

TJIP DE JONG

LINKING SOCIAL CAPITAL TO KNOWLEDGE PRODUCTIVITY

An explorative study on the relationship between social capital
and learning in knowledge-productive networks

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and learning in knowledge-productive networks

Tjip de Jong

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LINKING SOCIAL CAPITAL TO KNOWLEDGE PRODUCTIVITY

AN EXPLORATIVE STUDY ON THE RELATIONSHIP
BETWEEN SOCIAL CAPITAL AND LEARNING IN
KNOWLEDGE-PRODUCTIVE NETWORKS

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1

Introduction: the role of social capital in knowledge-productive networks

1.1 Introduction

In an environment where knowledge is the main organizational driver, the ability to learn fast, adapt regularly to new challenges and acquire technical and interactive capabilities to continuously improve and innovate is crucial (Harrison & Kessels, 2004). This ability is referred to as knowledge productivity (Kessels, 1995, 2001b). Knowledge productivity is the process of identifying, gathering and interpreting relevant information, using this information to develop new capabilities and applying these capabilities to improve and radically innovate work processes, products and services (Kessels, 1995, 2001b). Learning with the intention of innovating requires that relevant parties cooperate. Cooperation is in its nature a fundamentally social activity. In the field of Human Resource Development (HRD) there is a growing interest in studying relations instead of purely individuals (Sanders, 2005). Simply, because when people are at work, connections with others compose the fabric of their daily activities (Dutton & Heaphy, 2003). Insight into how to facilitate and support this social dimension to enable knowledge productivity is an important future challenge in the field of learning and development (Harrison & Kessels, 2004). The relevance of learning in today's organizational setting is rarely under debate. Despite this, the innovation debate is still strongly biased towards technical innovation (Volberda, Van Den Bosch & Jansen, 2006), thereby neglecting the various workplaces in organizations where innovation can take place (Verdonschot, 2009). Taking into account that planned organizational innovation often does not have the desired effect (Chesbrough, 2006), academics are increasingly beginning to look at social capital and network theory to explain innovation processes in the day-to-day workplace (Burt, 2005; Obstfeld, 2005; Tsai & Ghoshal, 1998). This study aims to develop a theoretical framework that provides insight into how characteristics of social capital impact knowledge productivity within networks.

1.2 Outline of the thesis

This study consists of four phases visualized in Figure 1.1: an exploratory phase, a data collection phase, the data analysis phase and finally the conclusion phase. The exploratory phase presents a first presentation of relevant literature. Chapter 3 presents five case studies to investigate how the central research variables operate in practice. Based on these findings the conceptual framework and refined research questions are described in Chapter 4. In order to answer the research questions, the data collection phase consists of a multiple case study of 17 networks. The networks are monitored longitudinally, between a time frame of six months and one year. The data analysis phase consists of within-case analyses and a cross-case analysis presented in Chapter 6 and 7. The conclusions are presented in Chapter 8. The conclusions serve as input to elaborate on the main contributions and limitations of this study. Finally, directions for further research and study are described.

1.3 The rising prominence of social capital

The attention of the World Bank research programme in 1990 on social capital (e.g. Grootaert, 1998) and the publication of the highly influential book ‘Bowling Alone’ (Putnam, 2000) unleashed an academic research wave in several disciplines. Due to the rising prominence of social capital, it is quite impossible to summarize research on social capital into one definition. However, scholars seem to agree that social capital is a value indicator of social networks based on shared norms, values and understandings that facilitate cooperation within or among groups (OECD, 2001). Since management experts and business consultants are beginning to see the possibilities of social networks and social capital as a vehicle for innovation, many management books have been written on the subject (see for instance: Cohen & Prusak, 2001; Cross, Parker & Sasson, 2003; Kilduff & Tsai, 2005; Lesser & Prusak, 2004). Also within academic research, social capital has gained increased attention (Griffith & Harvey, 2004). Overall, social capital theory offers a new perspective to study learning that leads to innovation. This development is moving HRD research activities away from an individual focus towards a network focus in studying learning processes and innovation.

1.4 Human Resource Development

Within the field of HRD there is a sense of urgency to clarify the way social capital and social networks impact learning that leads to innovation (Kessels & Poell, 2004). There is evidence that relationships between individuals offer a new spectrum of insight to explain individual and group behavior, leading more and more towards the relevance of the social system that individuals are part of (Coleman, 1990; Scott, 1991). Learning is a means to do work better and in this perspective it is not so much about personal characteristics that

