The impacts of knowledge transfer from Educational programmes on individuals and sme business development.

Anne Smith
Caledonian Business School
Glasgow Caledonian University
Tel: 0141 331 3574
e-mail : anne.smith@gcal.ac.uk

Bryan Temple
School of Engineering and Computing
Glasgow Caledonian University
Tel:0141 331 3549
bkte@gcal.ac.uk

Abstract

The relationship between knowledge transfer and business development is discussed from the point of view of students who undertook a work-based masters programme on business development, in Glasgow Caledonian University. It considers their views both immediately following the course and after several years of reflection. Results from initial research suggested that perhaps transferable skills were equal to business interventions in terms of impacts. Results from follow up research suggests their views have matured over time finding that course content has become embedded within their persona in such a way that their business maturity has grown more through added confidence than through extensive use of tools and techniques promoted during the course.

<u>**Keywords**</u>: Knowledge transfer, work-based learning, experiential learning.
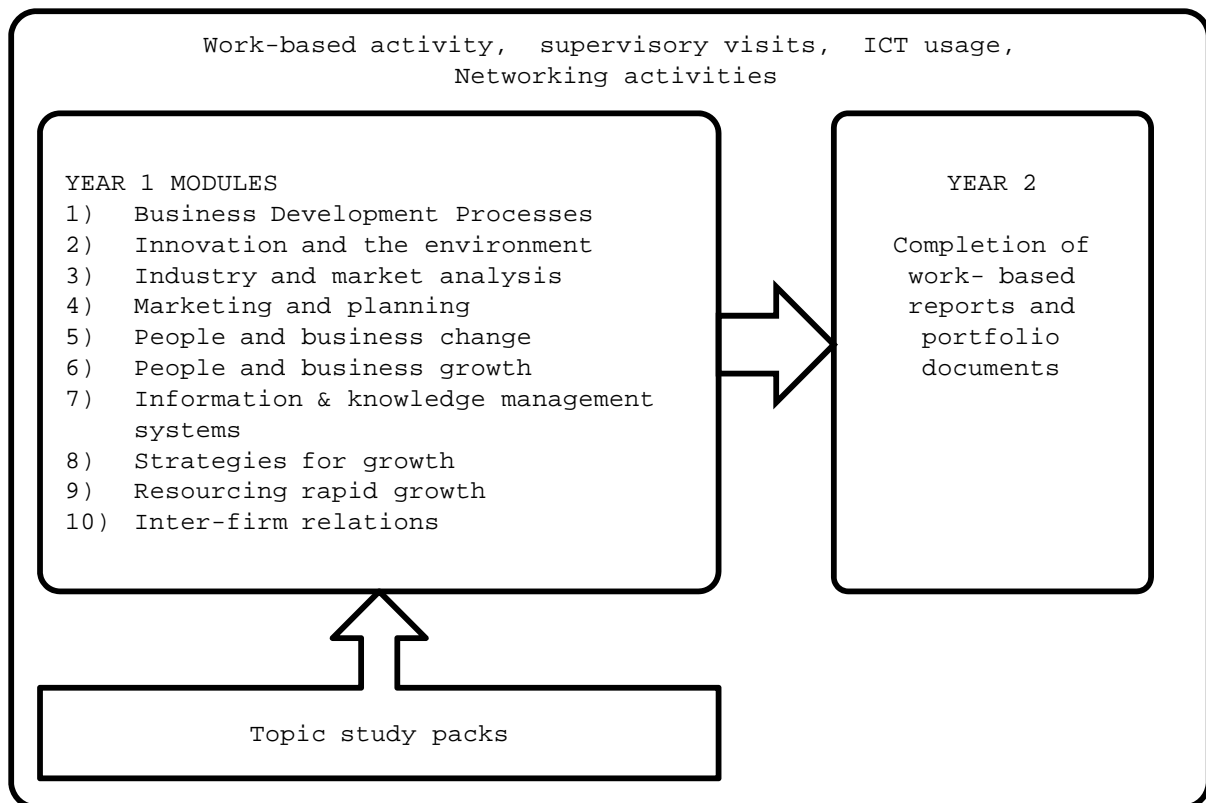
Introduction

