

Learning Among Entrepreneurs in Formal Networks: Outcomes, Processes and Beyond

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Sincerely,

Pontus Bergh, Licentiate in Business Administration

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Abstract

This dissertation focuses on how entrepreneurs learn to acquire entrepreneurial knowledge and competence, which ultimately can open doors to business success. Contemporary critics suggest that programs designed to develop general competence are not sufficiently relevant to these entrepreneurs. On the other hand, scholars and practitioners have recently noticed that external relations in formal learning networks can be a notable opportunity for learning among entrepreneurs. The aim of this dissertation is to elaborate on the processes and outcomes of government supported learning networks among entrepreneurs who work in small and medium sized enterprises. It draws on reports of four separate but interrelated research studies that author conducted.

The research described in the dissertation is based on multiple theoretical perspectives, methodologies, and data sources. To gain a full understanding of the experiences of the different network participants, as well as the interactive processes within the learning network, data were collected from multiple sources: interviews, participant observation, and videotaping. The conclusions stated in appended paper 1 and 2 are primarily based on the interviews, but they are also supported by the observations and written material. Paper three focuses on the videos in combination with the interviews. Finally, to complement the qualitative research with insights regarding the relationships among trust, learning, and self-efficacy, the last paper reports the results of a quantitative survey study.

The dissertation makes several major contributions to our existing knowledge. First and foremost, by combining entrepreneurship theory and learning theory, it describes the outcomes that can emerge from formal learning networks and shows how these outcomes can have entrepreneurial consequences. Second, it suggests how the learning situation can be characterized and describes an appropriate learning environment for entrepreneurs. The research also contributes to theory on the development of trust in formal learning networks and how this trust contributes to entrepreneurial learning. The dissertation concludes by offering suggestions for learning and the exploitation of business opportunities through the construction and utilization of learning networks.

Appended papers

1. Bergh, P. 2008. Swedish interorganizational learning networks: Outcomes in three dimensions. *Int J Bus Globalisation* 2:56-71.
2. Bergh, P. 2010. In press. Entrepreneurs in learning networks: Problems, opportunities, and implications for program design. *Int J Bus Globalisation*.
3. Bergh, P, Thorgren, S. Wincent, J. 2010. In press. Entrepreneurs learning together: The importance of building trust for learning and exploiting business opportunities. *Int Entrepreneurship Manage J*.
4. Bergh, P, Thorgren, S. Wincent, J. n.d. Trust and self-efficacy in formal learning networks: The effect on entrepreneurs' capacity to act upon business opportunities. Forthcoming.

Keywords: formal learning networks, learning, entrepreneurs, business opportunities, learning outcomes, learning situation

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Appended papers

- 1. Swedish interorganizational networks: Outcomes in three Dimensions**
- 2. Entrepreneurs in learning networks: Problems, opportunities, and implications for program design**
- 3. Entrepreneurs learning together: The importance of trust building for learning and ultimately business exploitation**
- 4. Trust and self-efficacy in formal learning networks: The effects on entrepreneur's capacity to act upon business opportunities**

Introduction

This dissertation elaborates on the outcomes and processes of formal learning networks among entrepreneurs working in small and medium sized enterprises¹. It is based upon four separate but interrelated research papers. This introductory chapter, provide the background for the research by presenting the central concepts, revealing the gaps in previous research, and explaining the purpose of the dissertation. This chapter also describes the overall research process and the disposition of the dissertation.

The Importance of Learning in Entrepreneurial Activity

Entrepreneurs earn their living by recognizing and acting on business opportunities. In small firms, the entrepreneur, who serves as both the owner and the manager, has the responsibility to act on business opportunities which can lead to major strategic changes in the business (Duncan and Weiss, 1979; Storey, 1994). Thus, if entrepreneurs are to successfully provide goods and services to markets, they need the capability to exploit business opportunities (Reynolds et al., 2002) involving the introduction of new goods, services, raw materials, and organizing methods (Shane & Venkataraman, 2000). Why are some entrepreneurs and their firms more successful than others in achieving returns from these opportunities through their activities and investments? There are obviously several explanations for the differences in success. These include market conditions (eg., Porter, 1990), strategic alliances (eg., Gulati, 1998), institutional environment (eg., Aldrich, 1999), and even luck. Another possible explanation may be found in the specific types of knowledge entrepreneurs acquire and develop for handling the exploitation process (Choi and Shepherd, 2004; March, 1991; Sanchez 1996; Shane, 2003). Recognizing the importance of this knowledge, I will focus in this dissertation on how entrepreneurs learn to develop entrepreneurial knowledge and competence, the achievement of which ultimately can open doors to further exploitation of business opportunities (cf., Corbett, 2005).

Learning is generally defined as the processes, as well as the identifiable and relatively permanently changes in knowledge, that result from human interactions in specified contexts (cf. Brown & Dugid, 1991; Kolb, 1984; Lave & Wenger, 1991). An a priori assumption in this

¹ Small and medium sized enterprise (SME) are defined as having 1-250 employees (eg. Story, 1994).

dissertation is that opportunities are created through ongoing learning, rather than discovered as something pre-existing (Alvares and Barney, 2007).

Entrepreneurial knowledge, or the ability to identify and exploit business opportunities (Polities, 2005), is considered vital for the survival and growth of small enterprises (Hoang and Antoncic, 2003; Macpherson and Holt, 2007; Penrose, 1959). Such knowledge can be built, for example, on networking skills, the ability to analyse market conditions, and the courage to implement one's ideas. However, entrepreneurs working in small and medium sized enterprises face several problems related to learning and the creation of entrepreneurial knowledge (Chaston et al. 2001; Gibb 1997; Florén, 2005; Pedler et al. 1997; Storey; 1994; Ylinenpää, 2005; 1997). First, compared to large-company entrepreneurs, small-company entrepreneurs tend to have less formal education and lack specific qualifications in strategic management (see Nooteboom, 2006; Roure, 1997). Hence, these entrepreneurs run their businesses on personal experience and common sense (Bolton, 1971). Second, formal management education and training are seldom an option for these entrepreneurs because of their lack of educational experience and their tendency to distrust formal education (Perren and Grant, 2001). Another problem is that entrepreneurial knowledge is very hard to develop through formal education alone (Minniti and Bygrave, 2001). Learning for small-firm entrepreneurs is more likely to be informal and ad-hoc (Ekanem and Smallbone, 2007; Ylinenpää, 2005). In addition, several researchers have argued that because entrepreneurs in small firms must focus on action and survival, they may lack the time necessary for the reflective processes needed for learning at a high level (Florén, 2005; Johansson et al., 1998). In line with this focus on action, these entrepreneurs prefer to learn through trial and error by doing than through thinking (Kolb, 1976, 1984). Finally, a lack of manpower or financial resources (Cope, 2003; Curran & Blackburn, 2001) might affect how much time and other resources these entrepreneurs choose to invest in the learning needed to increase their ability to establish and develop a successful business (cf. Cohen and Levinthal 1990).

The above considerations show that entrepreneurs² face many different types of problems on the path of learning and creating entrepreneurial knowledge. Engaging in relevant competence-enhancing and development programs is one promising way to improve the

² In following text entrepreneur should be understood as an entrepreneur in a small and medium sized enterprise

situation. However, contemporary critics suggest that general competence development programs are not sufficiently relevant for these entrepreneurs. If such programs fail to take account of the entrepreneurs' needs and the particular conditions they characteristically face, there is a risk that they will not benefit entrepreneurs and facilitate the success of their ventures.

The criticisms of most programs are based on the knowledge that entrepreneurs in small firms often play multiple roles and are therefore generalists, not specialists (Florén, 2005). As a result, conventional courses and specialist management training (with relatively high costs) may be impractical for an entrepreneur in a small firm (Fuller-Love, 2006; Sadler-Smith et al., 2000). This problem also applies to computer-based and distance learning, because the entrepreneur needs to interact face-to-face with other entrepreneurs (Florén, 2005; Sadler-Smith et al., 2000). In addition, the financial constraints of small firms often mean that it is impossible for a single firm to design a program that will meet its needs.

Finally, most general competence development programs do not focus on solving specific business problems. For training to be effective, there is a need for careful analysis of training and development needs, but small firms tend to have less developed formal planning systems, which makes it difficult for them to analyze their own needs for strategic development (Penn et al., 1998). While there has been extensive research to investigate pedagogical models in formal education, there is little knowledge about how entrepreneurs can learn in ways other than formal education (Gibb 1997; Storey, 1994). The distinctive nature of learning of entrepreneurs and the appropriateness of programs to support learning and development in small and medium-sized enterprises have been largely unexplored. Hence, entrepreneurs need alternative programs to develop their entrepreneurial knowledge and competence. However, scholars and practitioners have noticed that external relations in networks can be a noteworthy possibility for entrepreneurs' learning.

The next section will describe what research has given us so far about how formal policy-led learning networks may solve the problems related to entrepreneurs' capacity to learn how to exploit business opportunities.

Formal Learning Networks: A Possible Method for Learning and Development

A network can be defined as a set of actors connected by a set of ties. The actors can be people, teams or organizations (for a review see Borgatti and Foster, 2003). Networks in which firms co-operate to gain competitive advantage have been described in a number of ways and for a

variety of purposes (Bessant et al., 2003; Hoang and Antoncic, 2003; Huggins, 1998). Provan et al., (2007) defined such networks as constellations of representatives from organizations that come together through the social contracts or agreements rather than legally binding contracts. Firms that utilized such networks identified more business opportunities than those that searched by themselves (Singh et al., 1999).

One form of network is the formal policy-led learning network. Bessant and Francis (1999:377) defined learning networks as “network(s) formally set up for the primary purpose of increasing knowledge, expressed as increased capacity to do something.” These networks are built for a reason and can therefore be defined as formal (Hallén, et al., 2009). Hence, these types of formal learning networks have a structure for operation with boundaries defining participation and they are limited in time. These networks are characterized by cooperative processes when participating entrepreneurs solve problems and learn together. A typical formal policy-led learning network is established with the help of university experts or consultants (i.e., a hub) (Huggins, 2000). Together, these actors provide a non-hierarchical arena for experience exchange and learning which are expected to increase entrepreneurs’ ability to take advantage of business opportunities. The development of these functional social interactions is an important as well as an incremental process. Such an incremental process involves the formation of agreements on working methods, group norms and, not least, open communication.

For entrepreneurs starting and managing smaller firms, learning networks in which other entrepreneurs participate may be a useful way to address demands on competence and business development (Inkpen and Tsang, 2007; Macpherson and Holt, 2007; McAdam and Keogh, 2004; McGovern, 2006; Venkataraman, 1997). For business development, internal consulting and reflecting is often insufficient. External sources are often needed to initiate and stimulate improvements and tangible effects (Street and Cameron, 2007; Zang et al., 2006). Therefore, once entrepreneurs have established their ventures, they cannot advance on their own (Hoang and Antoncic, 2003; Tell, 2001). Help from outsiders may enable entrepreneurs to gain both explicit and tacit knowledge with the potential to influence their firm’s long-term ability to survive, grow, and innovate (Chrisman and McMullan, 2000; Jones and Macpherson, 2006; Lockett et al., 2008; Macpherson and Holt 2007). Hence, risk arises if entrepreneurs isolate their venture’s ideas and miss the potential inherent in joint learning with other entrepreneurs and with experts who can provide a learning arena based on reflection on work related problems (Florén, 2005).

As mentioned, the type of learning network that is studied in this dissertation is set up by university experts or consultants for the purpose of increasing entrepreneurs' knowledge. In order to do this the formal learning networks have an experiential learning design, they are built on open experience sharing, and on joint learning. Furthermore, by integrating experiential problem solving (Schön, 1983) with theoretical knowledge, those networks may help entrepreneurs with strategic business development and improve their capacity to exploit business opportunities (cf., Ylinenpää, 2005). The network provides entrepreneurs with opportunities to discuss problems and find solutions in a group setting and provide value for developing business concepts and operations (Chaston and Mangels, 2000; McAdam et al., 2007; Tell, 2001). Such conditions imply an experiential learning process characterized by an iterative process of individual and collective reflections, such that the network supports new actions and revised business approaches for entrepreneurs in their ventures (Kolb, 1984).

Learning networks are designed to provide entrepreneurs with learning possibilities. These options can prepare them to make strategic decisions to exploit businesses opportunities. Despite good intentions, there are no guarantees that participating in networks will result in useful outcomes (Bessant et al., 2003; Brunetto and Farr-Wharton, 2007; Hardy, 2003; Jones and Macpherson, 2006). Several issues concerning processes and outcomes from learning networks have not been acknowledged in previous research although it would add to our knowledge about formal learning networks among entrepreneurs. In addition, theory building in this field would benefit from a greater integration between process- and outcome-oriented research (Hoang and Antoncic, 2003). Clearly, there is a need to increase the knowledge of processes and outcomes from learning networks among entrepreneurs. That is also supported by this dissertation and the questions that emerged from the research process (see figure 2).

The following sections reveal the four research gaps and the questions that frame this dissertation. Each question is investigated in one of the four appended papers. The first paper investigates how learning outcomes from learning networks can be understood. The second paper concerns the learning situation in learning networks. The third paper focuses on trust building and learning outcomes. The fourth paper investigates the relation between trust and learning and the moderating role of self-efficacy.

Learning Outcomes from Formal Learning Networks are Not Clear

As noted in the previous section, formal policy-led learning networks can be a forum and means for entrepreneur's competence and SME business development. Since the mid 1980s, the Swedish government supported learning networks (Gustavsen, 1992; Rasmussen, 2004). Although these types of network seem widespread in practice, this interest does not translate into effectiveness. Organizations and policy makers have long sought to evaluate the benefits of their competence development activities. Kirkpatrick's (1971; 2006) typology remains the prevalent framework for evaluating learning outcomes. His typology has four levels: reactions (i.e., how participants liked the training), learning (i.e., changes of knowledge, skills or attitudes), behavior (i.e., the participants changed behavior in the work as a result of attending the program), organizational results (i.e., measurable changes on the organizational level, "criteria of effectiveness"). Even if most evaluations of competence development are made on the first level, authors suggest that evaluation should be done at all four levels because they provide different kinds of evidence (Bramley and Kitson, 1994). In this dissertation the intention is to collect evidence from multiple sources of data on all four aforementioned levels.