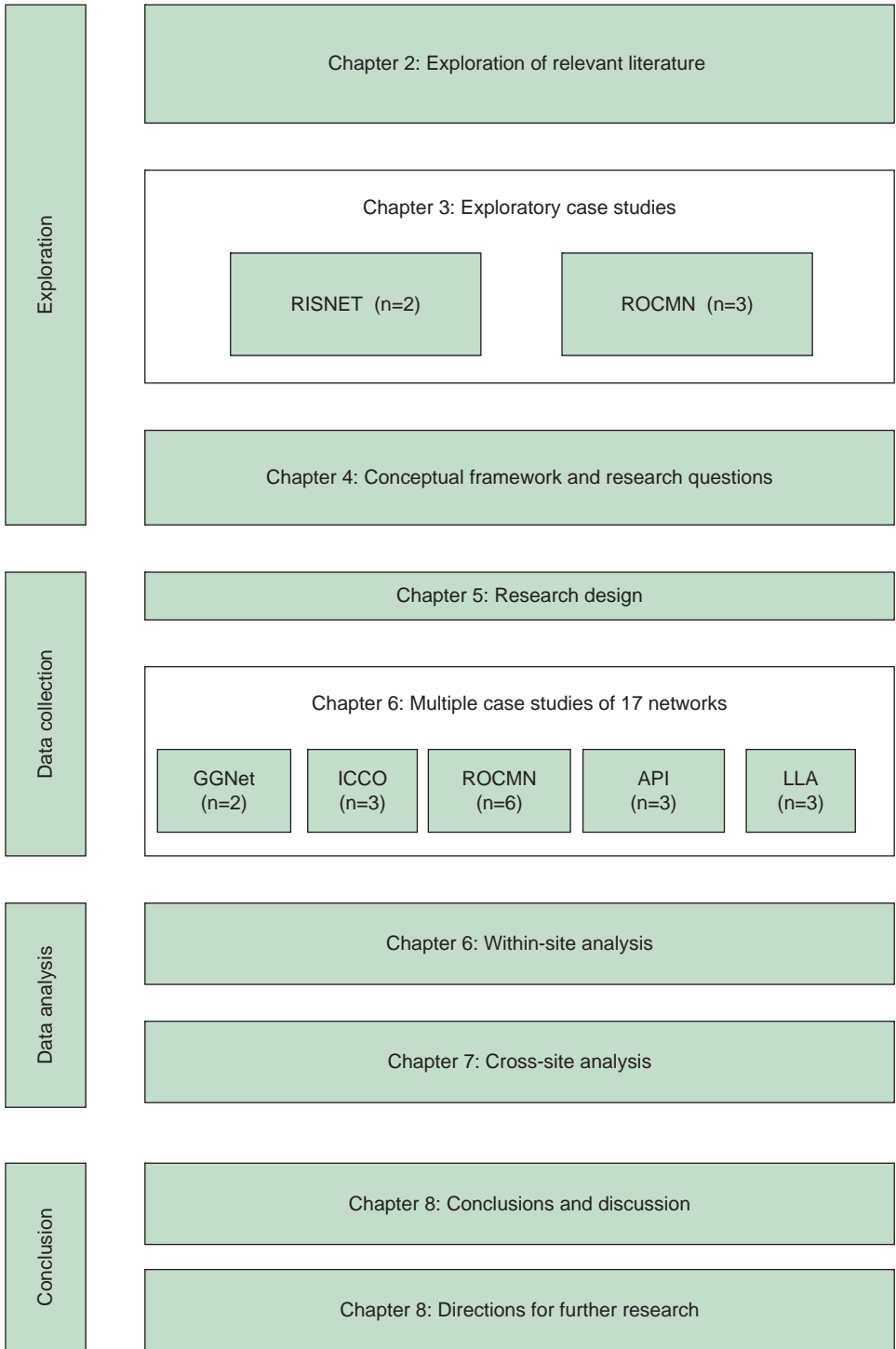


Figure 1.1

Composition of the research project

explain development and innovation, but characteristics of relations and the embeddedness of these relations (Sanders, 2005). Studies on social capital produce evidence for the contention that the composition and structure of social capital has an important impact on learning, innovation and performance (Field, 2005; Kostova & Roth, 2003; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). Although these findings are very useful for creating a mature body of knowledge on the subject, the relation between social capital and learning that leads to innovation is often described as a black box. Practical questions that still remain unanswered are: What characteristics of social capital support learning processes that lead to innovation? How can organizations stimulate knowledge productivity based on a social capital perspective? What is the role for HRD practitioners to support these processes? It is the aim of this study to shed light on this black box, by providing a theoretical framework on how characteristics of social capital explain knowledge-productive processes within networks.

1.5 Past research and etiology

The increased attention for social capital is an outcome of an economic shift, in which the competitive advantage of organizations is changing. Organizational sustainability is no longer based solely on the importance of land, labor or capital; rather, the ability to survive as an organization is based on the competence to exploit knowledge resources (Drucker, 1993). In such a knowledge society, the success of organizations lies in the continuous generation and application of new knowledge (Kessels, 2001). This development shifts from traditional hierarchical structures of companies, towards new forms of cooperation and organization that are built around network structures (Huemer, Von Krogh & Roos, 1998). This perspective of organizing work processes emphasizes four innovative principles of cooperation:

- *Cooperation* that supports working from personal motives, ambition, curiosity and passion for a specific subject matter (Kessels, 2001).
- *Cooperation* where all the members of the organization actively participate to innovate work processes, products and services (Verdonschot, 2009).
- *Cooperation* that encourages experimenting in the day-to-day work environment to answer tough practical questions (Sprenger, 2008).
- *Cooperation* that emphasizes a supportive organizational climate that results in knowledge-productive learning processes (Lesser & Prusak, 2004).

These forms of cooperation are based on a network principle of work: choosing peers, experts and like-minded colleagues to work on intriguing and urgent work-related questions. These networks operate very differently than what is known to us based on the legacy of the industrial era that was built around mechanisms of planning and control and predetermined output. More and more the focus in HRD is shifting towards studying connections that enable individuals or groups to achieve desired results. The increased

interest in social capital theory sheds new light on national, organizational and individual performance (Leana & Van Buren, 1999; Putnam, 1993; Van der Graag, 2005). Studies show strong correlations between social capital and the increase of intellectual capital, organizational performance and innovation (Adler & Kwon, 2002; Kostova & Roth 2003; Nahapiet & Ghoshal, 1998). In general, trust, reciprocity, shared norms and collective action between individuals stimulate collaboration and therefore largely determine the success of individuals, groups, organizations and even nations.

