Jane is affected by Carole, Anne and Kim
Anne is affected by Jane and Kim.
Chris is affected by Carole.
Michael is affected by John, Jane, Carole, Kim and Anne.
Nigel is affected by John (although the reason for this is not clear) and Carole.
However, only Carole is affected by the quality of Nigel's work.

Observation showed that Anne in particular was concerned about how John perceived her performance. She often questioned if what she had given him complied with his requirements and appeared sensitive to any criticism he gave her. However, having said that, there was a marked difference in how she responded to this criticism at the start and conclusion of the study. At the start she would accept the criticism quietly, become upset by it and work hard to resolve the problem, even if it was not wholly of her making. At the conclusion, if the problem was due to something John had agreed to then she would point this out politely and then discuss how the problem could be resolved. For example, the upholstery plan *for the week after the stock take had a large part one. Part one is always started at the end of the previous week and John is responsible for supplying foam to support this. John normally attempts to run down his foam stocks in readiness for the stock-take but having such a large part would not allow him to do so. The resulting conversation went like this:-*

John – "Anne, this upholstery plan's got a massive part one"

Anne – "Yes".

John – "Well I can't do it. It's stock-take the week before and I can't bring that amount of foam in".

Anne – "John, don't you remember us having a conversation about how many parts the plan should have, and how big they should be?"

John – thought for a few seconds, then "Ah well. It's my fault then. I forgot".

Although the literature appears to indicate that task interdependence is likely to influence helping behaviours, this does not appear to be a given. The study's results appear to show that membership of a sub group is more likely to predict the degree of helping behaviour. Kim, Anne and Jane all belong to one subgroup; Carole, Michael and Chris belong to another, and John and Nigel work as individuals.

Taggar and Haines (2006) differentiated between initiated task interdependence where an individual feeds another with the information needed to carry out their job, and received task interdependence where an individual receives the information they need from another. Taggar and haines (2006) cite Horsfall and Aresberg (1966) and Thomas (1957) in explaining how those high in initiated task interdependence feel a sense of responsibility to help facilitate the performance of others, and Dore et al (2004) and Kiggundu (1983) when they point out that this feeling of responsibility can bring about an improvement in the initiator's performance. They also draw on early studies by Trist and Bamforth (1951) and Trist et al (1963) which posited that initiated task interdependence was a more likely source of job satisfaction than was received task interdependence. Although this view of initiated task interdependence can help explain Anne's concern with how John viewed her work and why she expended considerable effort to ensure that her work was of a high standard., it does not explain why others within the office did not exhibit the same willingness to help others outside of their subgroup. One of Taggar and Haines' hypotheses was that social exchange theory (Blau, 1964) would dictate that those high in received task interdependence would also be high in initiated task interdependence, supporting the norm of reciprocity. This is certainly not the case in this study when examining the degree of helping behaviours between sub-groups. However, Taggar and Haines (2006) also point to Bandura's (1997's) self- efficacy theories, in particular self-efficacy for teamwork. Not all individuals will have the same propensity towards teamwork and this can affect the degree of effort they expend in discharging their initiated task interdependence responsibilities.

Personality traits can also have an effect. Comeau and Griffith (2005), in their paper on organisational citizenship behaviour, draw on the work of Organ and Lingl (1995) and Organ and Ryan (1995) in stating that conscientiousness and agreeableness are significant predictors of organisational citizenship behaviour.

One other possible explanation for Anne's willingness to expend large amounts of effort (more than other group members appear to do) to ensure that her work is of a high standard is the fact that she appears to be fairly low on general self-efficacy (determined by the fact that she continually downplays her achievements and appears unconfident about her abilities outside of work) but is fairly high on organisational self-efficacy. Could her extra effort be a means of maintaining her level of organisational self-efficacy? Will she go to greater lengths than her colleagues in order to ensure that the work she has done provides a successful group outcome because this will then enhance her own self-image?

And why does Carole state a willingness to help everyone out but not actually demonstrate that willingness? This could be due to social acceptability bias. It makes sense that someone who is part of a cohesive group would be conscious of the desirability to demonstrate helpfulness towards all members of that group. As Carole is the most senior member of the group she may feel more pressure to demonstrate solidarity towards the group as a whole rather than just her own subgroup. Nigel, however, appears to be in the process of divorcing himself from the group. Although he initially declared some willingness to help out, he now declares none. Nigel's job does not really tie in with any of the other participants' roles (with perhaps the exception of Carole), he is not often in the office due to the nature of his job and does not often participate in group discussions (apart from social banter) as they are not relevant to him. It would not appear that he sees himself as part of the group. Moving him into the office has served no useful purpose (but neither has it had a detrimental effect on the group).

How should the group be led and who is the leader?

Leadership within the office is not clearly defined. Although Carole is the most senior manager she only has responsibility for the upholstery, quality and purchasing sub-groups. Planning and Engineering report into the same superior as Carole. The planning manager recognises that Carole is more senior and, although not reporting to her, treats Carole as the overall manager of the group on many occasions.

All participants were given questionnaires on Carole's leadership at both the start and the conclusion of the study. The participants' need for autonomy was also measured by the questionnaires as was the degree of self-leadership.

All participants scored Carole above average on relationship.
All participants apart from John scored Carole above average on task.
Carole's subgroup members (Michael and Chris) scored her higher on task than relationship (although the relationship scores were high). At the start of the study, Chris and Michael's scores were more dissimilar for task and relationship than the scores they gave at the end of the study, the relationship score reducing and the task score increasing.
Anne and Jane, similarly scored Carole higher on task than relationship at the end of the study but had scored her higher on relationship than task and the start of the study.
All individuals scored above average on need for autonomy

Has the office increased learning potential and the creation of new knowledge.

The office can be seen as a physical representation of Nonaka's "Ba".
No-one appears to seek out new learning experiences. However, it seems sensible to assume that the presence of more learning opportunities could generate more learning regardless of the participants' disinclination to actively learn.

Given this view, having all staff working together in an open plan office should increase the number of interactions and, therefore, the amount of knowledge created. This does, indeed, appear to be the case. Even when not directly involved in a conversation, various members of staff will half-listen to the conversations and chip in whenever they feel they have something relevant to offer. This often throws up different perspectives and can cause the discussion to take a different direction. The conclusion which is eventually reached then appears (in the author's opinion) to have a more holistic flavour. This would never have happened when each production department was housed within separate offices. Instigating a discussion would have required the effort of visiting another office and would have been a two way conversation involving only the invited parties and would not have incorporated the views of any of the "uninvited" participants as they would not have been privy to the discussion.

The open plan office removes the obstacle of distance and should help diffuse tacit knowledge. However, the success of this is difficult to gauge. It remains an intuitive assumption that this should be the case.

In the office, active learning is not observed to any great degree. Although the environment is conducive to passive learning the motivation to engage in more active learning appears to be lacking. It could be that learning is associated with a potentially higher workload? Only Anne volunteers to take on more work in order to learn something new. Interestingly, from observation, Anne appears to be fairly low in self-esteem although the other team members appear to be fairly high. Anne is also high on organisational self efficacy. It could be that her desire to learn more and take on more work is linked to an increase in her organisational self-efficacy and thus, her feelings of self-worth.

This chapter has examined the findings and has attempted to analyse them in the light of research done by established authors whilst bearing in mind the effects of social identity theory. The following chapter will analyse what the findings mean as a whole to the research.

Chapter five – Conclusions

This chapter will take the findings discussed in the previous chapter and will examine the limitations of the research and whether the research question and objectives have been met by the study. It will further question what this research means to organisations in general and whether it has contributed towards the literature already available.

Critique of the adopted approach

As this was the author's first research project, it was something of a "journey of discovery". Certain approaches worked and others appeared to require a large amount of effort for little return.
The questionnaires did not yield vastly different results at the end of the study as was expected. This was disappointing but could not be foreseen and did illustrate the fact that the original sub-groups had not vanished over the study period. It could be that the study period was not long enough or it could be that sub-groups, once established, persist through time. With regard to the observation method, it was necessary to have a full understanding of the literature prior to commencing observation in order to recognise what was worth recording. Given the inductive nature of the study and the fact that the area of study had only been loosely defined prior to commencing the research, this was a large body of literature to absorb and understand. The process became easier further into the study but interesting observations may have been missed in the early stages because the author was not fully conversant with the literature available. The inductive nature also resulted in the direction of the research being honed more as the study progressed. Again, this could have resulted in the loss of useful information early on
Overall, observation was found to yield the most valuable data, despite its dubious ethics. However, it proved very time consuming and difficult to accommodate within a busy working day.

Interviews proved of little worth. Social acceptability bias could have prevented useful data being produced or it could have been down to the author's inexperience in interviewing for research purposes.

The research question.

The research began with the question:-

"Can moving several departments into one open plan office have beneficial outcomes?"

This question has several objectives :-

1. *To determine if the degree of co-operative behaviour will increase.*
2. *To determine if the behaviour of 'difficult' employees can be modified by placing them within such an environment.*
3. *To examine whether the sharing and transfer of knowledge can be improved.*
4. *To ascertain whether the new, larger group will work harder and more effectively in order to achieve the company's goals.*

Each of these objectives will now be examined in turn.