This study explores knowledge transfer in SME. This market offers a vast and largely untapped arena for educational activities. Small and medium-sized enterprises (SME) account for 98.9% of the UK's 3.7M businesses and 56% of employment (Gov 2005). They are so significant that academics have been interested to deepen their understanding: see for example Storey (1992). Such studies indicate a reluctance to train and educate employees and also a lack of formal education in the lead entrepreneurs. This situation is perhaps different in the high technology firms.

The paper analyses the reaction of students who undertook a Masters level programme in business development and who were all employed by Scottish companies. The Business Development Programme is a flexible, work-based postgraduate programme for owner managers and senior executives, which aims to provide individualised support through an active process of business planning and implementation. The learning programme and the work carried out for assessment purposes aims firstly to provide a strong base of knowledge and expertise about business development and secondly to contribute directly to advancing the business ambitions of both the individual participants and their companies.

Programme Description and design

The main part of the programme is delivered through work-based learning centred on a series of classroom-based seminars that are spaced one to two months apart. They cover the subjects shown in figure 1.

Figure 1: MSc Business Development: Programme design structure

```
┌──────────────────────────────────────────────────────────────────────┐
│          Work-based activity,  supervisory visits,  ICT usage,         │
│                        Networking activities                           │
│  ┌──────────────────────────────────────────┐    ┌──────────────────┐ │
│  │                                            │    │                  │ │
│  │  YEAR 1 MODULES                            │    │      YEAR 2      │ │
│  │  1)  Business Development Processes         │    │                  │ │
│  │  2)  Innovation and the environment         │═══▶│  Completion of   │ │
│  │  3)  Industry and market analysis           │    │  work- based     │ │
│  │  4)  Marketing and planning                 │    │  reports and     │ │
│  │  5)  People and business change             │    │  portfolio       │ │
│  │  6)  People and business growth             │    │  documents       │ │
│  │  7)  Information & knowledge management      │    │                  │ │
│  │      systems                                │    │                  │ │
│  │  8)  Strategies for growth                  │    │                  │ │
│  │  9)  Resourcing rapid growth                │    │                  │ │
│  │  10) Inter-firm relations                   │    │                  │ │
│  │                 ▲                           │    │                  │ │
│  └─────────────────│───────────────────────────┘    └──────────────────┘ │
│  ┌─────────────────│──────────────────────────┐                          │
│  │            Topic study packs                │                          │
│  └────────────────────────────────────────────┘                          │
└──────────────────────────────────────────────────────────────────────┘
```

In the month before the seminar, through a combination of directed reading, exercises and individual consultations, each participant begins to analyse their own work-based situation in the light of leading-edge management thinking. In the highly interactive environment of the seminar, participants engage in a series of exercises and discussions, drawing on their own experiences and those of the rest of the group as well as those of guest speakers. Following the seminar, the students must prepare reports that relate the work of the module to their own business situation. They are supported by specialist tutors who also facilitate the seminars and assess the reports.

The work in the seminars provides a substantial base from which to build an integrated development plan sympathetic to the objectives of the individual business. This may be either a major project (dissertation) for the whole business or a smaller project for the development of an aspect of the business. A combination of written and oral presentations, coupled to substantiating documentation, provides an assessable record of learning translated into effective practice.

Key features of this format are:

- Work-based learning: Participants focus all their work in the programme on the real needs of their business.
- Structure: The combination of work-based and classroom-based learning brings a helpful degree of structure and focus while tailoring individual learning around the work-based situation.
- Peer support and shared experience: Each participant brings their own, living case study into the classroom for analysis by the group.
- Mentoring: Each participant has one or more mentors with appropriate business experience who are committed to supporting the learning process.
- Integration: In addition to specialist support, participants are supported throughout the programme by an individual supervisor whose role is to ensure that the different components are coming together effectively and the needs of the individual and his/her company are being met.