1.5.1 Existing social capital research

Despite the increased attention social capital has been receiving in the academic discourse, only recently social capital theory has been linked to implications for HRD (Kessels & Poell, 2004; Hatala, 2006) and specifically knowledge productivity (De Jong & Kessels, 2007; Van Der Sluis & De Jong, 2009). Macro economical studies on social capital provide empirical evidence that people's networks, economic growth and learning activities are linked (Beugelsdijk & Van Schaik, 2005; Field, 2005; OECD, 2001). However, these findings are only recently connected to HRD research activities (Field, 2008; Hatala, 2006). A better understanding of the relevance of social relations in on-the-job learning is an important challenge in HRD research (Berings, 2006). Although interest in the use of social capital theory to explain learning processes has increased in the field of HRD, in depth exploration of how social capital influences learning that leads to knowledge productivity is still absent. It seems that social capital theory and HRD are two promising and important areas, only not fully connected (for a more detailed review see: Dika & Singh, 2002; Hatala, 2006; Kessels & Poell, 2004).

A majority of the studies on social capital and learning focus on the structural ecology of networks, primarily through conducting social network analysis (Burt, 2001). These research activities consist of mapping social patterns based on measurement items such as trust, sharing of information or friendship. Although these activities have shed light on uncharted territory, specific insight into how social capital affects a learning environment that supports knowledge productivity is still lacking (Kessels & Poell, 2004). Equal attention should be paid towards the relational aspect of social networks and social capital theory. Primarily because scholars have conceptualized that social capital is not a single entity but rather multi-dimensional in nature (Adler & Kwon, 2002; Grootaert et al., 2004; Kostova & Roth, 2003, Leana & Van Buren, 1999). In order to successfully study social capital, a combination of external perspective (the structure of the network) and internal perspective (the quality of relationships) needs to be made. In doing so, academic effort should concentrate on finding a meaningful synthesis of the structural aspects of networks with the relational aspects of networks such as the level of trust, reciprocity or mutual attractiveness to learn from each other.

1.6 Learning as a social activity

Traditionally innovation is studied by focusing on the outcome and the organizational conditions that enable the innovation to occur. Recently, innovation research includes a process perspective, based on innovative learning that can be studied throughout the organization (Verdonschot, 2009). The changing focus when discussing learning processes (Lave & Wenger, 1991) suggests that learning is social and situated more than it is an individual activity. This shifts the perspective from the planned organizational characteristics of learning, such as formal education, training systems and workplace learning towards social learning systems, such as communities of practice, networked learning and collaborative learning. In this viewpoint, learning is mainly social and is enabled through interaction. These interactions are visible when observing networks. This study explores three developments in the ongoing debate in HRD: innovation as part of day-to-day work, the relational perspective of knowledge and finally the perspective of social learning.

1.6.1 Innovation is part of work

In the industrial era, innovation was organized outside the actual work processes, mostly in research & development departments (Chesbrough, 2006). Today, the changing world of work, learning and development in a turbulent business environment exposes the urgent need to develop organizational capabilities to continuously improve and innovate (Harrison & Kessels, 2004). Herein, work can be seen as a learning process, with the critical success factor of constant collaboration with colleagues, clients or other stakeholders. The productivity of a knowledge worker largely depends on collaboration processes in work activities with colleagues, peers or clients. In this perspective, innovation is a collective social activity that cuts across organizations and departments (Harrison & Kessels, 2004) and needs the active contribution of every professional. Innovation no longer consists of the products and new ideas that are developed in one place and implemented in another. On the contrary, innovation takes place in various places within organizations, often by employees who encounter problems that require new solutions (Verdonschot, 2009).

1.6.2 Knowledge resides in relationships

In today's economy, knowledge is the most important production factor and driver for sustainable competitive advantage. There is increasing attention to the social perspective of knowledge (Garvey & Williamson, 2002; Gibbons, Limoges, Nowotny, Schwartzman, Scott & Trow, 1994; Huemer, Von Krogh & Roos, 1998; Venzin, Von Krogh & Roos, 1998). This change in perspective originates in the work of Polanyi (1958), who introduced the concept of tacit knowledge, drawing on different epistemological assumptions. In doing so, the viewpoint that knowledge is a commodity that is accessible for all individuals in the same way, is transferred to a more social perspective. Individuals create knowledge by a process of individualization and externalization within the relevant environment. The perspective of knowledge is shifting its meaning from a passive noun to an active verb: knowing. Knowledge in this light is fundamentally social, personal and context bound (Gibbons et al, 1994; Garvey & Williamson, 2002). In other words: knowledge is a social process of knowing (Huemer, Von Krogh & Roos, 1998). This perspective demands a different research approach when investigating knowledge development and knowledge sharing¹.

1.6.3 Learning by connecting

There is increased attention for the social dimension of learning when studying innovation adopting a collective, social perspective, inherently connected to a specific context (Brown & Duguid, 1991). Therefore, the assumption of this study is that learning should be studied within the social context in which it takes place. The common unit of observation in the field of HRD is the individual. And at the same time learning is regarded as a fundamental social process. This has led to a widening gap between theory and research: the relevance of understanding the functioning of social systems versus empirical research that explains individual behavior (Coleman, 1990). This study aims at closing this profound gap by studying social networks as the unit of analysis in order to examine learning processes that lead to knowledge productivity.