1. Has the degree of co-operative behaviour increased?

The author is in no doubt that the degree of co-operative behaviour has increased. Although the findings illustrate that helping behaviours are scant, emotional support which does not "cost" anything in terms of time or effort, is freely given. All of the participants freely admit that they would only be inclined to help out colleagues within their own sub-group. Taggar and Haines (2006) proposed two different types of task interdependence – initiated task interdependence where an individual feeds another with the information they need to carry out their job, and received task interdependence where an individual receives the information they need from another. Taggar and Haines (2006) draw on Horsfall and Aresberg (1966) and Thomas (1957) in their finding that those high in initiated task interdependence feel a sense of responsibility to supply their colleagues with the information necessary to facilitate their performance. They also use earlier studies by Dore et al (2004) and Kiggundu (1983) to explain that this feeling of responsibility can encourage the initiator to improve their own performance. The findings of this research do not support this or other literature currently available on task interdependence (unless viewed only in the context of subgroups rather than the larger group). Clearly, that literature is too paroquial and other factors need to be taken into account. As stated within the findings, Taggar and Haines (2006) discuss the importance of self-efficacy for teamwork and Comeau and Griffith (2005) point out that conscientiousness and agreeableness are significant predictors of organisational citizenship behaviour. Anne illustrates how self-efficacy can appear to have an effect on helping behaviours. Her desire to maintain her organisational self-efficacy seems to affect the degree of citizenship behaviours she exhibits. Self-efficacy (Bandura, 1977) is the degree to which an individual believes they are capable of performing certain behaviours. Perceived self-efficacy can both influence an individual's choice of activity and can also affect coping efforts once the activity has been started. Those individuals who tend to push themselves slightly beyond their comfort zone in order to pursue activities they perceive as "threatening" (although they may not be) will experience success which will reinforce their sense of self-efficacy, thus eliminating defensive behaviour (Bandura, 1977). Taking Bandura's (1977) self-efficacy theory in conjunction with the social identity viewpoint that the individual needs to feel a sense of self-worth can help to explain why Anne, an individual low in global self-efficacy but high in organisational self-efficacy, will expend more effort helping her colleagues with their jobs than anyone else in the office, even if those colleagues are not members of her own sub-group. That this could be the reason for Anne's helping behaviours is just the author's opinion. It could, of course, be the case that Anne has more of the personality traits which would predict citizenship behaviours than the other group members. Clearly, the work group is a complex structure and much more study would need to be undertaken to identify whether self-efficacy or personality traits are stronger predictors for citizenship behaviours.

Additionally, the fact that the participants indicated that they would only be willing to help out members of their sub-groups is interesting. Although the research took place over a period of eighteen months, the sub-groups present at the start of the study were still in evidence at the conclusion. Although all participants clearly felt that they now belonged to a larger work group, there was still a definite "pecking" order. When faced with difficult circumstances, the participants would alter their social identity from the main group, to the sub-group, to the individual level. Although retreat back to the individual level could be expected, it is notable that the original sub-groups still existed. It is possible that these sub-groups could become less salient over time but this is by no means certain.

And what of the individuals' desire to become members of a larger group? It is clear from Karen's case that merely creating a larger group with a view to increasing co-operative behaviours will not necessarily work as the individuals may prefer to be members of alternative groups or group members may be unwilling to accept an individual into their group. The findings discussed how deviant group members can be judged more harshly than outgroup members (Margues and Yzerbyt, 1988, cited in Wellen and Neale, 2006) and that this "black sheep" effect can result in reducing perceived levels of task cohesion and members commitment to achieving group goals. Although this was not observed within this author's research, this is clearly a worrying aspect. Perhaps care should be exercised when introducing new members to the group. The research indicates that "green" employees are more likely to be readily accepted and integrated within the group than those with more experience. This is illustrated by Karen and Mark's experiences. Karen did not feel the need to conform within the group but Mark did. The degree to which these two individuals were perceived to conform by their colleagues could be taken to be the degree of modelling they exhibited. This harks back to Social learning theory, first proposed by Millard and Dollard in 1941. It proposes that much human behaviour is learned through social interaction. Individuals observe a model's behaviour and the rewards or punishments that model receives after exhibiting that behaviour and, should the model be liked by the observer, or possess characteristics the observer desires or perceives to be similar to their own, then the observer may mimic the model's behaviour should a rewarding outcome be anticipated. Mark, having had no earlier work experience, could only look to the office's inhabitants as a source of modelling. Karen, on the other hand, had a great deal of experience in other organisations and, although she could have been exhibiting modelling from past experiences, was not exhibiting modelling based on her current colleagues. This could be perceived as deviant by the group's members. Also, as discussed earlier in the findings and analysis chapter, Karen obviously considered the group's boundaries to be permeable. She did not consider it necessary to become a permanent member of the group if she considered the group to be undesirable. Haslam (2004) drew on work from Rao, Davis and Ward (2000) and Boen and Vansbeselaere (2000, 2002) when he explained how an individual would disassociate themselves from other ingroup members in favour of working towards improving their own personal outcomes by defecting to what they see as a higher status outgroup.

The company being researched did not have a clear leader. Although Carole is the most senior manager within the group and is deferred to by all participants on most occasions, she is still a member of a particular sub-group and could possibly put that sub-group's needs above the company's goals. Also, she was not senior to Karen and could not instruct Karen on how she should behave. This appears to indicate that an overall leader should have been appointed and that that leader should preferably not have any allegiance to any sub-group. As the group is multi-disciplined, the ideal form of leadership could, arguably, be shared leadership in which different individuals take on the leadership role at different times depending on the task in hand (note the similarities to situational leadership). However, Seers, Keller and Wilkerson found that some individuals are better fitted to the leader prototype than others and also that "individuals who verbalise more most often emerge as leaders", implying that it is those that are the most vocal and not necessarily the most capable who become leaders.

One important aspect of leadership within the group appears to be self-leadership. Neck and Houghton (2006) emphasise how the behaviour-focused strategies associated with self-leadership can enhance self-awareness and self-focus and put forward the findings of Carver (1975) and Wicklund and Duval (1971) who believe that increased self-focus leads to increased task-focus which leads to improvements in task performance. However, Neck and Houghton (2006) also cite Manz and Sims (2001) in cautioning against the excess use of these strategies, especially the negative strategies of self-punishment and self-criticism. Indeed, the author ventured in the findings chapter that the overuse of these strategies could be an explanation for John's earlier behaviour. Neck and Houghton (2006) also propose that self-leadership strategies could also be useful within a self-managing team with no formal leader. Perhaps this is the reason why the group has managed thus far in the absence of a clearly defined leader. Bligh, Pearce and Kohles (2006) point out the individualistic, nature of self-leadership which tends not to be team orientated. They believe that teams should not be too reliant on self-leadership unless team and organisational incentives are also employed to encourage team building. Perhaps this is where Carole comes in. Despite her membership of a sub-group and not having been formally declared as the overall leader, she does tend to mediate between the individuals in the office and also organises occasional social events which could help with team building.

2. Can the behaviour of ‘difficult’ employees be modified by being placed within a larger group?

John’s case seems to indicate that deviant behaviour can be mediated by being placed within a larger group. However, this is not a simple issue. John clearly wanted to remain a member of the group and complied with the group’s norms and values in order to do so. Karen, however, did not. Social identity theory appears pivotal in respect of the group’s ability to modify behaviour. Karen obviously felt that the group’s boundaries were permeable and simply removed herself from the group when the members would not accept her behaviour and she was not willing to modify her behaviour in order to conform. As mentioned previously, this could possibly have been avoided by nominating a suitable group leader to whom Karen was answerable. This leader would need to keep a very watchful eye on how any newcomer interacted with the group and would need to be charged with maintaining the performance levels of the newcomer. As seen in Karen’s case, the Romanian company’s poor quality affected the group’s ability to achieve their goals. As Karen was the manager of the Romanian company any difficulties caused by the company were immediately associated with her. That, coupled with her unwillingness to accept criticism, served to keep her on the periphery of the community. Wenger, 1998, proposed that newcomers will be kept on the periphery until they gain competence in the eyes of the other members and are then allowed to graduate to full membership. Karen never achieved full membership. The shortcomings of the Rumanian company affecting the ability of her colleagues to achieve their objectives and her unwillingness to conform within the group precluded this ever happening and culminated in her being branded an atypical group member.

In conclusion, it is by no means certain that deviant behaviour can be mediated by moving ‘problem’ employees to a larger group. Although the author has posited that it may be possible to increase the likelihood of this happening by appointing a suitable group leader, this is only supposition on the author's behalf and would need further research in order to substantiate it.

3. Can the sharing and transfer of knowledge be improved by moving to an open plan environment?

The findings did not illustrate a clear improvement in the sharing and transfer of knowledge. The assumption that there has been an improvement remains an intuitive one. The open plan environment complies with the literature's suggestions for improving the transfer of knowledge – reducing distance, creating a physical representation of Nonaka's "Ba", creating the opportunity for increased interactions – but the success of these measures is difficult to gauge.

Nonaka et al (2000) see knowledge creation as a social activity process - "knowledge is created through the dynamic interactions among individuals and/or between individuals and their environments" (cited in Augier et al, 2001).
It would appear from the literature that knowledge is, as Nonaka said, created by interactions between individuals and between individuals and their environment. Different versions of knowledge can be created under similar circumstances due to the variation in interpretation applied by different individuals. Context can also shape the final version of knowledge acquired and contexts are seen as emergent rather than static entities (Augier et al, 2001). Erickson and Schultz (1997) state "contexts are not simply given in the physical setting…nor in combinations of personnel…Rather, contexts are constituted by what people (do and where and when they do it). (cited in Augier et al, 2001). As McDermott (1976) puts it, 'people in interaction become environments for each other'". This implies that the permutations of different types of knowledge are huge.
The literature makes repeated reference to the necessity for "ba". "Ba" is the place where knowledge is created. This is not necessarily a physical space.
Augier et al (2001) note that "ba" can be created intentionally or unintentionally. The concept of "ba" appears similar to Wenger's (1998) community of practice. Although Augier et al (2001) complain that the definition of "ba" is unclear or ambiguous the author ventures that it can be

viewed as the opportunity for knowledge creation and that the open plan office can be considered a physical representation of this “ba”.

It is clear from observation that conversations are often listened to by uninvited participants and that these participants often join in, providing new perspectives and generating new ideas so from this point of view the environment is helping to share and transfer knowledge. However, perhaps the most significant knowledge being assimilated is knowledge about ones’ colleagues and the jobs they do. All participants appear much more tolerant of their colleagues than they were previously and the tension between process and practice appears to have eased somewhat, leading to improved relations and more efficient working. Having said that, the environment appears to have had no impact on the participants’ desire to learn. Although the environment appears to be far more conducive to passive learning, no evidence was seen of active learning (apart from, perhaps, in Anne’s case but this appears to have little to do with the environment in any case).