Knowledge Issues Surrounding the Programme Philosophy

Developmental potential

"Developmental Potential" can be defined as a property of a company that is a driver for growth. It encompasses a number of company attributes but we are concerned here with knowledge and its exploitation in SME for it is from this sector that all the students attending the Masters programme were drawn.

We are particularly concerned to identify the nature of companies that would encourage employees to attend. "SME have some advantages [over the larger company] because of their size. Many are flexible and have strong relationships with customers, enabling rapid response to technical and market shifts" (Scozzi et al 2005). The ability to innovate is clearly an indication of a high developmental potential but, although some SME are able to exploit their flexibility, many do not innovate at all (Scozzi et al 2005). Some of the most innovative are small, young firms (Gray 2006) that are run by well educated graduates, the so-called "super-growth" companies (Coopers and Lybrand 1994). There also seems to be strong linkages between technology, entrepreneurs and connectivity (Diamante and London, 2002). Thus the idea has grown that clustering of firms enhances competitive innovation (Mitra 2000). Even so, clustering is not in itself a driver for change since there must be an interchange of ideas, so knowledge frameworks and networks are equally important (Scheel 2002). It follows, therefore, that both companies and the individual employees must play equal parts in this sort of interaction: one must have supportive and innovative management to empower the individual. Viewed as a system, it is unrealistic to separate the company from the individual (Massey 2006) but it is true that knowledge of the individual is a prerequisite for innovative potential.

Knowledge transfer

The nature of knowledge is associated very closely to individuals, their values, their motivation and their environment. It is the individual's ability to collect data from different sources, to find linkages and attribute to it some useful meaning that is the nature of an entrepreneur (Nonako 1992, Fahey and Prusak 1998, Wickert & Herschel 2001, Sparrow 2001, Bender & Fish 2000). Equally, 'knowledge' may be either explicit or tacit. Explicit knowledge is by nature something that we can find in text books and manuals. Tacit knowledge however is the challenge of the subjective and informal level; it is the knowledge that we have but cannot really explain it (Polanyi, 1958). An ability to do this is critical for the well

being of an SME, the question is how can an educational institution help stimulate this form of activity through course design?

Creating the knowledge (explicit and tacit) is a very people based art whose success is strongly dependant on the life experiences one brings to the "classroom" (Fahey and Prusak 1998). That a company can benefit from this is dependent on both the ability of the individual employees, the management attitude and the networking relationships (Osterloh and Frey 2000). Fundamentally, however, assimilation of the information can only be used within a person's frame of reference and that is ultimately their experience. Interpretation of information then is key to the formation and creation of knowledge and it is for this reason that the degree programme opted to use experiential and action based learning in a work based learning environment.

Work based learning

"Work-based learning is interested in both explicit and tacit knowledge ... [but] it requires a new epistemology of practice that seeks to explore not just the explicit instructions and guidelines available in the workplace but also the tacit processes invoked by practitioners as they work through the problems of daily management" (Raelin 1999). Both reflection and action learning are key components in work based techniques which differ from "experiential learning" (Grisoni 2002) in the devotion to real world problems rather than classroom simulations. However, both experiential and work-based learning methodologies place great emphasis on diagnosis, planning, change and evaluation, basically the learning cycle of Kolb (1984) and equivalent to the "plan-do-check-act" Demming cycle well known to those interested in quality issues.

Our course was designed to incorporate the issues, discussed in the preceding sections, into a work-based package. Thus the seminars and work based reports incorporated networking, connectivity, reflection and action learning with the intention of stimulating an enhanced awareness of business processes and how they may be exploited in new ways.