Previous research has been done on the effects on formal learning networks. Tell (2001) explained the large interest in this kind of network participation by giving experience sharing and mutual knowledge development a prominent role. He concluded that participation in networks provides access to information, especially to information that could otherwise be difficult to attain (Westerberg and Ylinänpää, 2006). Yet, we do not know enough about which learning outcomes that can result from participating in formal and government supported learning network, both on the individual and organizational levels. Research on learning outcomes of formal learning networks remains inconclusive.

A problem in the evaluation of learning network outcomes is that they are complex, outcomes does not necessarily show up immediately, outcomes can be developed at different levels, and they are difficult to analyze (Björn et al., 2002; Hallén, et al., 2009). Entrepreneurs in learning networks hope to develop themselves and their companies. Hence, another problem is to evaluate the outcomes that are evolving and not precisely predefined (Doz, 1996). Because of the complexity, an evaluation of learning network outcomes may benefit from multiple sources of data (Hoang and Antoncic, 2003; Podsakoff and Organ, 1986). Learning is not always easy to detect, and it is challenging to measure or even estimate when such learning occurs. In this regard, previous

research has not fully acknowledged such methodological issues when examining learning outcomes. However, this might be done by qualitative methods based on longitudinal interview and observation data. Video-analysis may have great potential to make significant contributions to research in which the learning process would seem important and where outcomes are difficult to measure (Clarke, 2007). Moreover, qualitative methods can be combined with quantitative ones (Miles and Huberman, 1994), which can capture more convincing evidence of learning effects such as changes in market share, turnover, new products.

There are no empirical models for evaluating learning outcomes from formal learning networks. We need deeper knowledge of what entrepreneurs might learn in formal networks to improve their ability to exploit opportunities, and to achieve this knowledge multi-empirical evidence is needed (Hoang and Antoncic, 2003). There is a need for a model that can clarify changes in the network of participating entrepreneurs and their businesses. In the future, this research may be used to evaluate, classify and measure learning outcomes in a multidimensional way. The question can therefore be asked:

Research question 1: How can learning outcomes be described and established when entrepreneurs from SMEs participate in formal learning networks?

An Appropriate Learning Situation for Entrepreneurs

For entrepreneurs to benefit from formal learning networks, the management and the network design must be adapt to entrepreneurs' characteristics and conditions. Activities and the learning environment of a learning network can pose both barriers to and opportunities for learning. As previously noted, most learning programs are designed for larger firms (e.g., Fuller-Love, 2006) and do not specifically consider the entrepreneurs' characteristics. Traditional competence development programs are typically based on theory-centred lectures and rational analysis (Ylinenpää, 2005). They do not attempt to solve specific problems in the business. Entrepreneurs regard such learning approaches with suspicion. There are many pedagogical approaches to learning and an ongoing debate on what constitutes a beneficial learning situation. These pedagogical approaches also vary by country and region (Dana, 1992). The important question is therefore how to design a learning network that is suitable for entrepreneurs from SMEs.

One way to meet the needs of the entrepreneur is to incorporate the principles of adult learning (Knowles, 1990) and action learning (Marquart, 2004; Revans, 1980) into the design of learning networks. First, few entrepreneurs are interested in learning for its own sake.

Linking the training experience to actual practice is more likely to produce useful learning outcomes (Merriam and Leathy, 2005). Thus, a productive approach might be to create potential learning situations, by having entrepreneurs solve practical problems which are specific to their business. Second, entrepreneurs usually have much work experience. To exchange experience among actors in the learning network and to analyze this experience should be useful in the creation of entrepreneurial knowledge. Third, entrepreneurs are self-directed; therefore they should have the opportunity to influence the learning process. Finally, adults learn in a variety of ways, therefore, the learning situation should consider each entrepreneur's preferred way of learning. Experienced entrepreneurs usually make decisions without knowing exactly how to accomplish desired outcomes. Decisions are based on a given set of means and focus on selecting among possible effects that can be created with those means. Entrepreneurs, therefore, use effectuation logic rather than theory and practice (Sarasvathy, 2001). Hence, the means (i.e., who they are, what they know, and how they know) seem central to entrepreneurs' learning. To create entrepreneurial knowledge, the design and content of the learning network should not focus on analysis and prediction but on effectual exchanges of information among participants in the network.

In conclusion, an experiential learning approach, based on work-related problems and learning by experience exchanges may fit the entrepreneur better than traditional approaches based on deductive theory-centred lecturing (Gibb 1997; Ekanem and Smallbone, 2007; Fuller-Love, 2006; Sadler-Smith et al., 2000; Ylinenpää, 2005). Although this seems to be an interesting approach to entrepreneurs' learning, the phenomenon of experiential learning is not well understood (Cope, 2005; Harrison and Leitch, 2005). The key challenges are to arrive at a systematic understanding of the formal network learning situation and of the conditions that might be important for entrepreneurial knowledge (Cohen and Levinthal, 1990; Cope 2003; Minniti and Bygrave, 2001; Sadler-Smith et al., 2001; Rae, 2000; 2006; Rae and Carswell; 2001; Zang et al., 2006). This understanding may have theoretical and practical implications for how networks might best be structured to meet the learning objectives of individual members. To contribute to the debate on learning methods, the second research question is this dissertation is:

Research question 2: How can different conditions related to formal learning networks facilitate an appropriate learning situation for entrepreneurs?

Perceived Risk and Uncertainties in Formal Learning Networks

Scholars have recognized trust as central to all human interaction and in particular for learning based on collaboration and knowledge sharing (Dodgson, 1993; Wever, et al., 2005). First, prior research has suggested that trust among partners increases the willingness to share experiences (Sherwood and Colwin, 2008; Weaver et al 2005). Second, trust has been argued to reduce the time and energy needed to spend on evaluating advice and information from partners (Goel and Karri, 2006). Establishing and participating in formal learning networks that aim to improve the capacity to exploit business opportunities by developing competence and knowledge have become attractive for entrepreneurs. When entering such a network, however, entrepreneurs may perceive great risks in sharing information and experiences. They know little about the other entrepreneurs' intentions, personalities, competencies and needs. This brings perceived risks concerning both uncertainty and opportunistic behavior into the network.

Trust, therefore, could encourage participants in the network to ask each other for advice, make comparisons and share experiences. The condition that the networks are policy led may cause additional challenges. While entrepreneur led learning network (e.g., strategic alliances, chambers, rotary clubs etc.) are developed incrementally, a policy led learning network typically consists of participants who are previously not acquainted with each other. In a complex and uncertain context the greater the trust, the greater the learning (Larson, 1992; Wever, et al., 2005). Hence, trust seems to be an important and useful mechanism in managing the interdependencies and uncertainties encountered when entrepreneurs from several firms exchange experiences and knowledge in learning networks. For experience exchange to take place, participants must remove barriers in a climate that emphasizes trust, commitment, and communication. In other words, for entrepreneurs to engage in meaningful exchange and achieve learning outcomes through the identification and exploration of entrepreneurial opportunities, trust is important (Venkataraman, 1997).

Although previous research has examined different types of trust (Jones and George, 1998; Ring and Van de Ven, 1994; Newell and Swan, 2000; Zucker, 1986), it is not obvious how types of trust are built over time (Welter and Kautonen 2005) in entrepreneurial learning contexts. While the effects of trust are prominent in vulnerable situations, prior work has not acknowledged its role in outcomes when participants might not know how to perform some tasks. Hence there is a need to answer following questions:

Research question 3: (a) How can primary trust-building processes among entrepreneurs in formal learning networks be understood? (b) What kind of learning outcomes can be expected when trust is built?

Trust, Self Efficacy and Outcomes

Trust is a positive element of effective exchange and sharing (Gulati, 1995; McEvily, Perrone, and Zaheer, 2003; Ring and Van de Ven, 1994; Smith, Carroll, and Ashford, 1995; Welter and Smallbone, 2006; Zaheer, McEvily, and Perrone, 1998). Nevertheless, no study has focused on the relationship between trust among entrepreneurs in a learning setting and their ability to exploit business opportunities in which new goods, services, and organizing methods are introduced (Shane and Venkataraman, 2000). There are several reasons to expect trust contribute to the success of learning networks and to an entrepreneur's ability to seize business opportunities. Trust allows the management of the inherent risk in the interdependencies and uncertainties that entrepreneurs encounter when they exchange experiences and knowledge and engage in different ventures. Thus, given the complex and uncertain nature of formal learning networks, the capacity to seize business opportunities is more likely when entrepreneurs have positive mutual expectations of intentions and behavior (Dodgson, 1993; McEvily et al., 2003; Sherwood and Colvin, 2008). Hence, there is a need for studies that examine the ways in which trust may be beneficial for entrepreneurs in formal learning networks.

As a key concept in social learning theory, self-efficacy is likely to impact an entrepreneur's ability to learn from the network, transfer that learning to their ventures, and be prepared to take advantage of opportunities. Self-efficacy encourages entrepreneurs to seek out business opportunities and accept risk (Poon et al., 2006). Clercq and Arenius (2006) provided empirical evidence that individuals who subjectively believed they possessed certain skills were more inclined to engage in entrepreneurial activities. This is because their belief in their abilities influenced their cognitions, emotional reactions, and behavior (Bandura, 1997). Several studies have suggested a positive relationship between self-efficacy and learning outcomes (Bell and Kozlowski, 2002; Colquitt et al., 2000; Martocchio and Hertstein, 2003; Stakovic and Luthans, 1998; Tai, 2006). These studies do not, however, take into account the context of formal learning networks, where entrepreneurs must trust the knowledge and experiences of others. The knowledge and experiences are strongly related to the personality of the entrepreneur who shares the information (for example, the information cannot be verified in textbooks, on the Internet, or by statistics). Entrepreneurs

must therefore rely on their confidence and abilities regarding when, if, and how to act upon this advice, information, and knowledge. High self-efficacy makes it easier for shared information to be translated into organizational learning (Kraiger et al., 1993). People with higher self-efficacy are more likely to act upon advice they are given because they believe they have the ability to use what is shared and deliver changes for the organization (Tams, 2008). Therefore, more trust, better quality and more useful information, and a more self-efficacious entrepreneur is more likely to change the business. Hence, by including the entrepreneur's personality characteristics, the study better able to test a more complicated picture of the relationship between trust and learning outcomes. There seem to be an opportunity to integrate the literature on trust with that one of social learning theory and the findings related to self-efficacy in entrepreneurship research.

Knowledge about the effect of self-efficacy on the relationship between trust and learning outcomes are interesting from a practical point of view because entrepreneurs with different personality traits will differ in their ability to take advantage of learning networks. This leads to the last and most complicated research question:

Research question 4: (a) What is the relationship between trust among partners in formal learning networks and the learning that leads to an increased capacity to act upon business opportunities? (b) Does self-efficacy moderate this relationship?

Purpose, Research Design, and Disposition of the Dissertation

The purpose of this dissertation is to increase our knowledge of the processes and outcomes from formal learning networks among entrepreneurs. The interconnections and the aims of the four papers are depicted in figure 1 (below).

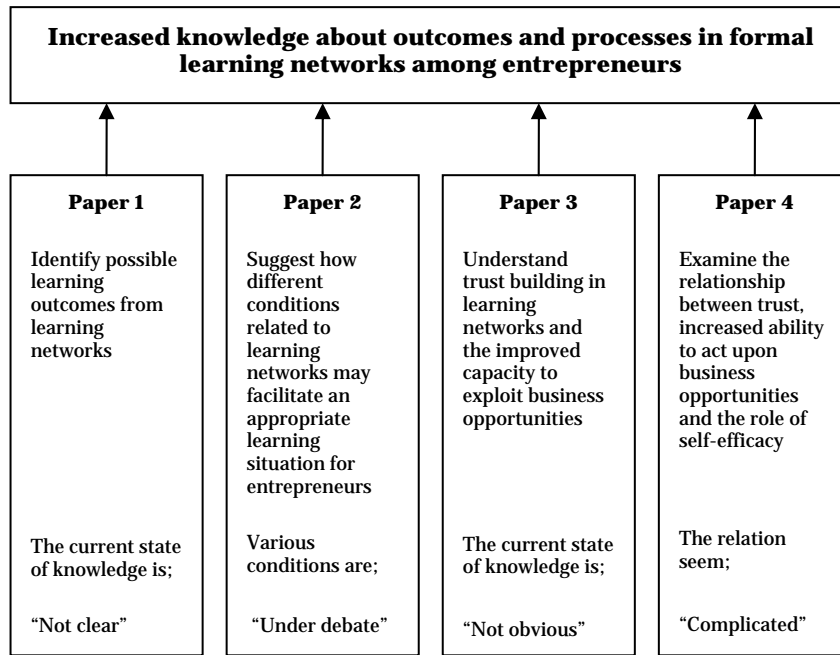


Figure 1: The interconnections among papers in the dissertation

Research Process and the Development of Central Concepts

In order to explain how research questions, central concepts, and findings in this dissertation developed in iteration (Alvesson and Sköldbberg, 1994; Johansson-Lindfors, 1993; Orton, 1997) this section will present a model of the research process.

exchanges, knowledge and competence development in SMEs.” In this initial stage the research explored the research topic and was not based on specific questions or hypotheses. At the same time as the author started to do observations of a learning network within the krAft project, he also studied general learning theories in order to get an understanding of how learning could be understood. The purpose of this stage was to improve the understanding of outcomes and processes in learning networks among entrepreneurs. The research for this dissertation is both inductive (i.e. starting with empirical observations) and deductive (i.e. the study and theoretical framework evolved in line with what was found during the empirical investigations).

To support the identification and description of learning outcomes of formal learning networks among entrepreneurs, Illeris’ (2002) dimensions of learning were found in the literature. These dimensions became a theoretical framework which could be filled with empirical observations. Then, the second research question was focused to obtain insight into the learning situation in the network (i.e. how the design and learning processes could create an appropriate learning situation for entrepreneurs). To support the analysis of this research, theories based on adult learning and entrepreneurs learning were used. As the analysis of the learning situation progressed, trust emerged as a promising theme. Hence, the third research question was formulated to comprehend the trust-building process in learning networks. Finally, the fourth research question was developed to test the relationship between trust and learning. In addition, self-efficacy, which had similarities with one of the identified dimensions of learning outcomes, was chosen as a moderator in the relationship between trust and learning.