However, perhaps the fact that more individuals were placed in a single space could generate learning naturally and without effort? Learning appears to be a social phenomenon. Fuller and Unwin (Rainbird, Fuller and Munro, 2004) recognise this but also caution against leaning too much towards individualism or voluntarism in quoting Marx as saying, “Men make their own history, but they do not make it just as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given and transmitted from the past”.

The existence of collective knowledge (and therefore learning outside of one individual) is illustrated by Yanow’s study of flute makers (Nicolini, Gherardi and Yanow, 2003) which inferred that the flute makers held knowledge collectively. Yanow agrees with Gagliardi (1998) in that knowing and learning are attributes of individuals and that the collective dimension can be seen in displays of their individual mastery. Yet, she also draws attention to the manner in which “teams” know their “plays” not as individuals but together as collectives. She further emphasises the social dimension by quoting Tsoukas (1996), “Individual knowledge is possible precisely because of the social practices within which individuals engage”.

Another view of the interplay between individual and social knowledge is offered by Fuller and Unwin (Rainbird, Fuller and Munro, 2004) in quoting Boreham (2002), “The new idea which the concept of work process knowledge introduced is that workers need to understand not just the technical system they are operating, but the work process in which they themselves are participating – and creating – by way of operating that system. And this involves reconceptualising the worker as a member of a much broader system, where knowledge is partly owned by the individual workers and partly by the organisation." It should also be noted that this appears to reflect Senge's (1990) view that all employees should attempt to become 'systems thinkers'. This view also helps to explain why the group appeared to become more tolerant and understanding of their colleagues – working within the same environment exposed everyone to their colleagues' working practices and, even without intentionally making the effort to learn, could have let to each individual becoming more aware of the broader system within which they operated.

The desire to learn remains subject to each individual's agency and being placed within an open plan environment appears to do little, if anything, to stimulate the desire to learn. As individuals' ontogenies are unique, being moulded as they travel through life, each individual's engagement in and learning through work will always be unique in one way or another. Not only will negotiation occur between the workplace's norms and practices but also between the individual's subjectivities and identities (Valsiner, 2000, cited by Billet).

4. Will the larger group work harder and more efficiently in order to achieve the company's goals?

The research did not find any indication that placing individuals within an open plan environment could stimulate them to work harder. However, the question of efficiency is quite different. For purely practical reasons, such as proximity, faster communication, and increased interactions, efficiency does appear to have increased. But this is an intuitive assumption on the author's behalf. Apart from the observation that conversations tending to include more participants resulting in a more holistic solution to problems, no other evidence of increased efficiency was found.

Perhaps one thing which should be borne in mind when considering efficiency is the makeup of the sub-groups housed within the office. Ideally, the sub-groups should be linked in some way. Nigel has no effect on any of the sub-groups in the office and appears to have no effect on these sub-groups, whether positively or negatively. Therefore, unless space is at a premium and individuals need to be housed "somewhere", then an open plan office should only include those sub-groups which can have an effect on each others' outcomes.

In conclusion

So, has the open plan office proven beneficial to the company? The answer has to be yes. For the research company, the move has been a productive one. However, we should not forget Wenger's (1998) cautionary words in relation to communities of practice :-

> "*They can reproduce counterproductive patterns, injustices, prejudices, racism, sexism, and abuses of all kinds. In fact, I would argue that they are the very locus of such production.*"

The formation of a larger group will increase the group's "strength". It will become more aware of its ability to influence and to generate resistance. This may not be desirable to the organisation as a whole and is another reason why the larger group should have an overall leader, housed within the open plan environment, who monitors the workings of, and the relationships within, the group very closely.

And, however exemplary the individual incumbents of the office are, individual differences will always affect the final outcomes of group working. Social identity will pervade the group and cause it to act in unexpected ways. Humans are so complex that it cannot be expected that one could foresee how a group of individuals will react when placed in the same space. Social identity, for the same reasons, is not easily manipulated. Indeed, it should be stated that it appears impossible to manipulate. A good leader may help to nudge the group along in the right direction but beneficial outcomes are, by no means, a foregone conclusion.

Has this research contributed to the literature? The author thinks it has. A possible link between global and organisational self-efficacy, helping behaviours and expended effort has been identified (although this would need a great deal more research before such a tenuous link could definitely be established). And the author feels that the case study has also illustrated the need to adopt a more holistic approach to research. No one construct should be studied in isolation. Human beings are complex and unpredictable creatures, formed from their life experiences. Personality traits, identity, and probably other factors, also need to be considered when studying a particular area.

Limitations of the research

As the research is a case study, it cannot be generalised to other organisations. However, Flick's (1998) view is that the social arena is changing so rapidly that considerations of generalisability are perhaps not so key as they were first thought to be. However, due to the author's inexperience, no elaborate analysis methods were employed so it is possible that some findings may have been overlooked.

The study may also be considered slightly ethically dubious given that the author acted as a covert participant observer. However, in the author's view, none of the participants were harmed in any way by this lack of disclosure. In hindsight, however, acting as a covert participant observer may not have been necessary. As the research eventually took the form of a longitudinal study, habituation would probably have negated the observer effect. Nonetheless, taking this approach worked well. The office's inhabitants were totally unaware of the author's role and, because of this, the data gleaned from observation could be deemed to be free from social acceptability bias. Having said that, observation and writing up field notes in a timely fashion (as soon as the observation occurred in the author's case) did prove to be time consuming and difficult to balance with trying to conduct one's day-to-day activities within a busy office.

The other research methods – interviews and questionnaires could have been subject to social acceptability bias. Additionally, data from the questionnaires could also have been affected by same source bias although the author did attempt to reduce this somewhat by issuing out different questionnaires approximately two weeks apart (the author recognises that the separation time should have been longer but was worried about time constraints at the time). Overall, the author feels that the observation method produces the most “honest” data.

Further study?

At the beginning of the findings and analysis chapter the author stated that several areas could prove worthy of further study. In the author’s opinion, these are as follows :-

- Mediation of deviant behaviour – the change in John’s behaviour was so dramatic over the course of the study that the effect of being moved into a larger group within an open plan environment definitely warrants further investigation. Indeed, John could now be considered a model employee. Apart from his altruistic behaviours around Christmas he also now appears genuinely concerned for the well-being of his colleagues. The author recognises that not all “problem” employees will respond positively. Karen’s case is proof of this. However, there must be reasons for John’s change of attitude and a deeper understanding of this could only benefit an organisation.
- The role of global self-efficacy in relation to organisational self-efficacy also appears interesting. As Anne is the only group member exhibiting low global self-efficacy but higher organisational self-efficacy, this construct could also warrant further investigation. One swallow does not a summer make but could there be a possible link between the two forms of efficacy, helping behaviours and expended effort? If this could be proven then tests for global self-efficacy at the interview stage could be combined with intense coaching, support and leadership to produce “super employees”. This is perhaps a little optimistic but it could be a fruitful avenue of study.

Bibliography

Addelson, M. (1996). *Resolving the spirit and substance of organizational learning.* Journal of Organizational Change Management, volume 9, no. 1, pp 32-41. Retrieved 24th March 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0230090102.html.

Ahearn et al. (2004). *Leader Political Skill and Team Performance.* Journal of Management, volume 30, no. 3, pp 309-327

Argyris et al. (1985). *Action Science: Concepts, Methods and Skills for Research and Intervention.* California: Jossey-Bass Inc.

Augier et al. (2001). *Understanding context: its emergence, transformation and role in tacit knowledge sharing.* Journal of Knowledge Management. Volume 5, no. 2, pp 125-137. Retrieved 31st April 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2300050201.html.

Bailey, C.A. (1999). *Field Research.* London: Sage.

Bandura, A. (1977). *Self-efficacy: Toward a Unifying Theory of Behavioural Change*. Psychological Review, volume 84, no. 2, pp 191-215.

Billet, S. (2004). Learning through work; Workplace participatory practices. In H. Rainbird, A. Fuller, & A. Munro's (Ed.), *Workplace Learning in Context* (pp 109-122). London: Routeledge.

Bligh, M.C, Pearce, C.L., & Kohles, J.C. (2006). *The importance of self- and shared leadership in team based knowledge work.* Journal of Managerial Psychology, volume 21, no. 4, pp 296-318. Retrieved 24th March 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0500210402.html

Bollinger, A.S. & Smith, R.D. (2001). *Managing organizational knowledge as a strategic asset.* Journal of Knowledge Management, volume 5, no. 1, pp 8-18. Retrieved 29th September 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2300050101.html.

British Furniture Manufacturers' Association (2005). *Final Report: Benchmarking the export performance of UK furniture manufacturers.*

British Furniture Manufacturers' Association (2005). *State of Trade Survey.*

Bryman, A. & Bell, E. (2007). *Business Research Methods (2nd ed.).* London: Oxford University Press.

Comeau, D.J. & Griffith, R.L. (2005). *Structural interdependence, personality, and organizational citizenship behaviour.* Personnel Review, volume 34, no. 3, pp 310-330. Retrieved 30th January 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0140340303.html.

Denscombe, M. (2003). *The good Research Guide (2nd ed.)* London: Open University Press.

Denton, J. (1998). *Organisational Learning and Effectiveness.* London: Routeledge.

Denzin, N.K. & Lincoln, Y.S. (2005). *Collecting and nterpreting Qualitative Materials (2nd ed.).* London: Sage.

Dilello, T.C. & Houghton, J.D. (2006). *Maximizing organizational leadership capacity for the future.* Journal of Managerial Psychology. Volume 21, no. 4, pp 319-337. Retrieved 15th April 2007 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0500210403.html.

Dulewicz, V. & Higgs, M. (2005). *Assessing leadership styles and organisational context.* Journal of Managerial Psychology, volume 20, no. 2, pp 105-123. Retrieved 24th March 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0500200203.html.

Duvall, C.K. (1999). *Developing individual freedom to act.* Participation & Empowerment: An International Journal, volume 7, no. 8, pp 204-212. Retrieved 30th January 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/1180070801.html.

Fletcher, J.K. & Kaufer, K. (2003). Shared Leadership: Paradox and Possibility. In C.L. Pearce and J.A. Conger (Ed.), *Shared Leadership: Reframing the Hows and Whys* (pp 21-42). London: Sage.