¹ Part of this theoretical exploration was presented in the refereed papers: De Jong, T. & Kessels, J.W.M. (2007). *Human Resource Development for social capital: an intricate process of knowing*. International Congress on Social Capital and Networks of Trust. Jyväskylä, Finland. And: Cornelissen, F., De Jong, T. & Kessels, J.W.M. (2009). *Views upon knowledge and its implications for studying knowledge processes and learning in organizational networks*. Paper presented at the 4th European Conference on Practice-based and Practitioner Research on learning and instruction. Trier, Germany.

1.7 Problem statement and research objective of this study

This study focuses on the relational characteristics of knowledge productivity; specifically to understand what role social capital plays in facilitating knowledge productivity. In order to improve the understanding of how social capital in networks facilitates knowledge productivity, an integrated theoretical lens needs to be developed. In addition, a supportive research design is required in order to study the relationship between social networks, social capital and knowledge productivity in practice. This will provide an academic basis for HRD practitioners who wish to improve the quality of social networks and enhance social capital in order to stimulate knowledge productivity. The following central question is addressed in this study:

How does social capital influence knowledge productivity in social networks?

In trying to answer the research question this study has the following objectives:

- To develop a theoretical framework to study characteristics of social capital in networks and their relation with social learning processes and knowledge productivity.
- To develop a research design to observe and analyze social networks and social capital that support knowledge productivity.
- To provide tools for practitioners to intervene and thereby improve the quality of social capital to facilitate social learning.

1.8 Relevance of the study

The following three paragraphs explore the scientific, practical and societal relevance of this study. Finally, the outline of this the research project will be described.

1.8.1 Scientific relevance

This research project aims to contribute to existing theory by better understanding how characteristics of social capital influence social learning processes that lead to knowledge productivity. The objective of this study is to explore the social context in which learning takes place, by including social capital theory. Exploring the relation between social capital and HRD is considered an important future task (Kessels & Poell, 2004). From the perspective of innovative learning and the role of social capital we can build on previous research that considered social networks as an important unit of analysis to understand innovation and learning (Cross, Parker & Sasson, 2005). The research aims to elaborate on these insights by developing a conceptual framework that offers insight into how the characteristics of social capital relate to knowledge-productive learning processes.

1.8.2 Practical relevance

Organizations in a knowledge economy should design work environments that promote knowledge productivity and invite all employees to participate (Verdonschot, 2009). A way of organizing innovation is to stimulate formal and informal networks that work on urgent work-related questions. This study aims to contribute to practice by providing HRD practitioners with a scientific basis for their interventions in order to facilitate and support knowledge productivity in networks. It becomes increasingly important for organizations to know more about factors that matter in learning environments intending to bring about innovation (Verdonschot, 2009). To realize this ambition, the research design follows a participative approach, in which organizational members are invited to participate as co-researchers. In this way, the project also aims to contribute directly to practice by including organizational members to participate in this research project.

1.8.3 Relevance for society

As will become apparent in this study, no one sets out to ‘build social capital’, however, individuals increasingly realize that to achieve sustainable objectives, it is important to exploit their social network. The benefits of knowledge-productive networks spill beyond the immediate organization and are useful in many ways. Society as a whole benefits from the social ties forged by those who choose connective strategies in pursuit of particular goals (Putnam & Feldstein, 2003). This study focuses specifically on these social connections and the outcomes of networks that affect communities and social life. Strikingly, the societal perspective is visible in almost all the cases that are studied in this research. Within our evolving social climate, it is necessary to develop answers to urgent societal questions. This requires social participation of public parties, private parties and even inhabitants not belonging to an organization. A connected society where members actively participate is built around aspects of social capital such as trust, generalized reciprocity, a sense of belonging and active participation within networks. The findings of this study aim to offer insight to develop this connected society.

2

Theoretical exploration: perspectives on social capital, learning and knowledge productivity

2.1 Introduction

This chapter explores relevant literature describing the interaction between knowledge productivity, learning and social capital theory^{1,2}. Given today's division of labor and the accompanying fragmentation and specialization, knowledge productivity is a fundamental means to achieving collective outcomes that maintain competitive advantage. Knowledge productivity is based on powerful learning processes. There is increasing evidence that learning is inherently a social and situated process that is strongly impacted by characteristics of social capital (Field, 2008; Van Der Sluis & De Jong, 2009). Social capital makes any cooperative group into more than a collection of individuals that only focus on achieving their own private purposes. Social capital connects the dots between people as it aims to understand productive relations. The main proposition of this chapter is that in a knowledge society, the competitive advantage of organizations depends on their ability to adapt to a changing environment through the continuous generation and application of new knowledge (Harrison & Kessels, 2004). Knowledge productivity focuses on these innovation processes. Knowledge productivity is the process of identifying, gathering and interpreting relevant information, using this information to develop new abilities, and applying these abilities to improve and radically innovate work processes, products and services (Kessels, 1995, 2001b). Knowledge productivity as a research concept brings together notions of innovation and learning (Verdonschot, 2009). For this reason, it is a helpful concept as it focuses on the process of learning that is strongly related to specific improvements and innovations of work processes, products and services.