The next chapter will describe the theoretical foundation of the research. The theories in this thesis can be viewed as a framework which has been identified and developed during the research process under the influence of empirical observations and not as an a priori theory which could be tested. In other words, the analysis is not only framed by a theoretical framework but also by empirical observations. Hence, the empirical observations influenced the choices of theoretical framework probably at the same time the theoretical studies influenced what was observed. This approach is described by Alvesson and Sköldbberg (1994):

Induction starts from empirical data and deduction from theory. The abduction starts from empirical facts in the same way as the induction but do not deny theoretical assumptions and as such, close to deduction. The analysis of empirical data can for example be combined with, or being anticipated by, literature reviews, but not as mechanical applications on specific cases, but rather like inspiration for discoveries of patterns as basis for understanding.

During the research process there is an alternation between theory and empirical data when both gradually are being re-interpreted in the appearance of each other. (1994, p. 42. My translation).

Dissertation Disposition

The purpose of the first chapter was to introduce the research area, the rationale for the four research questions, and the way in which they are related. The second chapter presents the theoretical framework for the research. This chapter reviews the research on learning networks, learning processes, learning outcomes, entrepreneurs' characteristics' effect on learning and trust in networks. Chapter three consists of methodological considerations including the effect of assumptions about ontology and epistemology on the research. A description of data collection and analysis will also be presented. The fourth chapter summarizes the papers in this dissertation and explains how they are connected. The concluding chapter discusses the central findings from my research and their contribution to entrepreneurship theory and practice. At the end of the dissertation, suggestions for future research are offered.

After these five chapters the reader will find the four papers. Paper 1, "Swedish interorganizational learning networks: Outcomes in three dimensions" and paper 2, "Entrepreneurs in learning networks: problems, opportunities, and implications for program design" have been published in the *International Journal of Business and Globalisation* (IJBG). Paper 3, "Entrepreneurs learning together: The importance of building trust for learning and exploiting business opportunities" has been accepted for publication in the *International Entrepreneurship and Management Journal* (IEMJ). Paper 4, "Trust, and self-efficacy in learning networks: The effect on entrepreneurs capacity to act upon business opportunities" is under review by the *Journal of Small Business Management* (JSBM). Drafts of three of these papers have been presented at international research conferences.

Theoretical Framework

This chapter presents the theoretical framework for this dissertation. This framework was gradually developed during the research process under the influence of empirical observations (see figure 2). The purpose of this text is to give the reader a general picture of learning theory and to lay the foundation for the investigations of processes in, and of learning outcomes from learning networks. The theoretical chapter will be divided into three parts. The first part will describe perspectives on learning and give the reader a deeper understanding of the learning concept. These theories of learning support the empirical studies and the theory of learning outcomes in papers 1 and 3. The second part of this chapter will examine the ways in which entrepreneurs can learn, including learning styles and self-efficacy. The effect of self-efficacy on learning is explained in the fourth paper. Theories of entrepreneurs' learning are cited in the second paper. In this chapter the formal learning network as a model for entrepreneurs to learn is discussed. This last section also includes trust as a prerequisite for learning in networks. Theories of trust were the themes of papers 3 and 4.

Part 1 - Theoretical Perspectives on Learning

The concept of learning is very broad and its definition depends on the researcher's perspective. In general,

Learning is used to refer to (1) the acquisition and mastery of what is already known about something, (2) the extension and clarification of meaning of one's experience, or (3) an organized, intentional process of testing ideas relevant to problems. In other words, it is used to describe a product, a process, or a function. (Smith, 1982 p. 34).

Learning can therefore refer to outcomes (the behaviorist perspective), to the process (the cognitive perspective), to methods (teaching), or to function. The last meaning can be inappropriate since it is not certain that the learning method will lead to any outcomes or that there is a learning processes (Illeris 2002).

To simplify, learning theory can be divided into three perspectives; behaviorist, cognitive and situated (Greeno et al., 1996). The three perspectives do not have clear-cut boundaries but (Merriam and Caffarella, 1999; Orrmond 1999). The difference among these three perspectives will be explained.

Behaviorism

Learning has traditionally been understood as a psychological matter and this gave rise to the behaviorist perspective. The perspective views learning as an outcome: when people change their behavior they have learned. The assumption of behaviorism is that behavior is an unconscious response to external stimuli. To be scientific, something observable has to be measured and the only thing that can be measured reliably is a change in behavior. Behaviorists believe that behavior can be predicted from stimuli-response models. Behaviorists view learning as a passive adaptation to the environment and see learning as dependent on experience. In sum, environmental factors explain behavior and therefore learning.

One of the classic behaviorists was Ivan Pavlov, who conducted his famous experiments on dogs according to the model stimuli – learning – response. B.F. Skinner was another advocate of behaviorism. Skinner (1938) meant that desired behavior should be rewarded immediately. In this way, learning becomes effective. Skinner developed methods of “programmed learning,” by which the learner at his/her own tempo receives information in small advances and receives immediate feedback by answering questions correctly. Later researchers criticized behaviorism, saying that people are not passive recipients of stimuli but actively and consciously process information and impressions. More recent theories in behaviorism have found that people can learn from each other through observation, imitation and modelling (Bandura, 1986).

Cognitivism

The prevailing view on learning after behaviorism is the cognitive view. Cognitivists believe that mental processes inside the brain allow people to learn and remember (i.e. the internal acquisition processes). The assumption is that behavior is conscious and not immediately predictable. Learning is viewed as an active process of adjustment to the environment by which the individual modifies and reconstructs his/her mental maps or structures (Piaget, 1952). Piaget says that the individual always starts off from his/her mental maps, which are products of experience. Central to the cognitive perspective is the belief that the human brain and the cognitive schemata control perceptions and behavior. Learning is the processes of receiving information from the environment and the processing of this information in the brain rather than changed behavior.

Within the cognitive perspective on learning, scholars have acknowledged the importance of experience (see, Piaget 1952; Kolb 1984;

Dewey 1999). Kolb (1984) defines learning as “the process whereby knowledge is created through the transformation of experience” (1984 p. 38). Hence, this definition focuses on learning as a process, or in other words how people modify and reconstruct their cognitive maps. How employees can learn from experiences in their working environment has been acknowledged by several researchers (Ellström, 1996; 2001; 2004; Kolb 1984; Schön, 1983; Wenglén, 2004). Experiential learning theory combines the constructs of previous knowledge, perception, cognition, and experience (Kolb, 1984). As such, it can explain how and why some entrepreneurs acquire and transform experiences, how they combine it with existing knowledge, and why their action results in different exploitation abilities (Corbett, 2005).

The risk of starting from the cognitive perspective alone is that the researchers over-emphasize the cognitive processes and underestimate the social situation in which the learning takes place. Learning is not just an individual occurrence but a social process by which individuals collaboratively construct their reality (Berger and Luckman, 1966). Bandura (1986) can in this sense be categorized as a cognitivist, but in the 1960s, he brought the social side of learning to the forefront. He said that all learning takes place within a social context. Everything that can be learned from direct experience can also be learned through observation and imitation. When individuals observe the consequences of a role model's behaviors, symbolizations are created in the memory that can later be used as guidance for their own actions. Bandura (1977) says that people are motivated by the success of people who are similar to themselves, but discourage from pursuing courses of behavior that they have seen often result in adverse consequences. Bandura's concept of social learning brings us to the third perspective on learning.

Situated Learning

The situated or social perspective on learning has challenged the traditional views of learning as something that takes place inside the human brain (i.e., changes of cognitive maps). The situated perspective emphasizes that all learning takes place in a situation that is significant for the nature and the result of learning. This means that learning is inevitably, directly or indirectly, influenced by the way in which working life is organized and functions in society. Knowledge is gained through collaboration and social interaction. People are social creatures that create their understanding through interaction in a specific socio-cultural context. Put differently, we learn from and with others. Accordingly, Lave and Wenger (1991) define learning as “...an integral part of generative social practice in the lived-in world” (1991, p. 35).

Lave and Wenger (1991); Gherardi et al., (1998) show that the situated perspective on learning can be viewed as a process that takes place between people, for instance in communities of practice (CoP), or more generally in terms of the social-constructionist view (Berger and Luckman, 1966; Gergen, 1999; Burr, 1995). Lave and Wenger (1991) and Wenger (1998) see learning as a legitimate peripheral participation in which the participant strives to become a full member of a CoP. Novices become masters. Through this process people gain knowledge, skills and identity (i.e. socialization) in order to work in a community. In the community of practice, learning is a mutual process between individuals and practice, both of which are always changing. There is no general knowledge since knowledge is defined by its social context. Apprenticeship is connected with situated learning. Situated learning scholars are trying to gain knowledge of which social arrangements are the best contexts for learning. An important implication for learning is that people need the opportunity to act and participate, not only to talk (Wenger, 1998).

Combined Perspective on Learning

Relying on the behaviorist perspective in entrepreneurship is not very useful since those theories mostly focus on routine and status quo, not on the learning that results in new opportunities (Corbett, 2005). However, both the social and the cognitive perspectives are important to bear in mind. This is because entrepreneurial learning in work life and in networks happens through participation in a community of practice which is affected by the surrounding culture. The advantage of the social perspective is that it observes learning in a social and cultural context. In this way, the social perspective is good for discussing the conditions of learning while the cognitive perspective is better suited to explain how learning happens.

Several scholars (Jarvis, 1992; Florén, 2005; Granberg, 2004; Larsson, 2004; Tell, 2001) have acknowledged that learning should be understood from the cognitive and situated perspectives. From the socio-cognitive perspective it is possible to understand how people's thought structures change and learn. In contrast, from the social/situated perspective it is possible to understand how the social context affects learning. Larsson (2004) defines learning according to the cognitive and social perspectives, as "...an experience-based process through which the individual in interaction with his/her environment changes his/her way of understanding or acting" (Larsson, 2004, p. 40). Based on this definition, Larsson argues that learning can result in a changed way of acting and/or a changed perception of the environment. Author believes

that the socio-cognitive perspective is a better starting point for the study of learning (Gherardi et al., 1998). But does the socio-cognitive perspective provide a comprehensive view, or does it lack something essential?

According to Illeris (2002; 2003; 2004), learning has three dimensions: content, incentive and interaction. The content dimension concerns the acquisition of knowledge, cognition, and skills. This is done when impressions from the environment are processed psychically through assimilation and accommodation.⁶ The incentive dimension comprises motivation, emotion and volition. Learning becomes more efficient if the learner is interested in the subject to be learned. Accordingly an interest in acting is always based on an affective motivation. The interaction dimension consists of action, communication and collaboration. Learning is always embedded in a social context and frames what can be learned and how. Hence, learning takes place in the interplay between the individual (cognition and emotions) and the social processes (between the individual psychological processing and the acquisition of knowledge and skills and the interaction with the social environment).

Before we define learning in this dissertation, the levels of learning should be discussed. The levels on which learning can be found have been under debate in academia. Is it only individuals who can learn, or can organizations also learn? Is organizational learning the sum of what individuals learn in an organizational context, or is it more? Scholars who see learning as the sum of the individuals' learning say that it not possible to attribute human characteristics to inanimate objects such as an organization. An alternative interpretation is that only a small part of the organization's members (management) can affect strategic decisions and therefore their learning is a good approximation of how the organization learns. Other researchers have claimed that organizational learning is more than the sum of the individuals as the systems, structures and procedures of the organization affects individual learning. They say that learning is stored in the systems, structures and procedures of the organization. The organization builds a "memory" upholding certain behaviors, mental maps, norms and values over time. Knight and Pye

⁶ A similar concept is used by other researchers: single- and double-loop learning (Argyris and Schön, 1978), adaptive and generative learning (Senge, 1990), lower-level and higher-level learning (Fiol and Lyles, 1985), and exploitation and exploration (March, 1991).

(2005) write that it is possible to identify learning on four levels: the individual, the group, the organization and the network. In today's research there is a wide acceptance of levels of analysis, whether it is on the individual, group, organizational or network level (Crossan et al. 1999; Esterby-Smith et al., 2000; Örtenblad, 2001).

This dissertation views learning from a socio-cognitive perspective. The incentive dimension in all learning processes is acknowledged. There is also an acknowledgement that learning can be seen on several levels. However, before organizations can learn, the individual must learn (Argyris and Schön, 1978; Kim, 1993; Nonaka, 1994). Additionally, there is distinction between cognition and behavior. A learning that means a changed cognition or motivation does not necessarily implicate a behavioral change or vice versa (Esterby-Smith, et al., 2000; Fiol and Lyles, 1995). In this dissertation, learning is defined as the processes and the identifiable, relatively permanent changes in knowledge that result from human interaction in a certain context (cf. Brown and Dugid, 1991; Kolb, 1984; Larsson 2004; Lave and Wenger, 1991).

The situated dimension in learning is clearly stated: knowledge results from interaction in the learning network (Teigland, 2003). The organized mutual dependency in the learning network and the interplay and communication among participants is central. Situated learning is social and relational and includes the development of skills, expert knowledge and social contacts among entrepreneurs. Author takes a constructivist rather than a knowledge-acquisition perspective: constructing knowledge, or making meaning, constitutes learning for entrepreneurs. Few entrepreneurs want to learn something for its own sake; rather, previous learning is connected to new learning through a process of making meaning (Rae, 2006; Sjö, 2000). The more authentic the learning experience (i.e., the more closely it is linked to the actual practice setting and needs of participants), the more likely it is that useful learning outcomes will develop (Merriam and Leathy, 2005). The learning outcomes are viewed as entrepreneurial when they lead to entrepreneurial knowledge: the ability to identify and take advantage of business opportunities (Politis, 2005). As shown in figure 3, learning includes experiences (i.e., information) which can be transformed into different kinds of knowledge that also represent learning outcomes. Some learning outcomes can be shown in modifications of behavior. The transformation of experiences is done in a learning process. The arrows mean that there are no definite beginnings or endings; these parts influence each other in a complex way.