Fuller, A. & Unwin, L. (2004). Expansive Learning Environments. In H. Rainbird, A. Fuller, & A. Munro's (Ed.), *Workplace Learning in Context* (pp 126-144). London: Routeledge.

Gold, J. (1997). *Learning and story-telling: the next stage in the journey for the learning organization.* Journal of Workplace Learning, volume 9, no. 4, pp 133-141. Retrieved 22nd April 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0860090404.html.

Gross, R. (1996). *Psychology: The Science of Mind and Behaviour (3rd ed.).*London@ Bath Press.

Hagar, P. (2004). The conceptualisation and measurement of learning at work. In H. Rainbird, A. Fuller, & A. Munro's (Ed.), *Workplace Learning in Context* (pp 242-258). London: Routeledge.

Haldin-Herrgard, T. (2000). *Difficulties in diffusion of tacit knowledge in organizations.* Journal of Intellectual Capital, volume 1, no. 4, pp 357-365. Retrieved 30th September 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2500010405.html

Haslam, S.A. (2004). *Psychology in Organisations: The Social Identity Approach (2nd Ed).* London: Sage.

Have, P.T. (2004). *Understanding Qualitative Research and Ethnomethodology.* London: Sage.

Henderson, S. (1997). *Black swans don't fly double loops: the limits of the learning organization?* The Learning Organization, volume 4, no. 3, pp 99-105. Retrieved 24th March 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/1190040302.html.

Hong, J. (1999). *Structuring for organizational learning.* The Learning Organization, volume 6, no. 4, pp 173-186. Retrieved 14th April 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/1190060404.html.

Houghton, J.D. & Neck, C.P. (2002). *The revised self-leadership questionnaire.* Journal of Managerial Psychology, volume 17, no. 8, pp 672-691. Retrieved 24th March 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0500170803.html.

Kirk, J. & Miller, M.L. (1986). *Reliability and Validity in Qualitative Research.* London: Sage.

Laycock, M. (2005). *Collaborating to compete: achieving effective knowledge sharing in organizations.* The Learning Organization, volume 12, no. 6, pp523-538. Retrieved 14th April 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/1190120601.html.

Li, M. & Gao, F. (2003). *Why Nonaka highlights tacit knowledge: a critical review.* Journal of Knowledge Management, volume 7, no. 4, pp 6-14. Retrieved 24th March 2006. from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2300070401.html.

McCracken, M. (2005). *Towards a typology of managerial barriers to learning.* Journal of Management Development, volume 24, no. 6, pp 559-575. Retrieved 30th September 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0260240606.html.

Meso, P. & Smith, R. (2000). *A resource-based view of organizational knowledge management systems.* Journal of Knowledge Management, volume 4, no. 3, pp 224-234. Retrieved 14th April 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2300040304.html.

Neck, C.P. & Houghton, J.D. (2006). *Two decades of self-leadership theory and research.* Journal of Managerial Psychology, volume 21, no. 4, pp 270-295. Retrieved 28th May 2007 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0500210401.html.

Ortenblad, A. (2001). *On differences between organizational learning and learning organization.* The Learning Organization, volume 8, no. 3, pp 125-133. Retrieved 24th March 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/1190080304.html.

Pajares, F. (2002). *Overview of social-cognitive theory and of self-efficacy.* Retrieved 29th Sept 2006 from http://www.des.emory.edu/mfp/eff.html.

Politis, J.D. (2002). *Transformational and transactional leadership enabling (disabling) knowledge acquisition of self-managed teams: the consequences for performance.* Leadership & Organization Development Journal, volume 23, no. 4, pp 186-197. Retrieved 14th April 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0220230402.html.

Politis, J.D. (2005). *The influence of managerial power and credibility on knowledge acquisition attributes.* Leadership & Organization Development Journal, volume 26, no. 3, pp 197-214. Retrieved 24th March 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0220260303.html.

Politis, J.D. (2006). *Self-leadership behavioural-focused strategies and team performance – the mediating influence of job satisfaction.* Leadership & Organization Development Journal, volume 27, no. 3, pp 203-216. Retrieved 28th May 2007 from http://www.emeraldinsight.com/Insight/ViewContentServlet?Filename=Published/EmeraldFullTextArticle/Articles/0220270304.html.

Rollinson, D. (2005). *Organisatinal Behaviour and Analysis: An integrated approach.* Harlow: Pearson Education Ltd.

Sanders, M., Lewis, P. & Thornhill, A. (2003). *Research Methods for Business Students.* Harlow: Pearson Education Ltd.

Senge, P.M. (1990). *The Fifth Discipline: The Art & Practice of the Learning Organisation.* USA: Doubleday.

Smith, E.A. (2001). *The role of tacit and explicit knowledge in the workplace.* Journal of Knowledge Management, volume 5, no. 4, pp 311-321. Retrieved 24th March 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2300050403.html.

Smith, M. & Cooper, C. (1994). *Leadership and Stress.* Leadership & Organization Development Journal, volume 15, no. 2, pp 3-7. Retrieved 29th Sept 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0220150201.html.

Stovel, M. and Bontis, N. (2002). *Voluntary turnover: knowledge management – friend or foe?* Journal of Intellectual Capital, volume 3, no. 3, pp 303-322. Retrieved 15th May 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2500030307.html.

Taggar, S. & Haines, V.Y. (2006). *I need you, you need me: a model of initiated task interdependence.* Journal of Managerial Psychology, volume 21, no. 3, pp 211-230. Retrieved 28th May 2007 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0500210303.html.

Van der Vegt, G.S. & Van de Vliert, E. (2005). *Effects of Perceived Skill Dissimilarity and Task Interdependence on Helping in Work Teams*(Electronic version). Journal of Management, volume 31, no. 1, pp 73-89.

Van Woerkom, M. & Nijhof, W.J., & L.F.M. Nieuwenhuis. (2002). *Critical reflective working behaviour: a survey research.* Journal of European Industrial Training, volume 26, no. 8, pp 375-383. Retrieved 30th Jan 2006 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0030260802.html.

Weiss, H.M. (1978). *Social Learning of Work Values in Organisations.* Journal of Applied Psychology, volume 63, no. 6, pp 711-718.

Wellen, J.M. & Neale, M. (2006). *Deviance, Self-Typicality, and Group Cohesion: The corrosive effects of the Bad Apples on the Barrel (*Electronic version). Small Group Research, volume 37, no. 2, pp 165-186.

Wenger, E. (1998). *Communities of Practice: Learning, Meaning and Identity.* Cambridge: Cambridge University Press.

Yanow, D. 2003). Seeing Organisational Learning: A Cultural View. In D. Nicolini, S. Gheradi & D. Yanow's (Ed.), *Knowing in Organisations* (pp 32-47). New York: M.E. Sharpe Inc.

Yun, S., Cox, J. & Sims, H.P. (2006). *The forgotten follower: a contingency model of leadership and follower self-leadership.* Journal of Managerial Psychology, volume 21, no. 4, pp 374-388. Retrieved 14th May 2007 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0500210406.html.

Zarraga-Oberty, C., & Saa-Perez, P.D. (2006). *Work teams to favour knowledge management: towards communities of practice.* European Business Review, volume 18, no. 1, pp 60-76. Retrieved 30th March 2007 from http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0540180105.html.

Appendix

Appendix 1 – Questionnaires used.

OSE and TI measure

INSTRUCTIONS :-

- Please separate each sheet and discard the sheet with your name on it.
- Please then complete each of the remaining sheets and return them back to Kim.

Thank you for your participation.

OSE and TI Measure

INSTRUCTIONS – Read each item carefully and decide how mush you agree with each statement. Indicate your response to each item by circling one of the five numbers to the right of each item.

Key: 1=Definitely not true 2=Not true 3=Neither true nor untrue 4=True 5=Definitely true

1. Carole thinks I am good at my job	1	2	3	4	5
2. I deal with Carole frequently when carrying out my job.	1	2	3	4	5
3. How well Carole performs her job affects how well I can perform my job	1	2	3	4	5
4. If Carole had too much work to do then I would help her out.	1	2	3	4	5
5. Jane thinks I am good at my job	1	2	3	4	5
6. I deal with Jane frequently when carrying out my job.	1	2	3	4	5
7. How well Jane performs her job affects how well I can perform my job	1	2	3	4	5
8. If Jane had too much work to do then I would help her out.	1	2	3	4	5
9. Anne thinks I am good at my job	1	2	3	4	5
10. I deal with Anne frequently when carrying out my job.	1	2	3	4	5
11. How well Anne performs her job affects how well I can perform my job	1	2	3	4	5
12. If Anne had too much work to do then I would help her out.	1	2	3	4	5
13. Kim thinks I am good at my job	1	2	3	4	5
14. I deal with Kim frequently when carrying out my job.	1	2	3	4	5
15. How well Kim performs her job affects how well I can perform my job	1	2	3	4	5
16. If Kim had too much work to do then I would help her out.	1	2	3	4	5
17. Michael thinks I am good at my job	1	2	3	4	5

18. I deal with Michael frequently when carrying out my job.	1	2	3	4	5
19. How well Michael performs his job affects how well I can perform my job	1	2	3	4	5
20. If Michael had too much work to do then I would help him out.	1	2	3	4	5
21. Chris thinks I am good at my job	1	2	3	4	5
22. I deal with Chris frequently when carrying out my job.	1	2	3	4	5
23. How well Chris performs his job affects how well I can perform my job	1	2	3	4	5
24. If Chris had too much work to do then I would help him out.	1	2	3	4	5
25. Nigel thinks I am good at my job	1	2	3	4	5
26. I deal with Nigel frequently when carrying out my job.	1	2	3	4	5
27. How well Nigel performs his job affects how well I can perform my job	1	2	3	4	5
28. If Nigel had too much work to do then I would help him out.	1	2	3	4	5

Type of leadership

INSTRUCTIONS – Read each item carefully and think about to what extent the statement describes your manager. Indicate your response to each item by circling one of the five numbers to the right of each item.