This chapter is built up according to the following chain of reasoning. First the relevance of knowledge productivity is described as a theoretical starting point of this study. Based on these insights, the next paragraphs

¹ ² Part of this literature exploration was presented in two refereed papers: Van Der Sluis, L.E.C. & De Jong, T (2006) *Learning by connecting, Social capital as a learning landscape*. Paper presented at the Sixteenth International Sunbelt Social Network Conference, Canada, Vancouver. And: De Jong, T. (2007) *Social Networks, Social Capital and Knowledge Productivity*. Paper presented at the Seventeenth International Sunbelt Social Network Conference, Corfu, Greece.

theorize on innovation and knowledge productivity as a learning process. In these paragraphs, it is argued that learning is a social process and that in order to understand innovation and knowledge productivity, further theory on social networks and social capital is required. In addition to the structural component of social network theory, social capital theory deepens our understanding regarding the quality of social relations that enable cooperative action. The final paragraph summarizes the relevant theory described in this chapter.

2.2 The knowledge society

No century in human history has undergone so many social transformations and such radical ones as the twentieth century (Drucker, 2001). The transition to a knowledge society and a knowledge-based economy is among the most striking. This revolution is driving a shift in how value is created and perceived. Central to this perspective is the ability of organizations to create and utilize knowledge as the main resource for value creation. In our knowledge economy, the application of knowledge has replaced capital, raw materials, and labor as the primary means of production (Drucker, 1993). The main characteristic of this society is that knowledge constitutes the major component of every human activity. In a rapidly evolving economy, where knowledge is the main organizational currency, organizations must be able to learn fast, adapt regularly to new challenges, and ensure that workers can construct and share strategically valuable knowledge as well as acquire technical and interactive abilities, and continuously improve and innovate (Harrison & Kessels, 2004). This transition to a knowledge economy requires a reprogramming of the organizational environment, with a dominant role for the continuous development of employees. This transition is radically remodeling our resources from being solely capital and labor to the competences of employees and the knowledge they create and apply in their work. An important research framework that describes this development is the resource-based view of firms (Wernerveld, 1984). The fundamental principle of this view is that sustainable competitive advantage is primarily attained by using bundles of valuable resources at the firms' disposal (Wernerfeld, 1984).

2.2.1 Resource-based view

In existing literature, the resource-based view of the firm is treated as an alternative perspective to the traditional product-based or competitive advantage view predominant in the previous industrial era (Barney, 1991). The term 'resource' follows the economic description that it is valuable, rare, non-inimitable and non-substitutable (Amit & Galbreath, 2005). In particular, the resource-based perspective assumes that firms can be conceptualized as bundles of resources, and that those resources are heterogeneously distributed and persist over time (Amit & Schoemaker, 1993). Toward the end of the 1990s, the ambition to better understand mechanisms that lead to sustain-

nable competitive advantage focused on two theories. Firstly, the dynamic capability theory, which suggests that a firm's ability to continually learn, adapt and upgrade its abilities is key to competitive success (Teece, Pisano & Shuen, 1997). Other scholars proposed a knowledge-based theory (Kogut & Zander, 1992), suggesting that a firm's key role is to create, store and apply knowledge. The resource-based perspective has contributed significantly to understanding differences between firms, showing that how they perform is not so much determined by their industrial structure as by the resources they possess and the way managers build and exploit these. At the same time, the resource-base perspective is under serious debate (see for a detailed review: Priem & Butler, 2001). Three central flaws are worth to point out:

- The resource-based view aims to explore the dynamic perspective, emphasizing change over time. However, much of the subsequent literature describes the resource-based view as a static concept.
- The resource-based view treats the development of resources as a black box. It does not consider how resources lead to competitive advantage. Especially the process of obtaining and developing resources is vital for achieving sustainable competitive advantage.
- The resource-based view does not consider the possibility of cooperation with other entities to acquire resources in order to realize sustainable competitive advantage. Especially meaningful cooperation is an important enabler in today's perception of innovation (Verdonschot, 2009).

To achieve sustainable competitive advantage, a firm must have the ability to create and share knowledge. This ability depends on learning processes between individuals within and across organizations. Recently, corporate executives and academics have determined that processes of learning at different levels, such as the individual, group and organizational levels, are the key factor to achieving sustainable competitive advantage (Cohen & Prusak, 2001; Dyer & Nobeoka, 2000). Studying these learning processes will shed more light on understanding knowledge creation. Moreover, combining theories of learning and development with the resource-based view can include processes of cooperation between different organizations, teams or networks and is more dynamic in nature than the resource-based view by itself. Although academic literature generally aims to explain learning processes at the individual, group or organizational levels, there is increasing evidence to suggest that a network is a critical yet insufficiently understood unit of analysis in this field (Dyer & Kobeoka, 2000).

2.2.2 Knowledge productivity

A central flaw of the resource-based perspective is that it revolves around a black box that leads to an increase of resources that results in a sustainable competitive advantage. This black box can be seen as a learning process between relevant actors. In this perspective, the concept of knowledge productivity provides additional clarity.

‘Knowledge productivity is the process of identifying, gathering and interpreting relevant information, using this information to develop new abilities and then to apply these abilities to improve and radically innovate work processes, products and services’ (Kessels, 1995, 2001b).

Learning lies at the heart of knowledge productivity: tracing relevant information and developing and applying new competences rely on powerful learning processes (Keursten, Verdonschot, Kessels, & Kwakman, 2006). The assumption behind the notion of knowledge productivity is that in order to achieve sustainable competitive advantage an organization needs to continuously improve and from time to time radically innovate its work processes, products and services (Drucker, 1993). For this reason knowledge productivity is a helpful concept as it focuses on the process of innovation. Knowledge productivity is observable in concrete improvements and innovations. The concept of knowledge productivity can be explained in terms of two aspects: a learning process and visible improvements and radical innovation (see also Table 2.1).