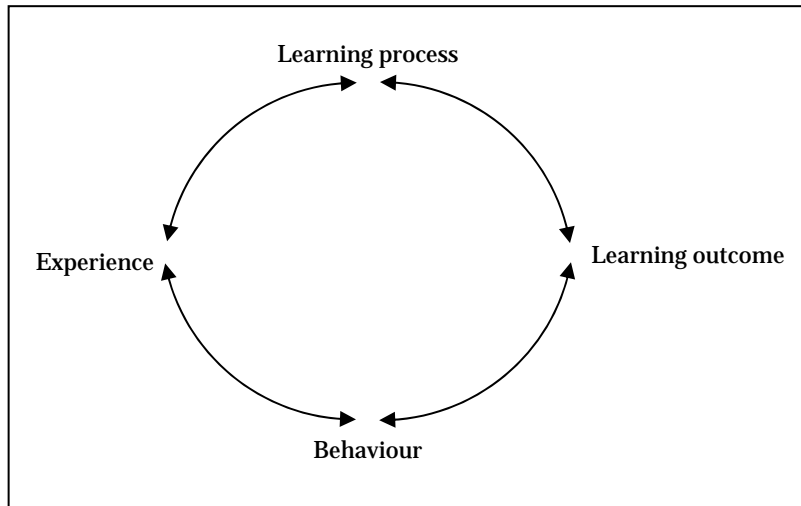


Figure 3: Included parts of learning

Part 2 – Entrepreneurs’ Learning

This part of the chapter explores the question what entrepreneurs learn about, how they learn, and why they learn, (Parker, 2006). Is the work of an entrepreneur⁷ in small and medium sized enterprises unique? Does it demand a special kind of learning?

Entrepreneurs discover, evaluate and exploit business opportunities to introduce new goods and services, or organizing methods (Shane and Venkataraman, 2000). According to Alvarez and Barney, (2007) entrepreneurial opportunities can be viewed dichotomously. One can view opportunities as objective phenomena waiting to be discovered. In line with this view, the entrepreneurs have to learn the strategies and techniques to take advantage of opportunities as quickly as possible. At the same time, opportunities can be created by the entrepreneur in a social context. With this view, learning is based on action, incremental development, induction, and iteration while forming opportunities (cf., Mininiti and Bygrave 2001; Nicholls-Nixon et al., 2000). As the opportunity is not pre-existent, it is difficult to use analytical tools and collect information about it from the beginning; it has to be done over time and demand action. Although these views are based on different

⁷ Entrepreneur is here used synonymously used as owner/manager. In a small firm the owner and the manager are often the same person (Storey, 1994).

ontologies, learning based on the two may be mixed according to the context in which entrepreneurs work.

The smaller the firm, the broader the entrepreneur's area of responsibility is (Florén, 2005). One entrepreneur can be responsible for managing business concepts, innovation, leadership, and employees (Harrison and Leitch, 2005; McAdam et. al., 2007; Rae, 2006). These areas all possess a high degree of uncertainty; there are few rights and wrongs and much relies on the entrepreneur's idiosyncratic knowledge (Moensted, 2007). Florén (2005) investigated owners/managers in SMEs and concluded that certain characteristics in the work environment impede entrepreneurs' learning. The entrepreneur's work practice in small firms is illustrated in following figure (Florén 2005).

FEATURES OF THE WORK OF TOP MANAGERS IN SMALL FIRMS	IMPLICATIONS FOR MANAGERIAL LEARNING	
Short-handed management function	Barriers in reflection	Difficult to free time for reflection and conceptualization
Unplanned working day		
Desire to keep control		
Preference for red-hot, specific, and ad hoc activities		Makes systematic reflection low-priority
Tendency to focus on doing things that are perceived as crucial for the survival of the firm		
Multi-role behavior, including, both managerial and operational roles	Barriers in the reflection process	Fosters a superficial learning orientation
Responsibility for different functions		
High degree of fragmentation and frequent interruptions		Difficult to probe deeply into issues at hand
Tendency to react immediately to received information		Complex understanding (by means of multiple perspectives) difficult to achieve
Isolated work practice with few peers		Peer learning seldom possible

Table 1: The features of managerial practice in small firms and the implications for managerial learning (Florén, 2005, p. 53)

Due to the conditions that entrepreneurs are likely to encounter (e.g.; high uncertainty, novelty, time pressure and stress), entrepreneurs are more likely than non-entrepreneurs to think and reason using heuristics

and biases (Baron, 1998). To this scholars reply that opportunities emerge from how people think (Busenitz and Barney 1997; Kreuger, 2000; Mitchell, et al., 2002). Corbett (2005) for example, found that an individual's cognitive processing style toward "intuitive" and away from "analytical," the more opportunities an individual would identify. Although a cognitive style may work well during identification, the entrepreneur may burn out as the venture enters the exploitation phase. In conclusion, cognitive differences may affect entrepreneurial abilities. Whether the cognitive difference is a predisposition or is a result of engagement in entrepreneurial actions is not clear (Alvarez and Barney, 2007).

It is promising that when entrepreneurs learn, their learning should be inspired by theories on how experienced entrepreneurs make decisions. To create entrepreneurial knowledge, the learning situation and content cannot focus too much on analysis and prediction or just on current theory and practice. As Sarasvathy (2001, p. 262) put it:

when destinations are unclear and there are no pre-existent goals, causal road maps are less useful than effectual exchanges of information between all stake-holders involved in the journey. Bold expeditions and even one-eyed pirates rule such seas, and voyages to India effectually end up in the Americas.

A learning method inspired by such effectuation logic allows the content of a program to be changed and formal over time, making use of contingencies as they arise. The exchange of experience between actors is considered very useful in the creation of entrepreneurial knowledge. This is because the entrepreneurs' effectuation process takes a set of means as given and selects among possible effects that can be created with those means. Hence, the means are central for entrepreneurs' learning, who they are, what they know, and who they know (Sarasvathy, 2001).

Entrepreneurs' Learning Style

Individual differences exert considerable influence on how people prefer to learn and achieve learning outcomes. Previous research has suggested factors in terms of ability, personality, and motivation (Baldwin and Ford, 1988, Ford and Weissbein, 1997) as well as prior experiences and efficiency beliefs (Holton et al., 2000). In line with this stream of research, the acknowledgement of a person's learning style can be found. A learning style is an individual preference on how to acquire and organize new information; put differently, it is how best to learn. By taking account of individual learning styles in different learning situations it becomes easier to respond to individual differences (Corbett, 2005; Honey and Mumford, 1985; Sternberg and Zhang, 2001). In the

end, learning asymmetries can lead to superior abilities to exploit business opportunities (Shane, 2000).

Entrepreneurs tend to have an active learning style, which means that they prefer to learn through action and trial and error (Kolb, 1976, 1984). According to Kolb (1984) this learning orientation is opportunity-seeking and risk-taking; therefore the learning style of these entrepreneurs is a tight fit with the task of exploitation (Corbett, 2005). An explanation of this learning style may be that entrepreneurs in small firms focus on action and survival rather than on reflection. Consequently, entrepreneurs may have a problem with passive learning (e.g., in a traditional lecture setting). An experiential learning approach, based on work-related problems and learning by doing, may meet the needs of the entrepreneur better than traditional methods based on deductive theory-centered lecturing. Despite the positive aspects of an active learning style in entrepreneurial activity, scholars have noticed problems with entrepreneurs focusing on action, “red-hot,” specific, and ad hoc activities when this may not be conducive to learning from reflection (Johanisson et al., 1998; Florén, 2005). So even if entrepreneurs prefer action, it is important to integrate action with reflection, in addition to theory and informal learning in order to give the entrepreneurs a more balanced style of learning (Honey and Mumford 1985; Florén 2005; Ylinenpää, 2005). It is also possible that certain ways of learning can be more appropriate in different phases of opportunity identification and exploitation (Corbett, 2005). For entrepreneurs to be successful in responsibility, the flexibility of entrepreneurs’ learning style could explain their success in business exploitation. Hence, the learning situation should encourage entrepreneurs to develop a more flexible learning style.

Entrepreneurs and Self-Efficacy

Self-efficacy is the belief a person has about his or her abilities to execute a task at a desired level of performance (see Bandura 1986). As a key concept in social learning theory, self-efficacy is likely to impact entrepreneurs’ success in learning, transfer that learning to their ventures, and exploit business opportunities (Baldwin and Ford, 1988; Holton, et al., 2000; Kraiger et al., 1993; Noe, 1986). Self-efficacy influences entrepreneurs to seek innovative business opportunities, accept risk, and exploit such opportunities (Poon et al., 2006). In addition, Clercq and Arenius (2006) provided empirical evidence that people who subjectively believed they possessed certain skills were more inclined to engage in entrepreneurial activities. This is because people’s beliefs about their capabilities influence their cognitions, emotional reactions, and behavior (Bandura, 1997). Several studies have suggested a

positive relationship between self-efficacy and learning outcomes (Bell and Kozlowski, 2002; Colquitt et al., 2000; Martocchio and Hertstein, 2003; Stakovic and Luthans, 1998; Tai, 2006). For example a meta-analysis by Stakovic and Luthans (1998) showed a significant, positive relationship between self-efficacy and work-related learning across a variety of task domains.

Entrepreneurs with high self-efficacy will be confident they can act upon advanced and complex exchanges in, for example, networks and improve their capacity to seize business opportunities. In contrast, entrepreneurs who display low self-efficacy will more quickly surrender to difficulties and be less likely to transfer and implement new strategies that benefit their business (Sadri and Robertson, 1993). They will also have problems understanding what skills a task or activity demands (Usher and Pajares, 2008). Furthermore, entrepreneurs who are low in self-efficacy may have problems with self-direction (see e.g., Zimmerman 1998; Usher and Pajares, 2008). When acting on entrepreneurial opportunities, there are no pre-existing goals or causal road maps, so the situation is uncertain and risky (Sarasvathy, 2001). In such situations, entrepreneurs need confidence in their abilities and the self-direction to take on challenges that introduce new products or processes and take on risky projects (Poon et al., 2006). Hence, self-efficacy may affect learning in formal learning networks.

Part 3 - Formal Learning Networks

This part of chapter is concerned with the formal learning network as a novel method for entrepreneurs' learning and the facilitation of entrepreneurial activity. From the previous discussion of the characteristics of entrepreneurs' work and learning, external relations in networks may meet the needs of business development (Chaston and Mangels, 2000; Jones and Macpherson, 2006; McGovern, 2006; McAdam and Keogh, 2004; Mohannak, 2007). In fact, when closely reading prior literature (Bessant et al., 2003; Chaston and Mangels, 2000; McAdam et al., 2007; Tell, 2001), one notices that formal learning networks could be valuable for the development of unique business concepts or business operations through access to information, advice, and collaborative problem solving (Hoang and Antoncic 2003). Nevertheless, the main reason for participation in such networks seems to be an interest in learning and developing in partnership others. In this dissertation, "a network(s) [is] formally set up for the primary purpose of increasing knowledge, expressed as increased capacity to do something" (Bessant and Francis, 1999 p. 377).

Formal learning networks are typically policy-supported; university experts or consultants help entrepreneurs establish such networks. Entrepreneurs thus have access to other entrepreneurs' and experts' knowledge and an arena in which to learn. Entrepreneurs are temporarily joined, encouraged to share experiences, and can learn from lectures and seminars by entrepreneurs, academics, specialists, or other practitioners (Johnston et al., 2008; Lockett et al., 2008). Hence, these formal learning networks have a structure for operation with boundaries defining participation (Morris et al., 2006). Together, these actors provide an arena for experience exchange and learning where "old truths" can be challenged and new perspectives can be formal. The networks give participants access to a learning arena where individuals separately and/or collectively reflect upon their own and others' experiences (Ekanem and Smallbone, 2007; Reason, 1999). In this way, participation in a formal learning network can enrich the entrepreneur and support the development of his or her company and open the door for new business opportunities (Bessant and Francis, 1999; Bessant et al., 2003; Morris et al., 2006). Here development consists of the organizational learning outcomes of the formal learning network.

In Scandinavia, formal learning networks have been a popular means of beneficial exchanges (Nilsson, 2004; SOU, 1991:82; SOU 1998:92). Networking and network research based on action research gained momentum in Scandinavia in the mid 1980's when attention shifted from the intra-organizational group perspective to the interorganizational network perspective. A comprehensive Swedish network program, LOM^s, was carried out during 1985-1990 and included approximately 150 companies and 60 researchers. The program was based on networking, learning and democratic dialogue. The networks comprised four companies whose purpose was to work together and create larger networks that could stimulate business development. Learning was focused on creating the ability to change and the democratic dialogue was built on openness, participation and mutual understanding. An important principle for the program was that the companies would initiate change while the researchers would arrange a basis for dialogue (Rasmussen, 2004). The research on LOM was aimed at creating knowledge of the conditions for local development of knowledge built on the participants' experiences (Hansson, 2003; Rasmussen, 2004). In an evaluation of LOM, Gustavsen (1992) writes that "One of the experiences to emerge out of the LOM programme is that networks generally function towards "explosion" in the sense that they provide each participant with a broad range of new elements, new experiences, new options" (Gustavsen, 1992

p. 98). Bessant and Francis (1999) draw similar conclusions about the potential of formal learning networks:

In shared learning there is a high potential for challenge and structured reflection from different perspectives. Different perspectives can introduce new concepts or old concepts but new to the learner. Shared experimentation can reduce risk and maximize opportunities for trying new things out. Shared experience can be supportive and confirmational - strengthening the individual. Shared learning helps explicate the system's principle, seeing the patterns – separating 'the wood from the trees'. Shared learning provides an environment for surfacing assumptions and exploring mental models outside of the normal experience of individual organization – this helps reduce the “not invented here” stance. (p. 377)

Sweden's largest public investment in formal learning networks during the 1990's was Växtkraft Mål 4. While the program was running, more than 2 000 networks were started (Utbult, 2000). Svensson et al., (2001) have examined 14 of these networks, and conclude that those types of networks give participants new perspectives, ideas and impulses that can be the basis of their companies' development. The formal learning networks are described as an alternative method for developing companies based on horizontal relations and direct cooperation. The network start off from the individual company and its conditions (cf, Axelsson and Larsson, 2002), and where companies can learn from each others' experiences. Svensson et al. write, “In order for a network to function as a driving force for business development a certain kind of learning is required – a creative learning focused on development” (2001 p.44). Thus, learning networks can be a particularly good method to bring about development-focused or double-loop learning.