Key: 1=Definitely not true   2=Not true   3=Neither true nor untrue   4=True 5=Definitely true

1. When it comes to my work, he/she gives me instructions on how to carry it out..   1 2 3 4 5
2. He/she urges me to assume responsibilities on my own.   1 2 3 4 5
3. He/she provides commands in regard to my job.   1 2 3 4 5
4. He/she advises me to solve problems without always getting his/her stamp of approval.   1 2 3 4 5
5. He/she gives me instructions about how to do my job.   1 2 3 4 5
6. He/she encourages me to search for solutions to my problems on the job without his/her supervision   1 2 3 4 5
7. He/she establishes my goals for me.   1 2 3 4 5
8. He/she encourages me to find solutions to my problems at work without his/her direct input.   1 2 3 4 5
9. He/she establishes my performance goals.   1 2 3 4 5
10. He/she encourages me to work together with other managers/supervisors who report to him/her.   1 2 3 4 5
11. He/she establishes the goals for my work.   1 2 3 4 5
12. He/she advises me to coordinate my efforts with other managers/supervisors who report to him/her.   1 2 3 4 5

Style questionnaire

INSTRUCTIONS – Read each item carefully and think about how often Carole engages in the behaviour described. Indicate your response to each item by circling one of the five numbers to the right of each item.
NB. In this instance, “group” refers to everyone who works in the office.

Key: 1=Never 2=Seldom 3=Occasionally 4=Often 5=Always

1. Tells group members what they are supposed to do 1 2 3 4 5
2. Acts friendly with members of the group. 1 2 3 4 5
3. Sets standards of performance for group members. 1 2 3 4 5
4. Helps others feel comfortable in the group. 1 2 3 4 5
5. Makes suggestions about how to solve problems. 1 2 3 4 5
6. Responds favourably to suggestions made by others. 1 2 3 4 5
7. Makes her perspective clear to others. 1 2 3 4 5
8. Treats others fairly. 1 2 3 4 5
9. Develops a plan of action for the group. 1 2 3 4 5
10. Behaves in a predictable manner towards group members. 1 2 3 4 5
11. Defines role responsibilities for each group member. 1 2 3 4 5
12. Communicates actively with group members. 1 2 3 4 5
13. Clarifies her role within the group. 1 2 3 4 5
14. Shows concern for the personal well-being of others. 1 2 3 4 5
15. Provides a plan for how the work is to be done. 1 2 3 4 5
16. Shows flexibility in making decisions. 1 2 3 4 5
17. Provides criteria for what is expected of the group. 1 2 3 4 5
18. Discloses thoughts and feelings to group members. 1 2 3 4 5
19. Encourages group members to do quality work. 1 2 3 4 5

20. Helps group members to get along. 1 2 3 4 5

SECTION 2
PS measure

1. Carole understands people well. 1 2 3 4 5
2. Carole finds it easy to imagine myself in the position of others. 1 2 3 4 5
3. Carole is able to make most people feel comfortable and at ease around her. 1 2 3 4 5
4. Carole is good at getting others to respond positively to her. 1 2 3 4 5
5. Carole usually tries to find common ground with others 1 2 3 4 5
6. It is easy for Carole to develop good rapport with most people. 1 2 3 4 5

S.L.

INSTRUCTIONS – Read each of the following items carefully and decide how true the statement is in describing you. Indicate your response by circling one of the numbers to the right of the statement.

Key: 1=Definitely not true 2=Not true 3=Neither true nor untrue 4=True 5=Definitely true

1. I use my imagination to picture myself performing well on important tasks.	1	2	3	4	5
2. I establish specific goals for my own performance.	1	2	3	4	5
3. Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face.	1	2	3	4	5
4. When I do an assignment particularly well, I like to treat myself to some thing or activity I especially enjoy.	1	2	3	4	5
5. I think about my own beliefs and assumptions about a difficult situation whenever I encounter one.	1	2	3	4	5
6. I tend to put myself down (in my head) whenever I perform poorly.	1	2	3	4	5
7. I make a point of keeping track of how well I am doing at work.	1	2	3	4	5
8. I focus my thinking on the pleasant rather than the unpleasant aspects of my job activities.	1	2	3	4	5
9. I use written notes to remind myself of what I need to accomplish.	1	2	3	4	5
10. I visualise myself successfully performing a task before I do it.	1	2	3	4	5
11. I consciously have goals in mind for my work efforts.	1	2	3	4	5
12. Sometimes I talk to myself (out loud or in my head) to work through difficult situations.					
13. When I do something well, I reward myself with a special event such as a good meal, film, bottle of wine, shopping trip, etc.	1	2	3	4	5
14. I try to evaluate how accurate my beliefs are about situations I find difficult.	1	2	3	4	5

15. I tend to mentally beat myself up when I have not done well on a task.	1	2	3	4	5
16. I am usually aware of how well I am doing as I perform an activity.	1	2	3	4	5
17. I try to surround myself with objects and people that bring out my desirable behaviours.	1	2	3	4	5
18. I use concrete reminders (eg. Notes and lists) to help me focus on things that I need to accomplish.	1	2	3	4	5
19. Sometimes I picture in my mind a successful performance before I actually do a task.	1	2	3	4	5
20. I work toward specific goals I have set for myself.	1	2	3	4	5
21. When I am in a difficult situation I will sometimes talk to myself (out loud or in my head) to help me get through it.	1	2	3	4	5
22. When I have successfully completed a task, I often reward myself with something I like.	1	2	3	4	5
23. I openly articulate and evaluate my own assumptions when I have a disagreement with someone else (it is always possible that they are right and I am not)	1	2	3	4	5
24. I feel guilty when I perform a task poorly.	1	2	3	4	5
25. I pay attention to how well I am doing in my work.	1	2	3	4	5
26. When I have a choice, I try to do my work in ways that I enjoy rather than just trying to get it over with.	1	2	3	4	5
27. I purposefully visualise myself overcoming the challenges I face.	1	2	3	4	5
28. I think about the goals that I intend to achieve in the future.	1	2	3	4	5
29. I think about and evaluate the beliefs and assumptions I hold.	1	2	3	4	5
30. I sometimes openly express displeasure with myself when I have not done well.	1	2	3	4	5
31. I keep track of my progress on projects I am working on.	1	2	3	4	5

32. I seek out activities in my work that I enjoy doing.	1	2	3	4	5	
33. I often mentally rehearse the way I plan to deal with a challenge before I actually face the challenge.	1	2	3	4	5	
34. I write down specific goals for my own performance.	1	2	3	4	5	
35. I find my own favourite ways to get things done.		1	2	3	4	5

N.F.A

INSTRUCTIONS – Think about how you go about doing your job as you read each statement. Indicate how closely each statement describes how you go about doing your job by circling one of the five numbers to the right of each item.

Key: 1=Definitely not true 2=Not true 3=Neither true nor untrue 4=True 5=Definitely true

1. I solve problems when they pop up without always getting my supervisor's stamp of approval	1	2	3	4	5
2. I search for solutions to my problems on the job without supervision.	1	2	3	4	5
3. I find solutions to my problems at work without seeking my supervisor's direct input.	1	2	3	4	5
4. I assume responsibilities on my own.	1	2	3	4	5
5. I solve my own problems without being dependent on solutions from my supervisor/manager.	1	2	3	4	5
6. I take initiatives on my own.	1	2	3	4	5

Degree of R.B.

In this section "team" refers to everyone in the office. Please consider how accurately each statement reflects the behaviour of the people in the office as a whole and mark your responses accordingly.

1. When the team is confronting a problem we always look for different interpretations and perspectives.	1	2	3	4	5
2. In the team we criticise each other's work in order to improve team effectiveness.	1	2	3	4	5
3. In the team, we are prepared to reflect on the way we act.	1	2	3	4	5
4. In the team, we evaluate our weak points in order to improve effectiveness.	1	2	3	4	5

5. In the team, we openly challenge each other's opinions. 1 2 3 4 5

6. In the team, we reassess any proposed solutions. 1 2 3 4 5

Degree of I exchange

7. In the team, we misunderstand each other. 1 2 3 4 5

8. In the team, we take the time to exchange information. 1 2 3 4 5

9. Information exchange in the team is smooth and informative. 1 2 3 4 5

Appendix 2 – Findings for 2006

Respondent	Organisational self-esteem and task interdependence	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
	A) task efficacy									
John	John thinks I am good at my job	4	2	5	4		5	2	22	3.67
Michael	Michael thinks I am good at my job	3	3	4		4	4	3	21	3.50
Nigel	Nigel thinks I am good at my job	3	3	4	4	4	4		22	3.67
Jane	Jane thinks I am job at my job		5	4	4	4	5	3	25	4.17
Carole	Carole thinks I am good at my job	4	5	5	4	4		4	26	4.33
Chris	Chris thinks I am good at my job	3	3		4	4	5	4	23	3.83
Anne	Anne thinks I am good at my job	5		4	4	4	5	3	25	4.17
Kim	Kim thinks I am good at my job	4	5	4	4	4	4	3	28	4.67

Respondent	Organisational self-esteem and task interdependence	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
	B) Frequency of interaction									
John	I deal with John frequently when carrying out my job	4	4	4	4		4	3	23	3.83
Michael	I deal with Michael frequently when carrying out my job	3	3	4		2	4	2	18	3.00
Nigel	I deal with Nigel frequently when carrying out my job	2	3	3	3	1	5		17	2.83
Jane	I deal with Jane frequently when carrying out my job		5	4	4	2	5	3	23	3.83
Carole	I deal with Carole frequently when carrying out my job	5	5	3	4	5		4	26	4.33
Chris	I deal with Chris frequently when carrying out my job	3	3		5	2	5	3	21	3.50
Anne	I deal with Anne frequently when carrying out my job	5		3	4	4	4	3	23	3.83
Kim	I deal with Kim frequently when carrying out my job	4	5	3	3	3	4	3	25	4.17