Methodology of Study

The purpose of the study was to understand the content and process of the transfer of knowledge derived through work based learning. Data was gathered from one cohort of students giving a population of 15 of which there were 14 respondents. Such a small population denies any significance being attached to quantitative methods but, nevertheless, a questionnaire was circulated to the cohort to gain their impression of the degree programme. These results served to inform the content of semi-structured interviews held after several years had elapsed, the purpose of which was to gain a more considered and reflective response concerning the learning gained from the degree programme.

The questionnaires asked them to identify impacts that they would attribut to their participation in the programme. Questionnaire design was influenced by European Social Fund Application guidelines, which suggest areas of consideration to measure any programme impacts. Other variables were included in the questionnaire that reflected previous business growth studies. (FSB 2002).

Three years later, three of the respondents, who completed the course successfully, took part in semi-structured interviews. They were asked to reflect on the programme within the scope of the following topic headings:

- Module content
- Relationships with academic

- Business impacts
- Personal impacts
- Use of theory in the business practice
- Networking
- Transferable skills

Results from the Initial Study

Sponsoring company characteristics

There was a good cross-section of company sizes within the SME parameters, as well as a good range of industries and legal structures as shown in table 1.

Table 1: company profiles of students on the programme

Housing Associations	Packaging & processing	Healthcare & Biotechnology	Community Business	Transport	Retailer	Distribution
3	4	2	3	1	1	1

The proportion of firms that are either "third sector" or "not for profit" as compared with "private sector", 6 out of the total of 15, is probably reflective of the region, since many of the firms within the Glasgow hinterland have embarked on social agendas and operate with such a legal structure.

Table 2: gender balance and student profile

Male	Female	Owner / Self employed	Manager / employee
8	7	7	8

The gender balance of programme participants was fairly equal (table 2) as was the number of owners to managers. However, completion rates at Masters level were higher for the owner/self-employed group than for the manager/employee group. More manager/employees exited the programme at diploma level. Whether this relates to personal drive and commitment is yet to be established but the possibility might be that once the theoretical issues had been delivered, the employees were under pressure to commit more to their company activities.

Table 3 (below) shows how all but two of the participating companies returned increased turnover for the period of the masters degree programme. In addition, all of them increased their number of employees.

Table 3 Turnover for the participating companies over two years

Company	Turnover start of programme	Turnover at end of programme	Change
1	0	60k	⇧
2	3.5m	4.2m	⇧
3	250k	750k	⇧
4	35k	35k	⇕
5	5m	5m	⇕
6	4m	4.5m	⇧
7	380k	430k	⇧
8	1.75m	2.2m	⇧
9	1.1m	1.35	⇧
10	250k	300k	⇧
11	18k	186k	⇧
12	2.3k	2.8k	⇧
13	432k	435k	⇧

Impacts on Business practice

The respondents were asked to name those aspects of the course that had most impact on their business practice. These are shown in table 4 where they have been categorised into personal and business issues and further sub-divided into Knowledge, attitude, product, techniques and strategy.

Impacts from Networking

The three most popular networking themes that were reported are:

- Increased turnover
- Ideas for strategic alliances
- Peer support

Students were encouraged to improve their networking skills throughout the course and in particular within the seminars and workshops. 70% of the students said that they had gained from this experience. Several mentioned that they would like to think they would gain from it but had not yet done so.

When asked to comment on benefits arising from networking, the majority put forward business issues rather that personal ones: some respondents suggesting that this new skill had contributed to getting new business. It was significant to note that some of the businesses were also beginning to consider partnerships and strategic alliances as a consequence of the programme.

Impacts from supervisory visits

The most popular themes concerning the impact of supervisory visits were:

- Create new ideas
- Deal with specific issues
- Customisation of reports
- Clarification of modules

- Supportive

The supervisory visits were very popular with 90% of the students gaining two or more positive impacts from them but they are very time consuming and also very demanding for the supervisor. However, the responses suggest that they are an absolutely critical component of the programme: the firms in the study clearly felt supported by the relationship built between themselves and the university supervisor. In fact the visits seemed to reinforce learning through its application to their work place, not least because the visits enabled the various coursework reports to be customised in favour of the enterprise. This contextualisation is likely to be significant in view of the broad agreement expressed by the respondents who represented a very wide spectrum of companies as mentioned earlier in this report. Equally the ability for a supervisor to translate an external work-based situation into a robust academic environment demonstrates a type 2 University environment. Naturally, the supervisors gained by the experience of visiting real environments.