Sweden's krAft project, the largest of its kind, consists of 101 formal learning networks. With a few exceptions (Fredriksson, 2008) there is limited research on these networks. The papers in this dissertation are based on formal learning networks in the krAft project and how these networks may have positive outcomes for entrepreneurs and their firms.

Trust: A Prerequisites for Collaboration and Learning

Trust is central to all human interactions and has a proven impact on learning based on collaboration and shared knowledge (Dodgson, 1993; Larson, 1992; Wever, et al., 2005). Sharing experiences and attitudes to develop mutual knowledge among network participants is key for successful formal learning networks. Therefore, positive partner expectations are a core condition for entrepreneurs to join a network and

for learning to occur (Florén, 2005; Fredriksson, 2008; Brunetto and Farr-Wharton, 2007; Tell, 2001).

Despite the importance of trust in relational exchanges (Arino, 2001) trust is evasive and there is no definitional consistency either within or across research disciplines (Dirks and Ferrin 2002). Hosmer (1995) state:

there appears to be widespread agreement on the importance of trust in human conduct, but unfortunately there also appears to be equally widespread lack of agreement on a suitable definition of the construct (p. 380).

Although most definitions of trust seem to have a common conceptual core, trust must be related to its empirical context (cf. Garfinkel, 1967). Rousseau et al. (1998) proposed the following definition of trust: “a psychological state comprising the intentions to accept vulnerability based upon positive expectations of the intention or behavior of another” (p.395). A similar definition is proposed by Mayer et al., (1995):

the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or confront that other party (p. 712).

These definitions seem to comprise common conceptual dimensions across multiple definitions. First, trust implies a willingness to be vulnerable to another party. Trust is focused on expectations that one’s own vulnerabilities will not be exploited (Krishnan et al., 2006). Risks related to interacting and exchanging through the network (Davenport et al., 1998; Florén and Tell 2004; Greve, 1995; Wever et al., 2005) may include, for example, other participants’ misuse of sensitive information related to individual or venture weaknesses or unique business concepts within or outside the learning network. Scholars on trust, therefore, have indicated that rarely can networks develop into learning networks if the participants do not have positive expectations of the other participants’ intentions and behavior (Dodgson, 1993; Sherwood and Colvin, 2008).

Second, the expectations of the other party can be based on both cognition and emotion (Dirks and Ferrin, 2002; McAllister, 1995). The cognitive dimension is based on a rational calculation of the other party’s competence and capability to keep agreements (both explicit and implicit). The emotional or affective dimension concerns feelings and mutual concern. Applying this to an interorganizational setting, in the context of this study, where entrepreneurs learn from others’ experiences and knowledge by joining a network, trust is considered the willingness to be vulnerable and open to others based on positive expectations that

others have something to give and are concerned and reliable in their motives and conduct (see e.g., Bigley and Pearce, 1998; Brunetto and Farr-Wharton, 2007; Das and Teng, 1998; Kramer and Tyler, 1996). Mayer et al. (1995) demonstrated how assessing partners' perceived abilities (competencies and skills); benevolence (genuine care); and integrity (principle compatibility) lay the foundation for expectations. The literature has suggested that these trustworthiness assessments depend on history: positive expectations are created and confirmed when parties honor their promises, are fair, and show goodwill (see Ariño et al., 2001; Ariño and Torre, 1998; Krishnan et al., 2006). In terms of trust-building, Das and Teng (1998) outlined that partner confidence develops when a party perceives that the exchange relationship is fair and that the other party has taken risks and adapted to the exchange relationship.

Prior research has demonstrated that several types of trust exist, but there has been scant research attention to the ways in which these forms of trust are built (Welter and Kautonen, 2005). Synthesizing prior typologies in trust research (e.g., Jones and George, 1998; Ring and Van de Ven, 1994), Newell and Swan (2000) identify three types of trust: 1) companion; 2) competence; and 3) commitment. Companion trust is based on friendship, emotions and a unique relationship. Competence trust is based on perceptions of another's skills and ability to perform a task. This type of trust relies on rational evaluations and can be drawn from reputation, from professional expectations or from previous interactions. Commitment trust is based on more or less formal agreements between interacting parties (Zucker, 1986).

Drawing from traditional trust literature, the importance of exchange trust (see e.g., Bigley and Pearce 1998; Brunetto and Farr-Wharton, 2007; Das and Teng, 1998; Kramer and Tyler, 1996), seems reasonable and may benefit entrepreneurs in formal learning networks who wish to improve their capacity to exploit business opportunities. There are several reasons to expect trust to improve an entrepreneur's capacity to seize business opportunities. First, research suggests that trust between partners increases the willingness to share experiences by removing barriers to exchange (Sherwood and Colwin, 2008; Weaver et al., 2005). Because positive expectations reduce concerns that openness will be exploited (McEvily et al., 2003), participating entrepreneurs may be more willing to transfer and receive knowledge and engage in joint problem solving. This is important to seizing business opportunities. Second, research has argued that trust reduces the time and energy needed to evaluate advice and information from partners (Goel and Karri, 2006; Uzzi, 1997). Hence, trust may be an important mechanism to manage potential risks inherent in the interdependencies and uncertainties that

entrepreneurs encounter when they embark on ventures and exchange experiences and knowledge.

Method

The research in this dissertation is based on multiple theoretical perspectives, methodologies and data sources. In this chapter underlying assumptions, how the research was conducted and the motivation of the methodological choices that were made will briefly be described. For more detailed information about the specific method used in the particular studies, the reader is referred to the appended papers.

The Empirical Context: The Swedish krAft-Program

Before the elaboration of underlying assumptions and explanation of the research design, there will be a description of the krAft-program which was used as a case study (Eisenhardt, 1989; Eisenhardt and Graebner, 2007) for papers 1, 2 and 3. The case used in these studies was a formal learning network within the Swedish krAft-program. For paper 4, the krAft-program was the empirical setting to test hypotheses from a quantitative approach.

The krAft-program was a policy-supported program conducted between 2000 and 2005 as a forum for entrepreneurs to exchange experiences. The program had 997 participants from 616 enterprises, constituting 101 formal learning networks (Norback et al., 2006). Typically, five to seven firms with 1 to 2 representatives from each firm participated in each network. University experts and consultants helped the entrepreneurs establish and manage these networks to reach learning and business development goals. Participating entrepreneurs usually came from the same geographical area of Sweden and met in person on several occasions. During a one-year period, network members met for 12 days (divided into six sessions) where they discussed problems that the group perceived as interesting and meaningful. The sessions were scheduled from early morning on day 1 until lunch on day 2. The location was usually an isolated area, which meant participants stayed on-site and had time to interact informally with other network members in the evenings and over meals. Consequently, the entrepreneurs were separated from their customary working routines. The program was financed half by the state and half by the participating firm (i.e., the firm paid 4 300 euro). The krAft project was meant to achieve both individual competence and business development among SMEs, which the program sponsors expected would eventually lead to economic growth.

Assumptions Reflected in the Dissertation

A researcher's ontological and epistemological position is often difficult to state but since that position affects the study it is important to make it explicit. Johansson-Lindfors, (1993) term the problem of positioning; the philosophical ambivalence, meaning that regardless of your standpoint on things you feel insecure and ambivalent about them. Often research paradigms are described as being dichotomies (Burrell and Morgan 1979) and the ambivalence that many researchers experience is partly because in practice they have a view that is somewhere between an objective and a subjective view (e.g., Johansson-Lindfors, 1993).

Some scholars claim that phenomena have both physically objective and socially subjective aspects (Boghossian 2001; Andersson 1982; Luis 1981). Ideas, not objects, can be socially constructed (Boghossian, 2001). The idea of quarks can be socially formal but the quark itself cannot. Following this logic, Luis (1981) argues that reality can be viewed on levels where both objective and subjective sides exist and interact. One example can be a murderer's DNA which can be seen as objective and universal. However, how to judge the murderer and based on what laws cannot be viewed as objective but instead as culturally intersubjective. Most people in a community would agree that it is reasonable that a murderer convicted on the basis of DNA evidence would suffer some sort of consequence. There is also an individually subjective level which in this case means that an individual, unlike other individuals close by, may have other views and feelings about the consequences that the murderer suffers.

Regarding the complex phenomenon of learning in networks or in groups of entrepreneurs there is, in my view, no social fact and no universal truth. In other words, there is no one true way to describe, interpret or analyze this social phenomenon. However, like Luis (1981) I contend that findings in this research are on culturally intersubjective. Prejudice can be avoided by being methodologically aware, being explicit about choice of methods and by discussing the meaning of empirical context. As such, the findings, however, are not speculation but should be acceptable to other researchers and the practices related to the research. Results from social scientific research cannot be universally applicable, thus they are relative to a social context. However as Langely (1999) states, some research strategies such as qualitative narratives or grounded theories favour accuracy since they are more deeply rooted in the raw data; others such as quantifications or simulation favour simplicity and generality (i.e., the potential range of situations to which the theory may be applicable). The research in this dissertation adopts a qualitative process approach, taking the context into account to gain

deeper understanding of how and why, and also uses quantitative and statistical method to test theoretical explanations.

The Creation of Knowledge about Learning from Different Perspectives

The theoretical chapter of this dissertation described several perspectives on learning. These theories and all other social scientific research are based on the ontology and epistemology of the researcher and on his/her view of human nature. There is a connection between these points of departure and the method used in the research. These points of departure and the often adherent methodology can be grouped under a variety of scientific paradigms (Burrell and Morgan 1979; Kuhn, 1981). Depending on the paradigm, the research will offer different explanations for what happens in our social surroundings. It is as if one is looking at the observed phenomenon in the empirical reality through different lenses. Some aspects become clearer while others become blurry.

The theoretical perspectives on learning described in the theoretical chapter of this dissertation are based on different ontologies and epistemologies. With these different theoretical perspectives as starting-points one can study learning in several ways. What follows is a summary of how these theoretical perspectives allow researchers to study learning.

The traditional behavioristic perspective depends on an objectivistic ontology and epistemology. One must create objective and true knowledge by adhering to scientific rules and methods (Alvesson and Sköldbberg, 1994; Kjörup, 1999). This traditional positivist perspective (Kuhn, 1981) has strongly influenced today's western society and a large part of current research is influenced by this paradigm (Johansson-Lindfors, 1993).

From a rational behaviorist perspective, studies on learning could be structured to measure a behavior before and then after participation in the learning network. The change in behavior should also be compare with a control group that is not part of a learning network. This way, according to this perspective, you focus on the learning results and try to check for various factors that may influence learning. The problem with this approach is that, in such a complex social situation as a learning network is, it is difficult to check which factors that have really influenced changes in behavior. Moreover it is virtually impossible to reproduce a learning network, since such a social situation cannot be duplicated. Yet another problem is that changes in behavior as a result of learning take time. An entrepreneur who has changed his/her understanding of, for

example, marketing through participating in the network might not have the opportunity to change his/her behavior until later.

If researcher instead chooses the cognitive perspective as the point of departure, learning can be studied as a change in cognitive structures (understanding) and not just focus on the behavioral change. From this perspective one could in various ways study how the participant changes his/her mental maps and understanding of various problem areas discussed in the learning network. By doing knowledge tests, questionnaires and interviews you can examine how the individual's mental models change, and also what kinds of learning processes that take place with the individuals in the learning network. From this perspective your primary focus is on individual or collective learning processes. However, there are problems with this way of studying learning. First, it is difficult to measure something so abstract. Second, it is not certain that a participant is able to put new knowledge (understanding) into practice (Bandura, 1986).

In glaring contrast to behaviorism's objectivist view on knowledge (and also large parts of cognitivism) is the social/situated perspective on learning. This perspective is based on a subjectivistic/relativistic view of knowledge which means that results of scientific research are affected by tradition, culture, politics, ideology and power (Brown and Duguid 1991; Lave and Wenger, 1991; Wenger 1998). Nothing can be neutrally and objectively interpreted, so one should be critical of knowledge that is taken for granted. Even if the researcher has used conventional scientific methods, the results must be evaluated in their context (i.e., relativism). They must thereafter be compared with the researchers own experiences and other knowledge (Alvesson and Sköldbörg, 1994).

Subjective epistemology contains theories of a socially constructed reality (Berger and Luckmann, 1967; Hacking, 2000). Social reality is contextual and relative since history and cultural factors create our reality and our knowledge about that reality (Burr, 1995). Some social phenomena are seen as objective is because they are internalized into people's consciousness after a far-reaching socialization process is taken for granted. This social construction does not take place freely, but the created world, and its creation, influence each other in a perpetual process.

From a social/situated perspective on learning, focus is shifted towards the social processes that constitutes learning. Since this perspective is based on social constructivist epistemology no knowledge is not situated in a social context and that defines this knowledge. Learning has to be studied in its context and the researcher has to understand how the social learning situation affects and is affected by interacting people. The

perspective therefore focuses on learning processes between people. Appropriate methods for the study of learning from this perspective might be to conduct case studies with observations and interviews to come close to the respondents and understand learning in the network based on culture, language and socialization. One problem of studying learning from the social perspective is that the researcher might come too close to his or her data and therefore lose critical distance. Another problem might be that qualitative case studies are inadequate in testing theoretical concepts and relations on a larger population.

From this discussion, it appears that there are several ways to study learning. Which, then, is the right way? Different researchers will, depending on the perspective and research method, arrive at different explanations. Some researchers say that single paradigms are mutually exclusive. Burrell and Morgan (1979, p. 25) write:

a synthesis is not possible, since in their pure forms they are contradictory, being based on at least one set of opposing meta-theoretical assumptions. They are alternatives, in the sense that one can operate in different paradigms sequentially over time, but mutually exclusive, in the sense that one cannot operate in more than one paradigm at any given time, since in accepting the assumptions of one, we defy the assumptions of all the others.