Respondent	Organisational self-esteem and task interdependence	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
	C) Task interdependence									
John	How well John performs his job affects how well I can perform my job	3	3	4	5		5	3	23	3.83
Michael	How well Michael performs his job affects how well I can perform my job	3	3	3		2	4	3	18	3.00
Nigel	How well Nigel performs his job affects how well I can perform my job	2	3	3	3	1	5		17	2.83
Jane	How well Jane performs her job affects how well I can perform my job		4	3	4	2	4	3	20	3.33
Carole	How well Carole performs her job affects how well I can perform my job	4	3	3	4	4		4	22	3.67
Chris	How well Chris performs his job affects how well I can perform my job	3	3		4	2	4	3	19	3.17
Anne	How well Anne performs her job affects how well I can perform my job	3		3	4	4	5	3	22	3.67
Kim	How well Kim performs her job affects how well I can perform my job	4	4	3	4	4	5	3	27	4.50

Respondent	Organisational self-esteem and task interdependence	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
	D) Citizenship behaviour									
John	If John had too much work to do then I would help him out	3	4	3	3		4	4	21	3.50
Michael	If Michael had too much work to do then I would help him out	3	3	4		1	5	3	19	3.17
Nigel	If Nigel had too much work to do then I would help him out	2	3	3	2	1	3		14	2.33
Jane	If Jane had too much work to do then I would help her out		5	2	2	1	4	3	17	2.83
Carole	If Carole had too much work to do then I would help her out	4	2	4	4	1		3	18	3.00
Chris	If Chris had too much work to do then I would help him out	3	3		4	1	4	4	19	3.17
Anne	If Anne had too much work to do then I would help her out	5		2	2	1	4	3	17	2.83
Kim	If Kim had too much work to do then I would help her out	4	5	3	2	1	4	3	22	3.67
	Total for task efficacy	26	26	30	28	28	32	22	192	2.87
	Total for frequency of interaction	26	28	24	27	19	31	21	176	2.63
	Total for task interdependence	22	23	22	28	19	32	22	168	2.51
	Total for citizenship behaviour	24	25	21	19	7	28	23	147	2.19

Leadership type	Type of leadership (Source: Yun, Cox and Sims, 2006)	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Directive (item 1)	When it comes to my work he/she gives me instructions on how to carry it out	2	4	4	4	1		2	17	2.83
Directive (item 3)	He/she provides commands in relation to my job	3	3	4	5	3		4	22	3.67
Directive (item 5)	He/she gives me instructions about how to do my job	3	4	4	4	1		2	18	3.00
Directive (item 7)	He/she establishes my goals for me	3	2	3	5	2		2	17	2.83
Directive (item 9)	He/she establishes my performance goals	3	2	3	5	2		2	17	2.83
Directive (item 11)	He/she establishes the goals for my work	3	3	3	4	1		2	16	2.67
Empowering (item 2)	He/she urges me to assume responsibilities on my own	3	4	4	4	1		3	19	3.17
Empowering (item 4)	He/she advises me to solve problems without always getting his/her stamp of approval	3	3	4	4	1		3	18	3.00
Empowering (item 6)	He/she encourages me to search for solutions to my problems on the job without his/her supervision	3	3	3	4	1		3	17	2.83
Empowering (item 8)	He/she encourages me to find solutions to my problems at work without his/her direct input	3	3	3	4	1		3	17	2.83
Empowering (item 10)	He/she encourages me to work together with other managers/supervisors who report to him/her	3	5	4	4	3		3	22	3.67
Empowering (item 12)	He/she advises me to coordinate my efforts with other managers/supervisors who report to him/her	3	3	4	4	3		2	19	3.17
	Total for directive leadership	17	18	21	27	10		14	107	17.83
	Total for empowering leadership	18	21	22	24	10		17	112	18.67

Strategy type	Self-leadership (Source: Houghton and Neck, 2002)	Jane	Anne	Chris	Michael	John	Carole	Nigel
Self-cueing (item 9)	I use written notes to remind myself of what I need to accomplish	5	5	3	4	5	4	4
Self-cueing (item 18)	I use concrete reminders (eg. Notes and lists) to help me focus on things that I need to accomplish	5	5	3	4	5	4	4
Self-goal setting (item 2)	I establish specific goals for my own performance	5	5	4	4	5	4	3
Self-goal setting (item 11)	I consciously have goals in mind for my work efforts	3	5	3	4	5	5	4
Self-goal setting (item 20)	I work towards specific goals I have set myself	3	5	3	4	5	4	4
Self-goal setting (item 28)	I think about the goals that I intend to achieve in the future	3	3	4	4	4	5	4
Self-goal setting (item 34)	I write down specific goals for my own performance	3	3	3	4	5	3	4
Self-observation (item 7)	I make a point of keeping track of how well I am doing at work	3	3	3	4	5	4	3
Self-observation (item 16)	I am usually aware of how well I am doing as I perform an activity	4	4	4	4	5	4	4
Self-observation (item 25)	I pay attention to how well I am doing in my work	4	4	4	4	5	4	4
Self-observation (item 31)	I keep track of my progress on projects I am working on	4	4	4	4	5	4	4
Self-punishment (item 6)	I tend to put myself down (in my head) whenever I perform poorly	3	4	2	4	5	5	2
Self-punishment (item 15)	I tend to mentally beat myself up when I have not done well on a task	2	5	2	3	5	5	4
Self-punishment (item 24)	I feel guilty when I perform a task poorly	3	4	3	3	5	4	4
Self-punishment (item 30)	I sometimes openly express displeasure with myself when I have not done well	3	4	3	3	5	4	4
Self-reward (item	When I do an assignment	3	2	3	2	3	3	3

4)	particularly well, I like to treat myself to something or some activity I especially enjoy							
Self-reward (item 13)	When I do something well, I reward myself with a special event such as a good meal, film, bottle of wine, shopping trip, etc.	3	3	4	2	3	3	3
Self-reward (item 22)	When I have successfully completed a task, I often reward myself with something I like	3	3	4	2	3	3	4
Evaluating beliefs & assumptions (item 5)	I think about my own beliefs and assumptions about a difficult situation whenever |I encounter one	3	3	3	3	4	4	4
Evaluating beliefs & assumptions (item 14)	I try to evaluate how accurate my beliefs are about situations I find difficult	3	3	3	3	4	4	3
Evaluating beliefs & assumptions (item 23)	I openly articulate and evaluate my own assumptions when I have a disagreement with someone else (it is always possible that they are right and I am not)	3	4	3	4	5	3	3
Evaluating beliefs & assumptions (item 29)	I think about and evaluate the beliefs and assumptions I hold	3	3	3	4	4	4	3
Self-talk (item 3)	Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face	2	4	3	2	5	4	2
Self-talk (item 12)	Sometimes I talk to myself (out loud or in my head) to work through difficult situations	4	4	3	2	5	4	2
Self-talk (item 21)	When I am in a difficult situation I will sometimes talk to myself (out loud or in my head) to help me get through it	4	5	3	2	5	4	2
Visualising	I use my imagination to	2	3	3	5	3	3	4

successful performance (item 1)	picture myself performing well on important tasks							
Visualising successful performance (item 10)	I visualise myself successfully performing a task before I do it	3	3	3	4	3	3	3
Visualising successful performance (item 19)	Sometimes I picture in my mind a successful performance before I actually do a task	3	2	3	4	3	3	3
Visualising successful performance (item 27)	I purposefully visualise myself overcoming the challenges I face	3	3	3	3	3	3	4
Visualising successful performance (item 33)	I often mentally rehearse the way I plan to deal with a challenge before I actually face the challenge	3	3	3	4	3	4	4
Focusing thoughts on natural rewards (item 8)	I focus my thinking on the pleasant rather than the unpleasant aspects of my job activities	3	4	4	2	3	3	4
Focusing thoughts on natural rewards (item 17)	I try to surround myself with objects and people that bring out my desirable behaviours	3	3	3	4	3	3	3
Focusing thoughts on natural rewards (item 26)	When I have a choice, I try to do my work in ways that I enjoy rather than just trying to get it over with	4	4	4	3	3	4	4
Focusing thoughts on natural rewards (item 32)	I seek out activities in my work that I enjoy doing	3	3	3	4	3	3	4
Focusing thoughts on natural rewards (item 35)	I find my own favourite ways to get things done	4	4	4	4	3	4	4
	Average for behaviour-focused strategies	3.44	3.94	3.28	3.50	4.61	4.00	3.67
	Average for self-cueing	5.00	5.00	3.00	4.00	5.00	4.00	4.00
	Average for self goal-setting	3.40	4.20	3.40	4.00	4.80	4.20	3.80
	Average for self-observation	3.75	3.75	3.75	4.00	5.00	4.00	3.75
	Average for self-punishment	2.75	4.25	2.50	3.25	5.00	4.50	3.50
	Average for self-reward	3.00	2.67	3.67	2.00	3.00	3.00	3.33
	Average for constructive thought-pattern strategies	3.00	3.08	3.00	3.33	3.92	3.58	3.08
	Average for evaluating	3.00	2.50	3.00	3.50	4.25	3.75	3.25

	beliefs and assumptions							
	Average for self-talk	3.33	4.33	3.00	2.00	5.00	4.00	2.00
	Average for visualising successful performance	2.80	2.80	3.00	4.00	3.00	3.20	3.60
	Average for natural reward strategies	3.40	3.60	3.60	3.40	3.00	3.40	3.80
	Overall average	3.28	3.54	3.29	3.41	3.84	3.66	3.52

	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Need for autonomy (self-leadership exhibited by exercising autonomy). Source: Yun, Cox and Sims, 2006)									
I solve problems when they pop up without always getting my supervisor's stamp of approval	4	4	5	5	5	5	4	32	4.57
I search for solutions to my problems on the job without supervision	4	4	5	5	5	5	4	32	4.57
I find solutions to my problems at work without seeking my supervisor's direct input	4	4	5	5	5	5	4	32	4.57
I assume responsibilities on my own	5	5	4	5	5	5	4	33	4.71
I solve my own problems without being dependent on solutions from my supervisor/manager	4	3	5	5	5	5	3	30	4.29
I take initiatives on my own	4	4	3	5	5	5	4	30	4.29
Autonomy total	25	24	27	30	30	30	23	189	27.00