Table 2.1	Knowledge productivity split into two areas
A learning process:	<ul style="list-style-type: none"> Identifying, gathering, exchanging and interpreting relevant information Using this information to develop new abilities Applying these abilities to improve and radically innovate
Improvement and radical innovation in:	<ul style="list-style-type: none"> Work processes Products Services

2.2.3 Learning as a social process

In the last decade, academic endeavor in the field of Human Resource Development (HRD) has concentrated on the social context to explain processes of individual learning, group learning and organizational development (Berings, 2006; Field, 2008; Harrison & Kessels, 2004; Poell, 2006; Wenger, McDermott, & Snyder, 2002). This has implications for our perspective on learning. It is no longer sufficient to explain learning as a rational, individual

process, mainly because this neglects the social environment that individuals are part of. In the context of this study, learning is seen as embedded in a social environment. Kessels (2001b, 2004) has formulated three principles to enhance and develop this social learning environment:

- 1 Enhance reciprocal appeal.
- 2 Search for passion.
- 3 Tempt towards knowledge productivity.

The first principle refers to creating a favorable social context, the second refers to the content component that lies at the heart of every innovation process, and the third principle indicates that managing or planning learning to innovate is hardly possible (Verdonschot, 2009). The principles designed by Kessels (2001b, 2004) indicate that passion, personal motivation and curiosity are important drivers for learning. These drivers are visible within social contexts. By incorporating this social perspective in HRD, the concept of social networks becomes increasingly significant. It has already become a major point of interest for economists, business researchers and other social scientists (Akçomak, 2009), and it offers worthwhile perspectives for understanding learning in a way that enables innovation (Kessels & Poell, 2004).

2.3 Social network theory

The volume of social network research in management studies has grown in recent years (Borgatti & Foster, 2003). The origins of social network theory began in the early 1930s in three distinct areas (psychology, anthropology and mathematics), with research activities revolving around socio-metric analysis, group structure and the flow of information within groups. Probably the biggest growth in organizational network research are studies on social capital (Gargiulo & Benassi, 2000). The next section discusses these effects based on the two seemingly different perspectives in social network theory: network closure versus structural hole theory.

2.3.1 Network closure versus structural hole theory

In the social network literature, a debate has risen whether advantages (for instance income or the level of education) within networks depend to the extent that networks are 'closed' or 'open'. Network closure refers to the presence of cohesive ties, promoting a normative environment that facilitates trust and cooperation between actors (Coleman, 1990). According to an alternative view, however, social structural advantages derive from brokerage opportunities created by an open social structure (Burt, 1997). In this perspective, the lack of closure created by dispersed ties is beneficial (Gargiulo & Benassi, 2000). From the start of social network research, there has been a fascination with ways in which the existence of ties between individuals defines both the structure of networks and the opportunity to build social capital. This has led directly to the current interest in structural holes theory (Kilduff

& Tsai, 2003). Structural holes are gaps in the social world across which there are no current connections, but that can be connected by ‘brokers’ who thereby control the flow of information across gaps (Burt, 1992). This perspective argues that networks with ties across organizations or teams are successful in capitalizing on their social network, for instance through realizing innovation or organizational development (Tsai & Ghoshal, 1998). On the other hand, cohesive ties between actors produce social norms that facilitate trust and cooperate exchange. Within a closely-knit network, individuals can trust each other to honor obligations, diminishing the uncertainty of their exchanges and enhancing their ability to cooperate in the pursuit of their interests (Gargiulo & Benassi, 2000). Evidence to support the positive effects of network cohesion comes from contexts in which the pursuit of individual goals requires the active cooperation of other players while it is uncertain whether such cooperation will be forthcoming. The same argument is made by Granovetter (1985), who stresses the positive effects of common third parties in facilitating trust between people and in diminishing the risk of opportunities that can affect cooperative relationships.

Both network closure and structural hole theory view reciprocity as the mechanism that turns relationships into assets. This also concurs when viewing cohesive relations as amplifiers of reciprocity (Gargiulo & Benassi, 2000). However, network closure and structural hole theory differ in their assessment of the effects of amplified reciprocity on social action. Closure theory views this amplifying effect as necessary to creating the normative environment and trust that foster cooperation. Structural hole theory views the same amplification of reciprocity as ‘structural arthritis’ that makes it harder to coordinate complex markets and organizational tasks (Gargiulo & Benassi, 2000). Although there is a clear overlap between network closure and structural hole theory, there are three issues worth mentioning:

- The ongoing debate on differences in perspective of the structural hole theory and closeness does not help create a coherent body of knowledge. For instance differences are made operational as ‘Burt rent’ (structural hole) and ‘Coleman rent’ (closure) (see for instance Kogut, 1998). This widens the gap instead of building an overarching theory.
- Structural hole theory is concerned with mapping social networks and offers a static description of social networks. In recent literature, the sense of urgency grows to broaden the purely structural definition of brokerage by also considering the qualitative content. Recent studies on social network theory focus more on the structural hole theory as a process between individuals instead of a static principle (Obstfeld, 2005).
- Closure is somewhat biased due to the nature of its definition. It assumes a moral agenda. The central argument of the criticism of closure is that more closeness is always better. More trust, more safety, and a greater sense of belonging serve as a mechanism that always works. Here, the negative aspects of social networks such as avoiding colleagues, financial fraud or free-ride theory are not taken into account (Portes, 1998).