However, my view is that increased knowledge can be reached from different research perspectives. Multiple perspectives allow us to see different effects and processes in learning networks among entrepreneurs. Instead of choosing one perspective, one might look at the research questions from several angles. It should be a strength to combine complementary elements of all perspectives. In this dissertation, elements of several perspectives on learning (Illeris, 2002) are combined and integrated. The way in which research can benefit from multiple perspectives and combined methods will be described in this chapter.

Research Design

The section below presents an overview of the methodological choices and their relation to underlying assumptions, to theoretical foundations and to the research questions. After this overview there is a deeper description of the data collection and the data analysis.

The first paper in this dissertation describes learning outcomes. The second paper asks how different conditions related to formal learning networks facilitate an appropriate learning situation; the third interest is to answer how trust can be built within learning networks and what kind of learning can be expected when trust is built. Taken together, those research questions motivated a process research approach and an

understanding of how learning evolves over time and why it evolves in a certain way (Langely, 1999). To gain an in-depth understanding of outcomes and processes in learning networks, the case study approach was used (Eisenhardt, 1989; Yin, 1994). Different qualitative data were focused and used in each paper (table 1). This research strategy is closest to the interpretive onset (Burrell and Morgans, 1979): “a method of interpretation of human action and all products of such actions” (Follesstad in Martin and McIntyre 1994, p. 223). The meaning of social occurrences can therefore be understood from “within” the actor’s perspective (Davidsson in Martin and McIntyre, 1994). This methodological choice is consistent with the assumption that entrepreneurs actively construct knowledge with others.

Learning outcomes are studied as a result of participating in the learning network. These outcomes can represent both cognitive changes and changes in behavior in work situations. To determine what the participants have learned, the author mainly started from participants own statements on what they felt that they have learned. Additionally, the learning processes in the network are studied in order to understand how and why they have led to different learning outcomes. The social side of learning is of major importance. The learning situation is also studied by asking the participants about different activities and relations in the network. The entrepreneur’s subjective experiences are also related to data material from observations of interactions in learning networks and from analyzing events in the video-recorded material.

In the first three studies, learning is not measured but different types of qualitative data are interpreted to deepen our understanding of the phenomenon. Learning in networks is understood by studying the individual’s experiences of his or her learning (cf., Elster 1989; Watkins in Martins and McIntyre 1994). In the empirical data, material based on interviews space is provided for the participating entrepreneurs’ subjective experiences (Gustavsson, 2004). The interviews could also be triangulated with video recordings and written material. Through systematic comparison among types of data and comparison with previous research, knowledge can be elevated from the purely individual subjective to the culturally intersubjective level (Louis, 1981). The conclusions from these studies are not statistically generalizable, but they have a close data fitting (i.e., accuracy) and are analytically generalizable, (i.e. transferrable to similar contexts) (Kjörup, 1999; Yin, 1994).

To deepen and broaden our understanding of the learning network, qualitative studies are complemented with a broad survey in the final article (table 1). Hence, to answer the fourth research question, quantitative data, deductive reasoning, and statistical method were used.

In this study, trust, learning and self-efficacy are measured not as representing an objective reality but as the entrepreneurs common perceptions of respective construct and based on the assumption that individuals' subjective perception appear as objective reality to them affecting their behavior (e.g., Ekvall 1987; Schneider, 1975). The findings from the study provide additional evidence of outcomes and processes in learning networks which still must be put into a context to be valid and useful; it must also be followed by research with different methodological approaches (cf. Tsoukas, 1989).

THE SWEDISH KRAFT-PROJECT			
Paper 1	Paper 2	Paper 3	Paper 4
"The industry network" - case study			Survey
Focus on: interviews and written evaluation. Supported by: video recordings and documents	Focus on: interviews, documents, learning style inventory Supported by: video recordings	Focus on: video recordings and interviews	991 mailed. Final sample 785. Usable responses 109

Table 2: Data used in the four papers

Data Collection and Analysis

The following section is divided in two parts. The first part gives a deeper description of the qualitative data collection and analysis. The second section describes the quantitative data collection and analysis.

Qualitative Data Collection and Analysis

Papers 1, 2 and 3 attempt to gain a deep, rich understanding of the learning outcomes, the learning situation, and the trust-building processes in the learning network. A qualitative methodology was chosen partly as no satisfactory theoretical categories from the literature for the learning network context could be derived (Van Maanen, 1979). The research strategy used here is a case study, focusing on achieving insights based on how and why some questions can be used to develop hypotheses and propositions for further inquiry (Yin, 1994). The case emphasizes the rich, real-world context, which provides detailed information on how the processes played out in the network (Eisenhardt and Graebner, 2007). This type of research approach has been recommended for small business research (Curran and Blackburn, 2001), to understand a particular

setting's dynamics, and to investigate a complex social phenomenon (Eisenhardt, 1989; Yin, 1994).

To gain a deep understanding of the experiences of the different participants as well as the interactive processes within the group, data was collected through interviews, participant observation, and videotaping. Conclusions in papers 1 and 2 are primarily based on interviews but with support of data from the observations and the written material. Paper 3 focuses on the video-data in combination with interviews. Hence, there is a report from multiple sources of evidence. The findings here draw from the interview data, but additional video-data and observations of all meetings in the network were used to validate emergent topics and concepts. Because learning is a continuing process, there is a need to observe people in the network over a long period of time rather than rely solely on their self-report. Participation in all meetings and get-togethers gave a coherent narrative of the development in the learning network.

The formal learning network used as empirical material consisted of nine entrepreneurs from different kinds of manufacturing companies. In accordance with the guidelines for the krAft-program, the network activities were designed to stimulate the sharing of experiences that could improve the participating entrepreneurs' capacity to exploit business opportunities. In order to understand the participants' experiences and the interactive processes in the group, data was collected through interviews, participant observation, and videotaping. In total, 27 interviews were conducted on three separate occasions during the network's one-year time frame (at the beginning, in the middle, and shortly after the program ended). The interviews were both semi-structured and open-ended, allowing the entrepreneurs to reflect on their experiences of the processes in the network and their own learning. The informants had the freedom to express their opinions; describe what happened during get-togethers; and share their attitudes toward and experiences with other participants. What each had learned from the network was also captured. Each interview lasted between one and three hours. Thereafter, interviews were fully transcribed.

Gaining a deep understanding of entrepreneurs' actions in formal learning networks requires actions to be located in the context of the preceding and subsequent events; it is preferable for a large range of potential cues to be recorded (Summerfield, 1983). The trust-building processes in formal networks implies the need to observe and analyze sequential social behavior in its context. Hence, observing and videotaping participants allowed the researcher to study the way in which group interactions supported trust-building, exchange of experiences,

and learning. In paper 3, the multiple sources of data allowed the identification of the conditions under which trust grew. In this paper, more effort was put into observing participants' verbal, visual, and body language in addition to their interactive conduct and interpretations of talks and discussions (Clarke, 2007; Heath, 2004). Events pertaining to trust-building could be recognized and the video was a valuable way to examine what sparked events, how they played out and who participated. Fifty-five hours of meetings were recorded on a digital video camera, and the analysis of the videos focused on the entrepreneurs' conduct and social interaction.

The three first papers in this dissertation provide an interpretivist account which make sense of the entrepreneurs' statements and interactions in the network. Several interpretations of the data are possible; however the interpretation is grounded in deep involvement in the learning network; it is also guided by and compared with the issues that the literature suggests are important constructs that affect learning. Hence, the data analysis is based on systematic interpretation and reinterpretation of emerging concepts (Johansson-Lindfors, 1993; Lincoln and Guba, 1985) to develop a theoretical framework of learning outcomes and how different constructs, including trust in the learning situation in a formal learning network, influenced those learning outcomes. Throughout the research process, data were constantly compared, coded, and triangulated with data from multiple sources using open coding of transcripts, as suggested by Remenyi and colleagues (2002). Statements in interviews were compared with observations from the video recordings. To mitigate bias, the findings were discussed with other researchers on several occasions. In summary, the data analysis for this qualitative studies consisted of three stages.

In the first stage, transcribed interview data from each participant in the network was summarized. The narrative described each participant's experiences and reflections from the network in chronological order. The summary also contained information about the organization collected from documents supplied by the entrepreneur. Particular events and situations that were relevant to a trust perspective from the videotaped data were transcribed using Transana software (www.transana.org). This data software allowed the video segment to be viewed while the transcript was being read or written (fig. 3). Transana synchronizes the transcribed text with the segment of audio and video data and allows coding the data with those keywords (i.e., codes) which were interesting for the theory building. The segments of data varied from a few seconds to a few minutes and only those segments that were interesting from a trust perspective were transcribed and analyzed. For each video segment two

separate transcripts were made, one for non-verbal interaction and one for verbal interaction (Mavrou et al., 2007). The non-verbal transcripts describe the situation with, for example, whether participants were making eye contact, how they responded to questions, loudness of voices, time spent touching each other and turn-taking in conversations (Summerfield, 1998). The verbal transcript describes the conversation of the entrepreneurs in the specific video segment.

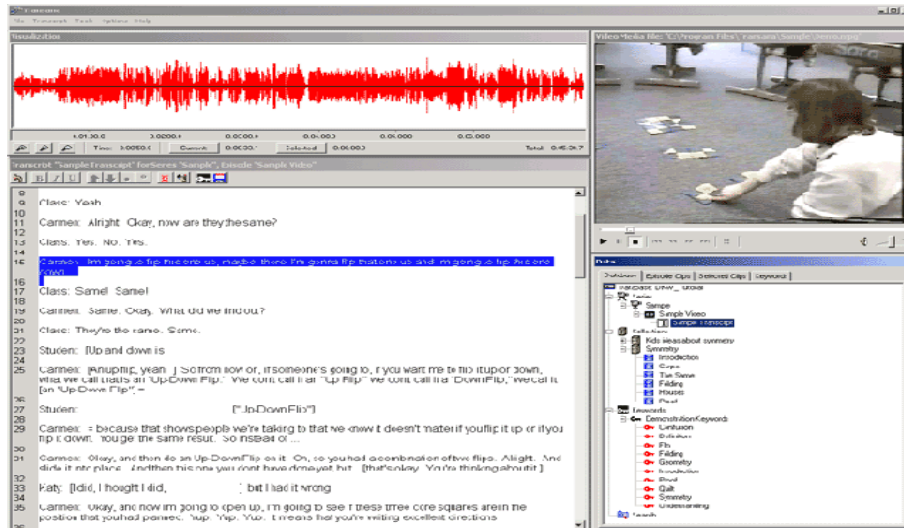


Figure 4: Transana screen (www.transana.org)

Second, theoretical ideas inspired by the data (video, interview, or participant observation) or literature (previous research findings) were registered. Next, evidence from the data was used to determine whether a theoretical idea could be grounded (Sutton and Hargadon 1996). Broad categories of learning outcomes, learning situation factors, and trust-building processes, suggested by previous research, were used to describe the broad categories. This resulted in a broad picture of what was happening in the data. In other words, the summaries were reorganized around themes central to the research question. This process was highly iterative (Strauss and Corbin, 1998), moving among the summaries, existing theory, and other raw data. During this process, the categories were revised and elaborated with initial ideas, as additional evidence suggested modifications or eliminations. Hence, the broad theoretical categories can be seen as a perspective which was filled and developed by empirical observations (Johansson-Lindfors, 1993).

Third, descriptions and categorizations for each participant were compared and cross-checked, like a cross-case analysis. The analysis continued to be an iterative process between data, and the emerging patterns were refined into conceptual categories (Eisenhardt, 1989). As part of this process, the constant comparative method to modify and simplify the conceptual categories to create simpler, more robust categories that were distinct but that could also be related to each other (Strauss and Corbin, 1998).

In sum, the purpose of this qualitative research was to develop an understanding of outcomes from and processes in learning networks. These studies are based on a single learning network; thus, it is not certain that the findings of this study can be generalized to other types of learning networks in other contexts. The value of the research lies in its ability to provide insights through rich detail, to produce grounded models, and to produce hypotheses and propositions for further testing. To complement this qualitative research with other insights, quantitative research was also conducted.

Quantitative Data Collection and Analysis

To examine the relation among trust, learning and self-efficacy, the last paper in this dissertation relied on a quantitative survey. The fourth paper therefore relied on a deductive reasoning, or on previous theory from which testable hypotheses could be derived. A large scale questionnaire can in this respect be considered a complementary source of data as it has potential to test the relation between trust and learning, measured by an increased capacity to seize business opportunities and how the entrepreneurs own self-efficacy can moderate this relation. There are advantages to using both qualitative and quantitative approaches, since they address different phenomena of the research area. In this way they support each other (Miles and Huberman, 1994).

The large-scale questionnaire was carried out almost three years after the completion of the krAft project. In developing the questionnaire, findings in three previous qualitative studies in addition to other scholars' validated measures were important point of departure. The final version of the questionnaire comprised five areas pertaining to learning outcomes and processes in learning networks: 1) general information about the entrepreneur and his/her firm; 2) individual learning outcomes; 3) organizational learning outcomes; 4) learning network design; and 5) financial information. The fourth study used measures of organizational learning in terms of capacity to act upon business opportunities, trust, and self-efficacy. In addition, data on potentially confounding variables that could influence the trust-learning relationship were captured. The

effects of venture size were controlled for (Lyles and Salk, 1997; Nason, 1994; Wincent, 2006) measured by the number of employees before attending the learning network. Competition was controlled for by counting the number of competing firms within each network. Finally, the study controlled for the effect of the participants' industry experience (Gnyawali et al., 1997).

Data was collected to test the hypotheses and assess the learning outcomes; the extent to which the entrepreneurs' capacity to exploit business opportunities had improved. Supported by previous research (Clement, 1982; Kirkpatrick, 2006), a three-year time lag was believed necessary for valid estimates of the program. Data was collected by mailing a survey to all listed participants (i.e. 991 entrepreneurs) registers provided from the central krAft management. A prepaid return envelope addressed to the university was attached and confidentiality was ensured. After sending out the questionnaires, The author was directly informed that some of the former participants in krAft could not be reached because they were no longer engaged in venturing. Many of those had not been actively engaged in venturing during the program and notified us of this fact. Moreover, I was informed that some entrepreneurs had neither actively participated in nor enrolled in the program and should be excluded from the list of possible companies in the krAft program. All 206 of these exceptions were excluded. The study ended up with a final sample of 785 participants. Of these, 109 usable responses were returned, for a response rate of 14%.