Table 4: Impacts on business practice

Impact themes	Personal	Business	
Improved mgt knowledge	▓		knowledge
Greater knowledge generally	▓		
Increased market knowledge	▓		
Improved business relationships	▓		
New focus	█		attitude
Better understanding	█		
Able to implement change	█		
Increased confidence	█		
Networking opportunities	█		
Questioning current practice	█		
New business ideas	█		
Product range improvement		▓	product
New product Innovation		▓	
Production of working documents		░	techniques
Planning		░	
Creation of business plan		░	
Gathering market data		░	
Investment in new technology		█	strategy
ICT improvements		█	
Business Opportunities		█	
	11	9	

Learning Constraints

The themes considered to most constrain learning were:

- Reading texts
- time

Many of the students had not studied for some time, some had not experienced higher education. They found the additional work very difficult to dovetail into a busy working day. More importantly, they found reading when tired to be very taxing. The programme team thought that the strength

of their design of programme was its flexibility, taking into account the many demands and tensions of the SME, but clearly more is needed to be done.

Electronic communication (ICT), Outputs and equal opportunities.

Table 5: summary of issues raised in these three areas:

ICT's	All of the students said they used ICT's, however the majority used it for transferring documents rather than a discussion forum. The majority did however identify websites and e-communication as a useful way to communicating more.
Work based reports	These reports are an integral element of the programme. All of the students rated them positively. All students considered them a useful working document for their company and furthermore that they made a difference or impact on the business.
Equal opportunities	Many of the firms within the programme have been exposed to "Investors in People" and therefore all had an "equal opportunities" policy of some sort. Some respondents did indicate that the programme was helping to develop ideas for some of these policies.

Results from follow up study

Case 1

This interviewee is a Director of a housing association employing 16 staff. Housing associations by nature exhibit characteristic of social firms. They operate on a financial surplus/deficit system and often experience growth constraints in terms of new income streams and limited public sector customers. Given a not for profit status they can, however, position themselves to harness advantages of market forces in the private sector. In this case the firm has continued financial growth.

The respondent was asked to reflect on the masters programme. Very quickly, she attributed the firm's positive position to her influence and the confidence she had gained during the programme. When asked if she was confident to attribute the success she replied "most definitely". The respondent continued on the topic of reflection noting that she has been able to function more successfully as a director, could now delegate effectively and she involved others in her team much more in regular team "brainstorming" sessions. It reflected on her greater self-confidence. A key discussion point surrounded the notion of reflective practice. The respondent was very keen to emphasise that this was now a significant part of how she works and develops the business. Again the respondent was asked about how confidently she could attribute this practice to the programme and again the answer was "most definitely".

Relationships with fellow students and academics were explored. The use of networks on the programme was identified as important but not essential. Relationships with academics depended very much on the individual as some were thought to lack understanding of the small business environment and who failed to relate theory to practice in the work place.

Further discussion topics covered ideas of how tools and techniques for business development and growth were utilised several years afterwards but

she very much identified the development of her transferable skills, more than business tools and techniques, as being attributable to the programme. She rated herself as being much more innovative as a result of the programme experience with more personal confidence and with a much more reflective approach to work enabling her to look for business opportunities and position oneself accordingly. This, she said, was essential to her growing the business.