2.3.2 Communities of practice

In the end of the 1990s consultants and business researchers quickly pick up the hidden power of networks as a way of organizing knowledge sharing and enabling organizational development (Cross & Parker, 2004). A forthcoming interest are communities of practices. The concept of communities of practices is first introduced by Lave & Wenger (1991) who attempted to explain and describe learning that occurs in apprenticeship situation. Most known development is the rise of communities of practices within the organizational context. Communities of practice are 'groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis' (Wenger, McDermott and Snyder, 2002 p. 4). Communities of practice are here for many centuries, and especially increased when we entered the industrial era. Professionals met each other do discuss related issues, problems or possible improvement in their work. Examples are corporations in ancient Rome and later in medieval times, specific guilds had an important business and community function. Generally speaking, a community adds something professionals cannot find in the formal structures of their organization. Communities of practices are especially supportive in organizational endeavors to organize knowledge sharing. Management activities aimed to stimulate knowledge sharing of their personnel often fail (Borgatti & Foster, 2003) and recent studies show that knowledge sharing is an emergent process strongly impacted by the level of social capital between actors (for a more detailed overview see: Huysman, 2006). The activities within a community of practice often focus around nurturing or sharing knowledge and stimulating innovation. The structure of a community of practice depends on the type of relationships, for instance experts from different organizations or professionals from within the same company. The next paragraph explores a typology of relations that are visible within communities of practices, seen from a social capital perspective.

2.3.3 Bonding, bridging and linking connections

The objective of this study is to clarify how characteristics of social capital in networks impact knowledge productivity. In doing so, the aim is to bridge the structural hole perspective and the closeness perspective into a combined perspective that supports understanding of learning as a social process within social networks. The perspective of social learning, argues that people adopt very particular abilities through their social connections. Such abilities are derived from practices of cooperation, whether formalized or through looser connections (Field, 2005). This association in groups, organizations and communities that enable learning are simultaneously the places where people experience the role of reciprocity and trust that shapes attitudes and behavior (Field, 2005). These social connections have value, as they enable learning, create communities and shape forms of trust and reciprocity. This value is described as social capital.

In the field of life-long learning, community development and HRD, several scholars have made helpful descriptions of social capital by focusing on a typology of different relations and ties between people (Woolcock 1999, 2001; Field, 2008; De Jong & Van Der Sluis, 2009):

- Bonding connections, which closely tie together people from a very similar background, such as family and close friends.
- Bridging connections, which bring together people from fairly similar backgrounds but more loosely, such as people with a shared interest.
- Linking connections, which bring together people from dissimilar backgrounds.

2.4 Social capital theory

The concept of social capital was originally used to describe relational resources, embedded in social ties, which lead to the development of individuals within communities (e.g. Jacobs, 1961; Loury, 1977). Several scholars have conceptualised social capital as a set of resources embedded in relationships (Burt, 1997), while others have adopted a broader definition of social capital, to include not only social relationships but also the norms and values associated with them (Coleman, 1990; Putnam, 2000). It is no longer up for debate whether involvement and participation in groups have positive effects for the individual or the community. On the other hand, it is still not clear why social capital has caught on the way it has and why an unusual amount of research activities is drawn towards it. The novelty and power of social capital comes from three sources (Portes, 1998):

- The concept focuses on the positive consequences of sociability while putting aside the less attractive features.
- It places those positive consequences in the framework of a broader discussion of capital and calls attention to how non-monetary forms of capital can be equally important.
- Social capital also engages the attention of policy-makers seeking less costly, non-economic solutions to social problems.

These three elements have unleashed an academic research wave in several disciplines. Due to the interest in social capital theory, it is impossible to summarize social capital into one definition. Within various academic fields, research focuses on different definitions. Scholars appoint social capital to the density of trust (Paldam & Svendsen, 2000), to norms, to values that facilitate cooperation within or among groups (OECD, 2001), or to brokerage opportunities in networks (Burt, 1997). Others base their definition on the property of communities focussing on goodwill, fellowship, sympathy, and social intercourse (Hanifan, 1920). The next paragraph presents an overview of principal theories associated with the contemporary usage of social capital and their different approaches. It is the objective of this section to elaborate on the academic background of social capital research. First, the term social capital is explored with reference to the two authors who first mentioned the concept:

Hanifan (1920) and Loury (1977). The section then elaborates on the research legacy of the three ‘founding fathers’ of social capital theory: Bourdieu (1985), Coleman (1990) and Putnam (2000).

2.4.1 Access to resources through social intercourse

The term ‘social capital’ was first used by Hanifan (1920), who represented it as a property of communities based on goodwill, fellowship, sympathy, and social intercourse (Hanifan, 1920). Hanifan describes social capital as a resource that could be utilized to improve community well-being (Smith, 2005). In the use of the phrase ‘social capital’, no reference is made to the usual meaning of the term ‘capital’, except in a figurative sense. Hanifan (1920, p. 130) refers to social capital as: ‘Those tangible substances that count for most in the daily lives of people: namely goodwill, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit. The individual is helpless socially, if left to himself. If he comes into contact with his neighbour, and they with other neighbors, there will be accumulation of social capital, which may immediately satisfy his social needs and which may bear a social potentiality sufficient to the substantial improvement of living conditions in the whole community. The community as a whole will benefit by the cooperation of all its parts, while the individual will find in his associations the advantages of the help, the sympathy, and the fellowship of his neighbors.’