To assure the generalizability of this study's conclusions the risk of biased data was examined. A random sample (10%) from the non-responding individuals was taken and they were called by phone. The respondents were asked why they had not participated in the study to classify whether non-respondents were passive or active. A vast majority could be classified as passive, suggesting a low risk for a non-response bias. Rogelberg and Stanton (2007) state that in general, passive non-respondents do not differ from respondents.

Descriptive statistics and correlations analysis were conducted before the formal testing of the hypotheses. To test the relation between variables, an ordinary square (OLS) regression was conducted in SPSS. Moreover, in order to control for multicollinearity between the independent and dependent variables, a variance inflation factor (VIF) was undertaken. The VIF value was below 1.29 for each variable, suggesting that multicollinearity is not a problem in the empirical data.

Summary of Papers

This part summarizes the appended papers. The introduction to this summary explains the connections among the papers.

Temporary formal policy-led learning networks among entrepreneurs from several SMEs have become a forum and mean for competence development and strategic change. Although such networks seem to be widespread in practice, this is not indicative of effectiveness. The purpose of the first paper in this dissertation is to examine what learning outcomes that can emerge from such government supported learning networks. The second paper investigates what factors in the network learning situation can be important to produce different learning outcomes. There is an ongoing debate how to design learning environments; therefore, the research question has theoretical and practical implications the structuring of networks to reach the learning intentions of individual members. The third paper deepens the understanding of trust-building processes among entrepreneurs participating in formal learning networks for an increased ability to exploit business opportunities. The paper helps to explain how trust can be built in support of business exploitation. The fourth paper empirically tests the relation between the development of trust in other entrepreneurs in the network and the ability to act upon business opportunities. There is also an investigation of whether or not an entrepreneur's self-efficacy moderates the relationship between trust and learning outcomes, manifested as an increased capacity to act upon business opportunities. A more complicated picture of the relation between trust and benefits than traditionally outlined is suggested. Taken together, all four papers increase the knowledge about entrepreneurs in formal learning networks, both in processes and in outcomes.

PAPER 1: SWEDISH INTERORGANIZATIONAL LEARNING NETWORKS: OUTCOMES IN THREE DIMENSIONS

Several scholars have suggested the use of networks for owners/managers or entrepreneurs in small and medium sized firms to arrive at an outsider's perspective. In particular, learning networks set up for the purpose of increasing knowledge, as an improved capacity to do something, have become an answer to the special conditions and needs of entrepreneurs in SMEs. Despite the growth in interest in learning within networks, limited research has shown concrete learning outcomes from these types of networks. The first paper therefore examines what learning

outcomes that can emerge from learning networks. The relevance of interorganizational learning networks in supporting the development of competence in SMEs is explored.

The findings in this paper are based on interpretations of data from interviews with participants from one learning network in Sweden's krAft-program. Information from the interviews was supported by and compared to the video-recorded observations, written evaluations and learning style inventories. The examination of learning outcomes may benefit from the use of mixed longitudinal qualitative data. What can be captured with qualitative methods (similar to my approach) cannot be captured by quantitative methods (which can capture changes in market share, turnover, new products) and vice versa. Although the analysis in this study focuses on the individual level, organizational level outcomes are also explored.

The empirical case showed that a learning network with owners/managers from several SMEs can support competence development. Learning outcomes are multidimensional, and can be categorized as cognitive, psychodynamic, and social. Data revealed cognitive changes in terms of the participants' thinking patterns. Cognitive learning outcomes acknowledge participants to acquire new or enhanced knowledge within business strategic issues. Findings on psychodynamic outcomes recognize that participating entrepreneurs developed emotionally, in terms of affective states. This represented new motivation, excitement and confidence for accomplishments in entrepreneurship. The network participation seemed to provide the energy and courage to experiment with new ideas and make changes in the participants' business when needed. The third category of learning outcomes identified in the network consisted of social changes for the participants: how they developed social skills and how they viewed their social network as useful. These changes in their view of their social network can play a significant role when an entrepreneur needs to acquire resources and information, or build legitimacy. A synthesis of these three types of learning outcomes can be useful when a participating entrepreneur wants to develop or change his/her business. When these outcomes were compared to previous research on forms of knowledge, several patterns emerged (see figure 5).

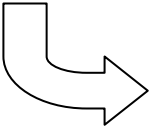
Learning outcomes	Forms of knowledge
Cognitive	Know-how (practical understanding) Know-why (theoretical understanding) Know-what (strategic understanding)
Psychodynamic	Know-myself (self-awareness and confidence)
Social	Know-who (social network)
	Know-change (ability to change practice)

Figure 5: Learning outcomes and forms of knowledge

Finally, the analysis demonstrates that the network method in relation to more traditional learning methods has advantages in developing psychodynamic and social learning outcomes. The findings in this paper advance our understanding of different forms of knowledge creation and acknowledge that these forms can develop within an interorganizational learning network. For entrepreneurs, the findings in this paper can assist them in deciding whether to invest time and money in this type of method for competence development.

The last remark in this first paper suggests future research to determine the relationship among the activities in the learning network and the acquired learning outcomes, specifically in terms of what constitutes an optimal design of learning networks. This will lead to the second paper.

PAPER 2: ENTREPRENEURS IN LEARNING NETWORKS: PROBLEMS, OPPORTUNITIES, AND IMPLICATION FOR PROGRAM DESIGN

The second paper develops an understanding of learning conditions that can be linked to learning outcomes in SME-formal learning networks. Scholars and practitioners have criticized most development programs for small firms as less than relevant. For networks to meet the need of entrepreneurs in SMEs, scholars and practitioners must consider

the network's management and design. The environment or situation in a learning network presents both barriers to and opportunities for learning and strategic business development.

The conclusions in this paper are based on a case study of a Swedish learning network program for entrepreneurs designed to support problem solving, leading to exchange and of development of the business of the entrepreneurs. The empirical data consists of interviews and observations during a one-year program period. The case study approach adopted here allowed for detailed observations and multiple sources of data in order to obtain reliable information on the learning situation. A qualitative methodology was chosen for this paper, as satisfactory theoretical categories for the learning network context could not be derived from the literature. The approach is well suited to the understanding of a particular setting's dynamics, and to the investigation of a complex social phenomenon.

The findings in this paper show that for entrepreneurs to benefit from useful learning in formal learning networks, the management of the network should be demanding and conditions in the learning situation must be considered. The learning situation is described in terms of four dimensions: design and content, social interaction, participants, and context. Different interactive constructs, critical to learning, within these four dimensions, are identified and summarized in ten propositions:

- Learning outcomes are enhanced when participants are motivated by a need for development
- Previous network experience enhance learning outcomes from learning networks
- Individual learning outcomes are enhanced when participants learning style is related to the learning activities in a learning network
- A higher level of trust between learning network participants is positively related to learning outcomes
- Learning outcomes increase when the participant is given the opportunity to influence the design and content in a learning network
- Learning outcomes increase when there is integration between action and reflection
- Active and accurate guidance between network meetings increases learning outcomes
- More than one attendant from each firm increases organizational learning outcomes from the network
- The participants' legitimacy in the focal organization is positively related to organizational learning outcomes

- External events affecting the possibility to apply new knowledge gained from the learning network affect learning outcomes

While research acknowledges the advantages of formal learning networks, this paper develops a deeper understanding of the dimensions that are critical to learning in networks. The propositions are used to give practical advice for program implementation. It concludes that the program needs a deductive structure that can offer a sense of structure but without constraining the inductive and explorative part, in line with the entrepreneurs' effectuation logic. Future research is suggested to test the relationship between conditions in the learning situation and acquired learning outcomes.

PAPER 3: ENTREPRENEURS LEARNING TOGETHER: THE IMPORTANCE OF TRUST BUILDING FOR LEARNING AND ULTIMATELY BUSINESS EXPLOITATION

The second paper found that trust between entrepreneurs in the networks was one of the most important factors in learning. When entering a formal learning network, participating entrepreneurs may perceive great risks with sharing experience and information. They know little about the other entrepreneurs' intentions, personalities, competencies, and needs. This brings perceived risks concerning both uncertainty and opportunistic behavior. Hence, how can trust be developed to achieve the kind of mutual sharing that would change entrepreneurs' ability to exploit opportunities? The purpose of the third paper is to develop knowledge of the primary trust-building processes among entrepreneurs in formal learning network and what kind of learning outcomes may facilitate business opportunity exploitation once such trust has been built.

Using longitudinal data through observations and video-recordings during network meetings and get-togethers in combination with personal interviews, this study is based on rich data on the development of trust and how entrepreneurs in networks can learn to improve their ability to take advantage of business opportunities. Through the video-analysis, subtle evidence of incremental trust-building could be found. This kind of observational and video-based methodology framework has as yet found little application in the management field, although it has great potential to make significant contributions to research when process is important and when outcomes are difficult to measure.

This study shows that to achieve the kind of mutual sharing that would improve entrepreneurs' ability to exploit opportunity it becomes critical that trust develop among the participating entrepreneurs. Three

processes that build commitment, companion, and competence trust were identified. This trust building enhanced sharing among entrepreneurs by reducing the risk that is associated with uncertainty and opportunistic behavior. In addition, cognitive, emotional, and social changes were identified as learning outcomes for the participating entrepreneurs. Such changes may have potential consequences for entrepreneurship by improving the entrepreneurs' capacity for business exploitation. Conclusions from the third paper can be summarized below:

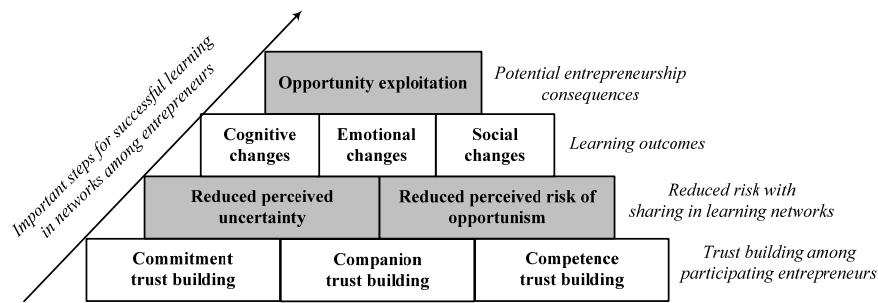


Figure 6: Integrative model of trust-building processes and learning among networking entrepreneurs

The managerial implications indicate that network organizers should initiate trust building activities such as informal get-togethers and conversations about shared goals and expectations in order to improve direct communication, encourage open and honest information sharing, and maintain confidentiality. In addition, network organizers and some participating entrepreneurs can expect networking to have radical consequences. The paper concludes with recommendations for future research to measure and test the influence of network participation on the capacity to exploit business opportunities. In addition, it is important to see the explanatory potential in including the entrepreneur's personality to arrive at more comprehensive explanations of when and why an entrepreneur's cognitive, emotional, and social changes may translate into an improved capacity to exploit business opportunities. Paper 4 elaborates on these findings.

PAPER 4: TRUST AND SELF-EFFICACY IN FORMAL LEARNING NETWORKS: THE EFFECTS ON ENTREPRENEURS' CAPACITY TO ACT UPON BUSINESS OPPORTUNITIES

The final paper examines the influence of trust among network partners on learning as a result of their participation in a formal network, as measured by an increased capacity to seize business opportunities. Ample and undisputed evidence exists that trust is positive for exchanges and sharing (papers 2 and 3). There is an examination of the extent to which trust may be beneficial for entrepreneurs in formal learning networks. In addition, there is a reason to expect that trust can be problematic for entrepreneurs who have low self-efficacy. The study therefore accomplishes several aims. First, the study contributes to the literature on learning networks and general trust research. Second, it outlines how entrepreneurs' self-efficacy affects the way in which they translate information from trusted partners into a better ability to take advantage of business opportunities.

This study is based on survey data from 109 entrepreneurs who participated in Sweden's krAft-program. The program included 101 separate networks and we ended up with a final sample of 785 participants within those networks. A non-response analysis was conducted and found a low risk for non-response bias. The measures of capacity to act upon business opportunities, trust, and self-efficacy were based on self-reported data from the questionnaires on a 5-point Likert scale. Data analysis on potentially confounding variables that could influence the trust-learning relationship was conducted.

As depicted in the figure below, there is a positive relationship between the development of trust in other networking entrepreneurs and an improved capacity to act upon business opportunities in government supported formal learning networks. Further, self-efficacy moderated the relationship between trust and entrepreneurs' capacity to act upon opportunities. For entrepreneurs with low self-efficacy, results support an inverted U-shaped relationship, with the greatest outcomes reached with an intermediate level of trust. For entrepreneurs with high self-efficacy, a positive linear relationship is supported.

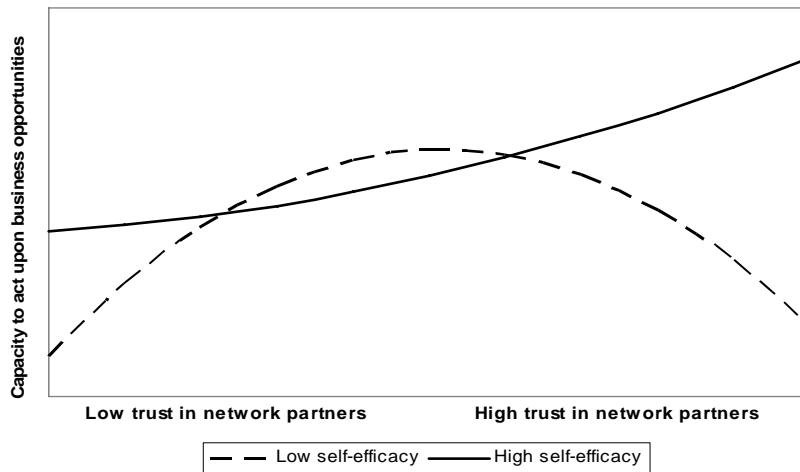


Figure 7: Interaction of trust and self-efficacy on entrepreneurs' capacity to act upon business opportunities

This study extends our knowledge by demonstrating that trust is generally positive in the network setting and may, in fact, be important in the ability to act upon business opportunities. This study also concludes that theory on learning networks may lose explanatory power if entrepreneurs' self-efficacy is not taken into account. In a context where individual entrepreneurs take central roles in cooperative arrangements, it cannot be taken for granted that the potential benefits derived from trust can be used; this because the individual entrepreneurs' perception of their capabilities can become a barrier to learning. The managerial implications suggest that programs should offer the potential to improve an entrepreneur's self-efficacy through social persuasion, positive feedback and encouragement.