Case 2

This respondent was a daughter in a family run business. Concerned with biotechnology processing, it has succession issues. At the beginning of the interview the respondent was very quick to identify the "capstone" project (which was a succession plan) as the most relevant component. It was now three years later and her learning was being put into action. She very much believed that the relevance of the project was a reason why she rated the programme positively in terms of impact and specifically the freedom to choose ones own topic and to frame it within the context of her own workplace. The respondent clearly stated that she had gained significant confidence during the masters programme and was able to "talk confidently about succession issues with professionals". The respondent believed that the tools and techniques of theory delivered in the programme had indeed been useful and she admitted to regularly using porter's Competitive Advantage of Nations which, she believed, had real value that could be related to the family business. The respondent commented on her reason for undertaking the programme, which was to get a qualification, but she also revealed her unbeatable determination to succeed at it.

She went on to comment how some academics appeared not to empathise with the small business situation, appearing to be rather "corporate" but in contrast she got strong support from her peer group on the programme.

Case 3

This respondent is one of two directors of a packaging enterprise which is primarily positioned to serve the food industry. The firm employs 5 staff of which two are the directors themselves. The company was established during the period when there was extraordinary growth of the electronic industry in Scotland and positioned itself as a packaging provider to the electronics industry. However, during the course of her Masters programme the electronics industry declined in Scotland and her company re-positioned itself within the food retail sector. The respondent confidently attributed improved 'transferable skills' and in particular 'confidence' to the programme, along with others such as 'opportunity recognition' and 'reflection'. The respondent was very clear that business development tools and techniques now employed within the business could be directly attributable to the programme. Specifically, lessons in innovation and creativity by "thinking out of the box". Relationships with the peer group were considered important and the networking concept had been put into practise through a business opportunity created between herself and a fellow student.

The successful change in direction of the business was more attributed to transferable skills rather than business skills as the respondent believed it was confidence in abilities and motivation that had grown the business. She commented that before the course, she had considered herself a junior director to her partner who was extremely entrepreneurial. However, her increased confidence moved her from a purely administrative role to a fully participative innovator in her own right. Now the business was an equal partnership with roles split between market orientation (herself) and technology orientation (her partner).

Perhaps the strongest point made by this respondent was the linkage of her changed parenting skills with her personal development, which she considered attributable to the programme. This strong statement emphasises the idea that personal impacts were just as significant for this individual.

Discussion

The questionnaire results for the impact on business practice (table 4) suggested that there were personal and business impacts in equal proportion. However, reflection and several years on, the immediate impression appears to favour transferable skills as having the most significant impact. In fact, most of the companies were small and all who completed the programme held significantly influential positions within them. Consequently, one might expect that any gains, personal or otherwise, would find their way into the companies. This translation of learning opportunity into commercial gain has been clearly indicated by the reflective interviews held after a long period during which the respondents had ample time to reflect on the long term impact of the programme: it was their confidence and attitude that had proved to be key.

Increased confidence is perhaps less a transferable skill than a state of mind developed through a number of small positive experiences and over time. Work based learning environments are designed to compress into a short time span many more of these small positive experiences and to provide scenarios where positive learning and application is individual and relevant. Thus in each of the three case studies the respondents highlighted the importance of mapping theory into practice and were critical of academics who did not empathise with the work environment and the "real" project (Raelin, 1999).

The questionnaire showed that most of the companies supplying students to the programme, were growing (figure 3) and if we are to believe Coopers and Lybrand (1994) or Gray (2006) the management of such companies is likely to favour education and these sort of firms may be attracted to learning opportunities. The idea of developmental capability, which suggests that the individual cannot be isolated from the performance of the business in business development and growth, (Scozzi et al 2005) may pertain here.

The issue of developmental capability was evident in the case interviews. Case 2 declared that she was determined to succeed in the programme. Case 1 strongly related her personal development to the success of the firm as did case 3. Case 3 perhaps represents an extreme example where as a person and a parent she had demonstrated such capability and had "changed her mindset" to the extent that she now approached her children differently, with a view to their development.