	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Degree of reflective behaviour (Source: West, 1996)									
When the team is confronting a problem we always look for different interpretations and perspectives	4	3	4	4	5	4	3	27	4.50
In the team we criticize each other's work in order to improve team effectiveness	4	3	4	2	5	3	3	24	4.00
In the team, we are prepared to reflect on the way we act	4	3	4	3	5	4	2	25	4.17
In the team, we evaluate our weak points in order to improve effectiveness	3	3	3	3	4	3	3	22	3.67
In the team, we openly challenge each other's opinions	4	4	4	4	5	3	4	28	4.67
In the team, we reassess any proposed solutions	4	4	4	4	5	4	3	28	4.67
Total for reflection :-	23	20	23	20	29	21	18		

	<u>Style questionnaire for Carole</u>	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Relationship (item 2)	Acts friendly with members of the group	4	5	4	5	4	5	3	30	4.29
Relationship (item 4)	Helps others feel comfortable in the group	4	4	4	5	3	4	4	28	4.00
Relationship (item 6)	Responds favourably to suggestions made by others	4	4	4	4	3	4	3	26	3.71
Relationship (item 8)	Treats others fairly	4	5	4	5	3	5	3	29	4.14
Relationship (item 10)	Behaves in a predictable manner towards group members	4	5	4	4	5	4	4	30	4.29
Relationship (item 12)	Communicates actively with group members	4	5	5	5	4	5	3	31	4.43
Relationship (item 14)	Shows concern for the well-being of others	4	5	5	4	4	4	4	30	4.29
Relationship (item 16)	Shows flexibility in making decisions	4	4	4	4	3	4	4	27	3.86
Relationship (item 18)	Discloses thoughts and feelings to group members	4	4	3	4	4	4	2	25	3.57
Relationship (item 20)	Helps group members to get along	4	4	4	5	2	4	3	26	3.71
Task (item 1)	Tells group members what they are supposed to do	4	3	4	4	2	3	4	24	3.43
Task (item 3)	Sets standards of performance for group members	3	1	4	5	2	4	5	24	3.43
Task (item 5)	Makes suggestions about how to solve problems	4	4	4	4	3	3	4	26	3.71
Task (item 7)	Makes her perspective clear to others	4	5	5	4	5	4	4	31	4.43
Task (item 9)	Develops a plan of action for the group	4	3	4	5	3	4	4	27	3.86
Task (item 11)	Defines role responsibilities for each group member	3	3	5	5	1	5	4	26	3.71
Task (item 13)	Clarifies her role within the group	4	5	5	5	4	5	3	31	4.43
Task (item 15)	Provides a plan for how the work is to be done	3	3	4	5	3	4	3	25	3.57
Task (item 17)	Provides criteria for what is expected of the group	3	5	5	4	3	5	3	28	4.00
Task (item 19)	Encourages group members	4	5	4	5	2	5	4	29	4.14

	to do quality work									
	Total for relationship :-	40	45	41	45	35	43	33		
	Total for task :-	36	37	44	46	28	42	38		

Political skills measure for Carole (Source: Ahearn et al, 2004 (developed by Ferris et al, 1996))	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Carole understands people well	4	3	5	5	2	4	4	27	3.86
Carole finds it easy to imagine herself in the position of others	4	3	4	3	3	4	3	24	3.43
Carole is able to make most people feel comfortable and at ease around her	4	5	4	4	3	4	4	28	4.00
Carole is good at getting others to respond positively to her	4	5	5	4	4	4	3	29	4.14
Carole usually tries to find common ground with others	4	4	4	5	4	4	4	29	4.14
It is easy for Carole to develop good rapport with most people	4	5	4	5	4	4	3	29	4.14
Total for political skills	24	25	26	26	20	24	21		

Learning style results (Source: NC university web-based test)	Jane	Anne	Chris	Michael	John	Carole

Active	3	7	0	3	9	7
Reflective	0	0	1	0	0	0
Sensing	9	7	7	7	7	3
Intuitive	0	0	0	0	0	0
Visual	11	1	9	0	7	3
Verbal	0	0	0	3	0	0
Sequential	5	0	3	7	5	3
Global	0	5	0	0	0	0

<u>Appendix 3 – Findings for 2008</u>

Respondent	Organisational self-esteem and task interdependence	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
	A) task efficacy									
John	John thinks I am good at my job	4	4	4	4		4	3	23	3.83
Michael	Michael thinks I am good at my job	4	3	3		3	4	4	21	3.50
Nigel	Nigel thinks I am good at my job	4	3	4	4	3	4		22	3.67
Jane	Jane thinks I am job at my job		4	4	4	4	4	3	23	3.83
Carole	Carole thinks I am good at my job	4	4	4	4	4		3	23	3.83
Chris	Chris thinks I am good at my job	4	3		4	4	5	4	24	4.00
Anne	Anne thinks I am good at my job	4		3	4	4	4	3	22	3.67
Kim	Kim thinks I am good at my job	4	4	3	4	4	4	4	27	4.50

Respondent	Organisational self-esteem and task interdependence	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
	B) Frequency of interaction									
John	I deal with John frequently when carrying out my job	5	4	4	5		4	2	24	4.00
Michael	I deal with Michael frequently when carrying out my job	5	3	4		3	5	2	22	3.67
Nigel	I deal with Nigel frequently when carrying out my job	2	2	3	4	2	3		16	2.67
Jane	I deal with Jane frequently when carrying out my job		5	4	5	4	4	1	23	3.83
Carole	I deal with Carole frequently when carrying out my job	5	5	4	5	4		4	27	4.50
Chris	I deal with Chris frequently when carrying out my job	5	3		5	3	5	3	24	4.00
Anne	I deal with Anne frequently when carrying out my job	5		3	5	4	4	1	22	3.67
Kim	I deal with Kim frequently when carrying out my job	4	5	2	3	4	4	1	23	3.83

Respondent	Organisational self-esteem and task interdependence	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
	C) Task interdependence									
John	How well John performs his job affects how well I can perform my job	5	3	3	5		5	4	25	4.17
Michael	How well Michael performs his job affects how well I can perform my job	5	3	3		3	5	3	22	3.67
Nigel	How well Nigel performs his job affects how well I can perform my job	2	2	3	3	2	4		16	2.67
Jane	How well Jane performs her job affects how well I can perform my job		4	3	5	4	3	3	22	3.67
Carole	How well Carole performs her job affects how well I can perform my job	4	3	4	5	3		4	23	3.83
Chris	How well Chris performs his job affects how well I can perform my job	5	3		3	2	5	2	20	3.33
Anne	How well Anne performs her job affects how well I can perform my job	5		3	4	4	5	3	24	4.00
Kim	How well Kim performs her job affects how well I can perform my job	4	4	3	5	4	5	3	28	4.67

Respondent	Organisational self-esteem and task interdependence	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
	D) Citizenship behaviour									
John	If John had too much work to do then I would help him out	3	3	4	3		4	1	18	3.00
Michael	If Michael had too much work to do then I would help him out	2	2	4		2	5	1	16	2.67
Nigel	If Nigel had too much work to do then I would help him out	2	2	4	2	2	4		16	2.67
Jane	If Jane had too much work to do then I would help her out		4	3	2	3	4	1	17	2.83
Carole	If Carole had too much work to do then I would help her out	3	3	4	5	3		1	19	3.17
Chris	If Chris had too much work to do then I would help him out	2	2		4	2	5	1	16	2.67
Anne	If Anne had too much work to do then I would help her out	5		3	2	3	4	1	18	3.00
Kim	If Kim had too much work to do then I would help her out	5	4	3	2	3	4	1	22	3.67
	Total for task efficacy	28	25	25	28	26	29	24	185	26.43
	Total for frequency of interaction	31	27	24	32	24	29	14	181	25.86
	Total for task interdependence	30	22	22	30	22	32	22	180	25.71
	Total for citizenship behaviour	22	20	25	20	18	30	7	142	20.29

Leadership type	Type of leadership (Source: Yun, Cox and Sims, 2006)	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Directive (item 1)	When it comes to my work he/she gives me instructions on how to carry it out	3	2	4	5	2	3	3	22	3.14
Directive (item 3)	He/she provides commands in relation to my job	3	3	4	4	2	3	4	23	3.29
Directive (item 5)	He/she gives me instructions about how to do my job	2	2	4	4	3	2	4	21	3.00
Directive (item 7)	He/she establishes my goals for me	2	2	3	4	2	4	3	20	2.86
Directive (item 9)	He/she establishes my performance goals	2	2	3	4	3	3	4	21	3.00
Directive (item 11)	He/she establishes the goals for my work	2	2	3	4	2	4	3	20	2.86
Empowering (item 2)	He/she urges me to assume responsibilities on my own	4	3	4	5	2	5	4	27	3.86
Empowering (item 4)	He/she advises me to solve problems without always getting his/her stamp of approval	4	2	4	5	3	5	3	26	3.71
Empowering (item 6)	He/she encourages me to search for solutions to my problems on the job without his/her supervision	3	2	4	5	2	5	3	24	3.43
Empowering (item 8)	He/she encourages me to find solutions to my problems at work without his/her direct input	2	2	4	5	2	5	4	24	3.43
Empowering (item 10)	He/she encourages me to work together with other managers/supervisors who report to him/her	3	2	4	5	3	5	4	26	3.71
Empowering (item 12)	He/she advises me to coordinate my efforts with other managers/supervisors who report to him/her	3	2	4	5	4	5	4	27	3.86
	Total for directive leadership	14	13	21	25	14	19	21	127	18.14
	Total for empowering leadership	19	13	24	30	16	30	22	154	22.00