For future research, it is recommended that the extent and quality of the exchange be measured and that detailed data from networking entrepreneurs be used to examine whether or not trust can have any adverse effects on learning outcomes. All papers are summarized in the following table:

	Purpose	Design/methodology	Findings	Implications
Paper 1	Examine what learning outcomes emerge when owners/managers from SMEs participate in formal inter-organizational networks.	Interpretations of data from interviews with participants from a single learning network. Information from the interviews was validated by video-recorded observations, written evaluations and learning style inventories.	Formal inter-organizational networks can be an appropriate method to support learning of owners/managers from SMEs. Learning outcomes can be categorized as cognitive, psychodynamic and social.	Learning networks in relation to more traditional forms of competence development has strengths in developing psychodynamic and social outcomes. These outcomes together with cognitive outcomes can be used to further develop ones business.
Paper 2	Develop an understanding of learning situation conditions in learning network that can facilitate learning among entrepreneurs.	Exploratory case study of a single learning network. Data was collected through interviews and observations during a one year program period.	The learning situation in the learning network can be described by four interactive dimensions; participant, design, interaction, and context.	For entrepreneurs to gain useful learning in learning networks the management should be demanding and various constructs in the learning situation must be considered in the program design.
Paper 3	Examines trust building and learning outcomes among entrepreneurs in networks for the increased ability to exploit business opportunities.	Longitudinal qualitative case-study with data collected through observations and video-recordings during network meetings and get-togethers jointly with personal interviews.	Findings suggest three processes that build commitment, companion, and competence trust. When entrepreneurs build trust in each other, they experience cognitive, emotional, and social changes by participating in learning networks, which may have potential consequences for opportunity exploitation.	The dynamic development of trust have theoretical and practical implication for how networks might best be structured to accomplish the learning goals of individual members and ultimately to an increased ability to exploit business opportunities. I believe the rare observational and video-based methodology has great potential to make significant contribution to entrepreneurship theory.
Paper 4	Examine how trust in network partners influences the capacity to act upon business opportunities for entrepreneurs and the role of self-efficacy.	Survey data from 109 entrepreneurs who took part in learning networks. An ordinary least squares (OLS) regression analysis was made.	The results support a positive relationship between trust and the capacity to act upon business opportunities. The entrepreneur's self-efficacy was found to moderate this relationship.	The moderating effect of entrepreneurs' self-efficacy on the relationship between trust and the capacity to act upon business opportunities contributes new insights to the trust literature, which seems to over estimate the universal ability to capitalize on potential trust benefits. Managers of learning networks should use trust-building activities and regulate the entrepreneurs' level of self efficacy.

Table 3: Extended summary of paper

Discussion and Suggestion for Future Research

This final chapter concludes the dissertation and suggests avenues for further research. The types of learning networks focused on in this dissertation are those formally established by university experts or consultants for the primary purpose of increasing entrepreneurs' knowledge. The networks are designed for experiential learning (i.e., reflecting on one's actions and their outcomes) and social learning (i.e., seeking advice, guidance, and encouragement from other network participants). Entrepreneurs who joined such networks had access an arena in which to learn to better exploit business opportunities with venturing (Clarke, et al., 2006; Cope, 2005) The overall goal of the research was to increase knowledge among entrepreneurs from small and medium sized enterprises about the processes employed in formal policy-led learning networks and the results they achieve. The research provides data from the application of a combination of process- and outcome-oriented approaches, as well as other methodologies and data resources.

The Four Studies

To meet these overall objectives, each study described in the preceding chapters addressed a specific research question. The first study evaluated the outcomes of formal learning networks among entrepreneurs from small and medium sized enterprises. This study is important, because previous outcome research have not addressed these types of learning networks. Although such outcomes were the main focus of the first study, they were also addressed, albeit in different ways, in the other three. The collective findings from these studies clearly show the cognitive, emotional, and social changes that characterized the learning outcomes for the participating entrepreneurs. These changes, in turn, facilitated the entrepreneur's capacity to take advantage of their business opportunities. In the fourth study, the capacity to act upon business opportunities was assessed using a six-item measure. The outcomes concern how the learning network affected the firm, for example, in the development of new products and services, reduction in the time needed to introduce them, and an increase in market share.

The second study addressed the processes employed by the learning networks by investigating the various characteristics of the specific learning environment. Understanding these characteristics could make an important contribution to the ongoing debate about how to define a beneficial learning situation for entrepreneurs in formal learning networks. The attempt to address this issue began with a review of the previous literature, in which

several problems related to learning and entrepreneurial knowledge creation among entrepreneurs in small and medium sized firms were discussed (Chaston, et al. 2001; Gibb, 1997; Florén, 2005; Minniti and Bygrave, 2001; Pedler, et al. 1997; Storey, 1994; Ylinenpää, 1997; 2005). The findings demonstrate that if entrepreneurs are to gain useful knowledge from formal learning networks, the learning environment must be demanding in terms of both the design and management of the network. One major finding from the second study suggested participants' trust as important in the learning network to achieve the learning outcomes.

How this trust can be built and used to facilitate learning outcomes in formal learning networks was addressed in detail in the third study. The findings show that trust is necessary for managing the interdependencies and uncertainties that entrepreneurs from different firms encounter when they ask one another for advice, make comparisons, and share experiences. The qualitative and detailed longitudinal data obtained in this study provide evidence for three primary processes that respectively build commitment, companionship, and competence trust. The development of trust through these three processes was demonstrated with reference to various network activities, such as dialogue, presentations, best-practice cases and social activities.

The fourth study demonstrated a positive relationship between trust and learning outcomes, operationally defined as an increased capacity to seize business opportunities. The findings also indicate that the entrepreneurs' self-efficacy moderated this relationship. At higher levels of trust, the capacity to act upon business opportunities is greater for entrepreneurs high in self-efficacy than in those low in self-efficacy. The capacity to act on business opportunities was lower with low and high levels of trust than with an intermediate level of trust.

The results from the four studies taken together lead to the conclusion that formal policy-led learning networks can help entrepreneurs in small and medium sized enterprises be more successful in activities involving the introduction of new goods, services, raw materials, and organizing methods. However, if such entrepreneurial knowledge is to be achieved, the learning situation must be tailored to the particular characteristics of the entrepreneurs and their work situation. Learning is central to the entrepreneurial process. As noted by Smilor;

"Entrepreneurs are exceptional learners. They learn from everything. They learn from customers, suppliers, and especially competitors. They learn from employees and associates. They learn from other entrepreneurs. They learn from experience. They learn by doing. They learn from what works, and more importantly, from what does not work" (Smilor, 1997, 344).

The above citation, combined with the findings from this dissertation, suggests that formal learning networks are especially suitable arenas for entrepreneurs to learn in. Entrepreneurs seem to learn inductively from what they have in front of them and from attempting to solve practical problems (e.g. Merriam and Leathy, 2005; Sarasvathy, 2001). In particular, they seem to learn from working with other people in a specific business context (e.g. Florén, 2005; Tell, 2001) All these opportunities are provided by learning networks. As such, entrepreneurial learning involves the creation of new solutions rather than absorbing existing knowledge or deductive reasoning (Sarasvathy 2001), which may be better suited for managers. A formal learning network designed to balance learning what has and has not worked in the past with the application of totally new knowledge and ideas can provide a good environment for such entrepreneurial learning. The fundamental requirement is to create optimal conditions for entrepreneurs to share their experiences with one another. The research described in this dissertation shows that trust and self-efficacy play important roles in creating such conditions.

Theoretical and Practical Contributions

The research described in this dissertation makes several contributions to entrepreneurship theory by integrating it with learning theory. First, it acknowledges the kind of outcomes that can emerge from formal learning networks and how these outcomes can have entrepreneurial consequences. Second, it offers suggestions about how the learning situation can be described and the characteristics of an appropriate learning environment for entrepreneurs. Furthermore, the research contributes to the understanding of how trust in formal learning networks is built and of its role entrepreneurial learning. At the same time, it shows that the benefits potentially derived from trust cannot be recognized without considering the entrepreneurs' self-efficacy in the analysis.

The research also has practical implications. The findings strongly point to the importance of trust among entrepreneurs in formal learning networks. For network organizers, the findings imply that deliberately stimulating trust-building activities can be beneficial. They suggest further that the consequences of participating in such networks can be multidimensional. These various factors must be acknowledged by policy makers, network organizers, and entrepreneurs evaluating the successes and failures of networks. Finally, the dissertation offers possible ways to use formal learning networks to take advantage of business opportunities.

Notes on the Quality of the Research

This section, will outline how the methodological choices author made in the research might have influenced the quality of the findings and

conclusions presented in this dissertation. The discussion will be divided into two parts, the first commenting upon the three qualitative studies and the second evaluating the quantitative study. By combining qualitative and quantitative methods to address the overall purpose of the research, my hope is that the findings are less biased and more reliable than they would have been if they relied on just one methodology.

Qualitative studies

The first three studies drew on multiple qualitative data sources, because the purpose was to build theory and gain a deeper understanding of the processes used by formal learning networks and the outcomes of applying these processes. It is important to note that because these findings are based on a small number of individuals in a single network, we cannot be sure they can be transferrable to learning networks that were designed differently. However, there are several reasons why the findings and conclusions are analytically generalizable (Johansson-Lindfors 1993; Yin 2003) to formal learning networks similar to those studied for this dissertation. In this case, analytical generalizability means that the concepts and theory generated through the research can be applied to increase our understanding of similar types of formal learning networks.

The trustworthiness of the qualitative studies is founded on triangulated empirical data (Denzin 1994). First, the data from the interviews, video recordings, and written evaluations were found to be mutually supportive and do not contradict one another. Moreover, the data were collected at several times during a one-year period. Second, to mitigate bias from retrospective sense-making and impression management, which can be a potential problem in qualitative research (Leonard-Barton 1990), Author discussed the findings with his supervisors and at several seminars and research conferences. Major parts of the research were also discussed with the respondents in the same learning network studied in the research. Third, all the findings were closely compared to previous research in the area.

Another way to assure the quality and trustworthiness of qualitative research is to optimize access to the participants and the information they can provide (Johansson-Lindfors 1993). To achieve this objective, author carefully explained to the informants how the recordings would be used and guaranteed them confidentiality. The entrepreneurs proved to be readily accessible and participant observation was very good; the participants all agreed to be videotaped and set aside ample time for the interviews.

A final concern was whether the video recordings would accurately reflect the naturally occurring behavior of entrepreneurs in formal networks. In other words, would they be representative of entrepreneurs outside the video session? The participants seemed to forget about the camera and became absorbed in the activities at hand. Therefore there is no reason to believe

that the events captured in the videos would not occur in learning networks situations that are not videotaped.

Quantitative study

The findings and conclusions from the fourth study are based on survey data from entrepreneurs who took part in formal policy-led learning networks within the national krAft-program. Caution must be exercised in generalizing the findings from the survey because of the low response rate of 14%. On the other hand, the generalizability of the findings is supported by the non-response analysis, which revealed a minimal risk that the answers of non-respondents would have differed meaningfully from those of the respondents.

Finally, it is important to recognize that the focus in this study was on formal policy-led learning networks used by entrepreneurs. Thus, the results cannot be extended to other kinds of learning networks (e.g. informal entrepreneur-led networks) with different aims and different exchange and governance mechanisms. In addition, the sample was restricted to entrepreneurs from small and medium sized enterprises working on a Swedish project. Thus, any generalization to other cultural contexts must also be made with caution.

Future Research

Although the research described in this dissertation makes several contributions to the entrepreneurship literature as well as to practice, avenues remain for future research. One of the main findings described in the dissertation is that trust among partners in formal learning networks facilitates sharing of experiences and ultimately increases the ability to act on business opportunities. On the other hand, an over-reliance on trust can increase the risks associated with taking advice from other entrepreneurs. In this research, learning was viewed as functional, as a way to enable individuals and/or firms to improve and develop. In so doing, it ignored the possibility of dysfunctional learning (Ellström, 1992; Seligman, 1975). Although the expectations for networking entrepreneurs are high when there is a great deal of trust, the information and advice they provide to one another may not always be helpful. Some advice may promote success, but other advice might be dysfunctional. Too much reliance on trust in learning networks can hinder rational analysis, increase errors of judgment, obscure sound decision making, and encourage too much risk taking in venture activities (Goel and Kari 2006; Busenitz and Barney 1997). So far, there has been little research concerning the dysfunctional effects of high levels of trust (Jeffries and Reed 2000; Goel and Karri 2006; Welter and Smallbone 2006; Zahra et al. 2006). Thus, in the present context it cannot be taken for granted that trust among network participants will always result in positive

learning outcomes. More research is needed if we are to develop a more balanced view on the role of trust in formal learning networks.

Another possibility for future research is to examine to what extent an increased capacity to act on business opportunities creates value in the long run. Future research could examine the possible link between venture improvements resulting from participation in formal learning networks and value creation in the business. This is by no means a trivial issue; its resolution could be highly important for the research community as well as for entrepreneurs deciding whether to engage in formal learning networks or not.

Finally, the methodology of entrepreneurship research could be improved by extending the application of the unusual video-based method used in this dissertation to a variety of other research problems. Video technology has unique properties that allow researchers to capture and reflect complex entrepreneurship phenomena from a variety of perspectives. In particular, the video method, if further developed, could make significant contributions to research in which processes are the focus. One interesting approach, for example, would be to let entrepreneurs watch themselves on video and then have them explain their actions and emotions in particular circumstances. Used in this way, the video methods described in this dissertation could add an important new dimension to research findings.

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