In an earlier section the concept of "knowledge transfer", "networks", "clusters" and "system" was introduced in the context of SME. Together they represent a "learning system" within which enhanced knowledge transfer can benefit all the companies within the cluster (Mitra 2000). Perhaps we should extend this concept to individuals and talk in terms of an individual's learning system. In this scenario, one learns over ones whole life and the Master programme is merely a visitor that provides some input but for which the true impacts are only apparent following maturity over time. Thus the idea that learning is not a process but an element of an individual's learning system and such confidence as has been attributed to the programme may merely be the result of a number of positive experiences that the programme created as it intersects the individuals learning system.

Conclusions

The results showed that students were very positive about the MSc Business Development programme thinking that there were positive impacts on both themselves and their businesses so the work-based model used for the design and delivery of the programme was shown to be effective.

Over the longer term, reflection has shown how much of the gain was related to the personal qualities which have, themselves, influenced performance in the workplace. If this is true, then one must question the content of many degree courses. Perhaps the most notable issue is the idea that an individual uses interventions such as the MSc Business Development to connect to their own learning system. It suggests that more consideration should be given to programme flexibility, subject relevance and how and when to connect with an individual's learning system. It raises the question: do we concentrate too much on content and not enough on comprehension?

References

Bender, S and Fish, A. (2000) 'The transfer of knowledge and the retention of expertise: the continuing need for global assignments', *Journal of Knowledge Management* 4 (3) pp125-137.

Coopers & Lybrand (1994), Made in the UK: The Middle Market Survey, Coopers & Lybrand, London.,.

Diamonte,T., London, M., (2002), "Expansive leadership in the age of digital technology", *Journal of Management Development*, Vol. 21, No. 6, pp.404-416.

Fahey, L. and Prusak, L. (1998) 'The eleven deadliest sins of knowledge management', *California Management Review*, 40 (3) pp. 265-276.

FSB 2002: "Lifting the Barriers to Growth in UK small businesses 2002" Federation of Small Businesses, UK. http://www.fsb.org.uk/

Grisoni, L, (2002) Theory and Practice in Experiential Learning in Higher Education, *The International Journal of Management Education*, 2 (2) pp40-52

Gov (2005): www.sbs.gov.uk, 2005

Gray, C. (2006), "Absorptive capacity, knowledge management and innovation in entrepreneurial small firms", *International Journal of Entrepreneurial Behaviour and Research*, Vol. 12, No. 6, pp. 345-360.

Kolb, D.A. "Experiential learning" Prentice hall, Englewood Cliffs

Massey, C. (2006), "A new conceptualisation of business development for SME: a focus on development potential", *Environment and Planning C: Government and Policy*, Vol.234, pp37-49.

Mitra, J. (2000), "Making connections: innovation and collective learning in small businesses", *Education and Training*, Vol. 42, No.4/5, pp. 228-237.

Nonaka, I, (1992) 'The knowledge creating company'. *Harvard Business Review* Nov –Dec

Osterloh, M and Frey, BS (2000) 'Motivation, knowledge transfer, and organisational forms', *Organizational Science,* 11 (5) pp.538 550.

Polanyi, M (1958) *Personal Knowledge:Towards a post-critical philosophy.* Chicago, Ill., University of Chicago Press.

Raelin,J,A, (1999) The Design on the Action Project in Work –Based Learning, *Human Resource Planning*, 22 (3) p12

Scheel, C (2002), "Knowledge clusters of technological innovation systems", *Journal of Knowledge Management,* Vol. 6, No. 4, pp. 356-367.

Scozzi, B., Garavelli, C., and Crowston, K.,(2005), "Methods for modelling and supporting innovation processes in SMEs", European Journal of Management, Vol. 8, No. 1, pp. 120-137.

Sparrow, J, (2001) 'Knowledge management in small firms', *Knowledge and Process Management* 8 (1) pp 3-16.

Storey, D.J., 1994, Understanding the Small Business Sector, Routledge, London

Wickert, A, Herschel, R, (2001) 'Knowledge-management issues for smaller businesses', *Journal of Knowledge Management* 5 (4) pp. 329-337.