Strategy type	Self-leadership (Source: Houghton and Neck, 2002)	Jane	Anne	Chris	Michael	John	Carole	Nigel
Self-cueing (item 9)	I use written notes to remind myself of what I need to accomplish	5	5	3	3	45	5	4
Self-cueing (item 18)	I use concrete reminders (eg. Notes and lists) to help me focus on things that I need to accomplish	5	5	3	3	5	5	4
Self-goal setting (item 2)	I establish specific goals for my own performance	2	4	3	5	4	4	4
Self-goal setting (item 11)	I consciously have goals in mind for my work efforts	2	5	3	4	5	5	4
Self-goal setting (item 20)	I work towards specific goals I have set myself	2	5	3	4	5	5	4
Self-goal setting (item 28)	I think about the goals that I intend to achieve in the future	3	3	3	4	2	4	4
Self-goal setting (item 34)	I write down specific goals for my own performance	3	5	3	2	2	3	4
Self-observation (item 7)	I make a point of keeping track of how well I am doing at work	3	2	3	3	4	4	4
Self-observation (item 16)	I am usually aware of how well I am doing as I perform an activity	4	4	3	5	4	4	3
Self-observation (item 25)	I pay attention to how well I am doing in my work	4	3	3	4	4	5	3
Self-observation (item 31)	I keep track of my progress on projects I am working on	2	4	3	4	4	4	4
Self-punishment (item 6)	I tend to put myself down (in my head) whenever I perform poorly	2	5	2	4	5	5	3
Self-punishment (item 15)	I tend to mentally beat myself up when I have not done well on a task	3	5	2	4	5	5	3
Self-punishment (item 24)	I feel guilty when I perform a task poorly	4	5	2	4	5	5	4
Self-punishment (item 30)	I sometimes openly express displeasure with myself when I have not done well	2	4	3	4	5	4	3
Self-reward (item	When I do an assignment	2	3	2	2	4	3	4

4)	particularly well, I like to treat myself to something or some activity I especially enjoy							
Self-reward (item 13)	When I do something well, I reward myself with a special event such as a good meal, film, bottle of wine, shopping trip, etc.	4	3	2	2	4	4	3
Self-reward (item 22)	When I have successfully completed a task, I often reward myself with something I like	3	3	2	2	4	3	3
Evaluating beliefs & assumptions (item 5)	I think about my own beliefs and assumptions about a difficult situation whenever |I encounter one	3	4	4	4	4	5	3
Evaluating beliefs & assumptions (item 14)	I try to evaluate how accurate my beliefs are about situations I find difficult	3	4	3	4	4	4	4
Evaluating beliefs & assumptions (item 23)	I openly articulate and evaluate my own assumptions when I have a disagreement with someone else (it is always possible that they are right and I am not)	3	4	3	4	3	3	4
Evaluating beliefs & assumptions (item 29)	I think about and evaluate the beliefs and assumptions I hold	3	4	3	4	4	4	3
Self-talk (item 3)	Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face	4	4	4	4	4	4	4
Self-talk (item 12)	Sometimes I talk to myself (out loud or in my head) to work through difficult situations	3	4	3	4	4	5	4
Self-talk (item 21)	When I am in a difficult situation I will sometimes talk to myself (out loud or in my head) to help me get through it	3	4	2	4	4	4	4
Visualising successful performance (item 1)	I use my imagination to picture myself performing well on important tasks	2	3	4	5	4	4	3

Visualising successful performance (item 10)	I visualise myself successfully performing a task before I do it	2	3	3	4	5	4	3
Visualising successful performance (item 19)	Sometimes I picture in my mind a successful performance before I actually do a task	2	3	3	4	5	4	3
Visualising successful performance (item 27)	I purposefully visualise myself overcoming the challenges I face	2	3	3	5	5	4	4
Visualising successful performance (item 33)	I often mentally rehearse the way I plan to deal with a challenge before I actually face the challenge	3	3	4	4	4	4	4
Focusing thoughts on natural rewards (item 8)	I focus my thinking on the pleasant rather than the unpleasant aspects of my job activities	4	4	3	5	3	4	4
Focusing thoughts on natural rewards (item 17)	I try to surround myself with objects and people that bring out my desirable behaviours	4	3	2	3	5	4	4
Focusing thoughts on natural rewards (item 26)	When I have a choice, I try to do my work in ways that I enjoy rather than just trying to get it over with	4	4	4	3	5	5	3
Focusing thoughts on natural rewards (item 32)	I seek out activities in my work that I enjoy doing	3	4	4	3	5	5	4
Focusing thoughts on natural rewards (item 35)	I find my own favourite ways to get things done	4	5	4	3	5	5	4
	Average for behaviour-focused strategies	3.06	4.06	2.67	3.50	4.22	4.28	3.61
	Average for self-cueing	5.00	5.00	3.00	3.00	5.00	5.00	4.00
	Average for self goal-setting	2.40	4.40	3.00	3.80	3.60	4.20	4.00
	Average for self-observation	3.25	3.25	3.00	4.00	4.00	4.25	3.50
	Average for self-punishment	2.75	4.75	2.25	4.00	5.00	4.75	3.25
	Average for self-reward	3.00	3.00	2.00	2.00	4.00	3.33	3.33
	Average for constructive thought-pattern strategies	2.75	3.58	3.25	4.17	4.17	4.08	3.58
	Average for evaluating beliefs and assumptions	3.00	4.00	3.25	4.00	3.75	4.00	3.50
	Average for self-talk	3.33	4.00	3.00	4.00	4.00	4.33	4.00
	Average for visualising	2.20	3.00	3.40	4.40	4.60	4.00	3.40

	successful performance							
	Average for natural reward strategies	3.80	4.00	3.40	3.40	4.60	4.60	3.80
	Overall average	3.20	3.88	3.11	3.69	4.33	4.32	3.66

	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Need for autonomy (self-leadership exhibited by exercising autonomy). Source: Yun, Cox and Sims, 2006)									
I solve problems when they pop up without always getting my supervisor's stamp of approval	4	4	4	5	4		4	25	3.57
I search for solutions to my problems on the job without supervision	4	4	4	5	4		4	25	3.57
I find solutions to my problems at work without seeking my supervisor's direct input	4	4	4	5	4		4	25	3.57
I assume responsibilities on my own	4	3	4	5	4		4	24	3.43
I solve my own problems without being dependent on solutions from my supervisor/manager	4	4	4	4	4		4	24	3.43
I take initiatives on my own	4	4	4	5	4		4	25	3.57
Autonomy total	24	23	24	29	24		24		

	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Degree of reflective behaviour (Source: West, 1996)									
When the team is confronting a problem we always look for different interpretations and perspectives	4	4	4	3	4		3	22	3.67
In the team we criticize each other's work in order to improve team effectiveness	4	2	3	3	3		4	19	3.17
In the team, we are prepared to reflect on the way we act	4	3	3	3	4		3	20	3.33
In the team, we evaluate our weak points in order to improve effectiveness	3	4	4	3	3		3	20	3.33
In the team, we openly challenge each other's opinions	4	4	4	4	4		3	23	3.83
In the team, we reassess any proposed solutions	4	4	3	4	4		3	22	3.67
Total for reflection :-	23	21	21	20	22		19		

	<u>Style questionnaire for Carole</u>	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Relationship (item 2)	Acts friendly with members of the group	4	4	4	4	3	5	4	28	4.00
Relationship (item 4)	Helps others feel comfortable in the group	4	4	4	5	3	4	4	28	4.00
Relationship (item 6)	Responds favourably to suggestions made by others	3	4	4	4	3	3	4	25	3.57
Relationship (item 8)	Treats others fairly	4	4	3	3	3	4	4	25	3.57
Relationship (item 10)	Behaves in a predictable manner towards group members	5	4	4	5	5	4	3	30	4.29
Relationship (item 12)	Communicates actively with group members	4	5	5	5	3	4	3	29	4.14
Relationship (item 14)	Shows concern for the well-being of others	4	5	4	4	3	5	4	29	4.14
Relationship (item 16)	Shows flexibility in making decisions	4	4	4	4	4	4	4	28	4.00
Relationship (item 18)	Discloses thoughts and feelings to group members	3	3	2	4	4	4	4	24	3.43
Relationship (item 20)	Helps group members to get along	4	3	4	5	3	4	4	27	3.86
Task (item 1)	Tells group members what they are supposed to do	5	3	5	5	4	4	3	29	4.14
Task (item 3)	Sets standards of performance for group members	5	4	4	5	3	4	3	28	4.00
Task (item 5)	Makes suggestions about how to solve problems	4	4	5	4	4	4	3	28	4.00
Task (item 7)	Makes her perspective clear to others	4	4	5	5	4	5	4	31	4.43
Task (item 9)	Develops a plan of action for the group	4	5	4	5	4	5	3	30	4.29
Task (item 11)	Defines role responsibilities for each group member	4	4	5	5	3	4	3	28	4.00
Task (item 13)	Clarifies her role within the group	5	5	5	5	4	4	4	32	4.57
Task (item 15)	Provides a plan for how the work is to be done	5	4	3	4	4	3	3	26	3.71
Task (item 17)	Provides criteria for what is expected of the group	3	4	5	5	4	4	4	29	4.14
Task (item 19)	Encourages group members	5	5	5	5	3	4	3	30	4.29

	to do quality work								
	Total for relationship :-	39	40	38	43	34	41	38		
	Total for task :-	44	42	46	48	37	41	33		

Political skills measure for Carole (Source: Ahearn et al, 2004 (developed by Ferris et al, 1996))	Jane	Anne	Chris	Michael	John	Carole	Nigel	Total	Average
Carole understands people well	4	3	4	4	3	4	4	26	3.71
Carole finds it easy to imagine herself in the position of others	3	3	4	4	3	4	3	24	3.43
Carole is able to make most people feel comfortable and at ease around her	4	5	5	4	3	4	4	29	4.14
Carole is good at getting others to respond positively to her	4	5	5	4	3	4	3	28	4.00
Carole usually tries to find common ground with others	4	3	4	5	3	4	4	27	3.86
It is easy for Carole to develop good rapport with most people	4	4	5	5	4	4	4	30	4.29
Total for political skills	23	23	27	26	19	24	22		

Learning style results (Source: NC university web-based test)	Jane	Anne	Chris	Michael	John	Carole

Active	3	7	0	3	9	7
Reflective	0	0	1	0	0	0
Sensing	9	7	7	7	7	3
Intuitive	0	0	0	0	0	0
Visual	11	1	9	0	7	3
Verbal	0	0	0	3	0	0
Sequential	5	0	3	7	5	3
Global	0	5	0	0	0	0

Research instruments and results