2.4.2 Opportunities through social connections

Loury (1977) came up with the term social capital in the context of his critique of neoclassical theories of racial income inequality and their policy implications. Loury argued that orthodox economic theories were too individualistic, focusing exclusively on individual human capital and the creation of a level field for competition based on such skills (Portes, 1998). Equal opportunity programs would not reduce racial inequalities. This could go on forever, according to Loury, first of all because poverty of black parents would be transmitted to their children in the form of lower material resources and educational opportunities. And secondly that the social context within which individual maturation occurs strongly conditions what otherwise equally competent individuals can achieve. The work of Loury (1977) captured differential access to opportunities through social connections for minority youth, but there is no systematic treatment of its relations to other forms of capital (Portes, 1998).

The first systematic analysis of social capital was produced by Bourdieu (1985), who defined the concept as: ‘The aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition’ (Bourdieu, 1985, p. 248). The term ‘social capital’ appeared in community studies, highlighting the importance of networks of strong, cross-cutting personal relationships developed over time that provide the basis for trust, coopera-

tion, and collective action (Nahapiet & Ghoshal, 1998). As Bourdieu's work originally was published in French, his work did not receive widespread attention in the English speaking world (Portes, 1998). This lack of visibility is pityful because Bourdieu's analysis is arguably the most theoretically refined among those that introduced the term in sociological discourse (Portes, 1998). His treatment of the concept is instrumental, focusing on the benefits accruing to individuals by virtue of participation in groups and on the deliberate construction of sociability for the purpose of creating this resource (Portes, 1998). Also Bourdieu shows that social networks are not a natural given and must be constructed through investments. Bourdieu's definition makes clear that social capital is decomposable into two elements (Portes, 1998):

- The social relationship itself, that allows individuals to claim access to resources possessed by their associates.
- The amount and quality of those resources.

Loury's previous work (1977) paved the way for Coleman's more refined analysis of the same process, namely the role of social capital in the creation of human capital (1990). Coleman is an eminent American sociologist who had considerable influence on the study of education. In his initial analysis of social capital, Coleman mentions Loury's contribution as well as those of sociologists Lin and Granovetter (Coleman, 1990). Curiously, Coleman does not mention Bourdieu, although his analysis of the possible uses of social capital for the acquisition of educational credentials closely parallels the analysis pioneered by French sociology (Portes, 1998). Coleman defines social capital by its function: 'A variety of entities with two elements in common: They all consist of some aspect of social structures, and they facilitate certain action of actors within the structure' (Coleman, 1988, p. 98). This perspective emphasizes the way that social capital is created when the relations among persons change in ways that facilitate action. Coleman distinguishes between physical capital, human capital and social capital. Physical capital is wholly tangible, being embodied in the skills and knowledge acquired by an individual; human capital is less tangible, being embodied in the skills and knowledge acquired by an individual (Becker, 1964; Schultz, 1961). Social capital is even less tangible, for it is embodied in the relations among persons (Coleman, 1990).

Within the sociology debate, Coleman's definition was received with some criticism. It was thought to be too broad and vague. The rather vague definition opened the way for relabeling a number of different and even contradictory processes as social capital (Portes, 1998):

- The proliferation of social capital by including mechanisms that generated social capital such as reciprocity expectations and group enforcement of norms.
- The consequences of its possession such as privileged access to information.
- The appropriable social organization that provided the context for both sources and effects of social capital to materialize.

Resources obtained through social capital have, from the point of view of the recipient, the character of a gift. Thus, it is important to distinguish the resources themselves from the ability to obtain them by virtue of membership in different social structures. This distinction is explicit in the work of Bourdieu but obscured in that of Coleman. According to Portes (1998) a systematic treatment of social capital should distinguish between:

- The possessors of social capital (those making claims),
- The sources of social capital (those agreeing to these claims), and
- The resources themselves.

2.5 Development of the definition of social capital

As seen in the definitions of Bourdieu and Coleman, sociological analyses of social capital have been based on relationships between actors or between an individual actor and a group. The focus has been on the potential benefit accruing to actors because of their insertion into networks or broader structures (Portes, 1998). An interesting conceptual twist was introduced in 1995 in the professional field of political science, and it reached a far wider public than Loury, Bourdeu or Coleman. The appearance of the book *Bowling Alone* (Putnam, 2000) was treated as a significant news event. Putnam's first contribution to the debate on social capital came towards the end of a study of regional government in Italy (Putnam, 1993). Putnam concentrated on the relative performance of public actors. This study established a clear link between performance on the one hand and mutual interrelationships between government and civil society on the other (Field, 2008). Putnam used the concept of social capital to shed further light on the differences in civic engagement. He defined the term only after presenting a detailed discussion of the evidence of relative institutional performance and levels of civic engagement (Field, 2008). Putnam's definition of social capital is as follows: 'Social capital refers to features of social organization, such as trust, norms and networks, that can improve the efficiency of society by facilitating coordinated action' (Putnam, 1993, p. 167). Putnam's definition of social capital changed little over the 1990s (Field, 2008). In 1996 he stated that: 'By social capital I mean features of social life – networks, norms and trust – that enable participants to act together more effectively to pursue shared objectives' (Putnam, 1996, p. 66). A new element was the identification of 'participants' in particular rather than 'society' as the beneficiaries of social capital (Baron et al., 2000 in: Field, 2008). This formulation seems to mark a refinement of the earlier definition, in that it presents trust (together with reciprocity) as an essential element of the norms that arise from social networks, thus leaving us with two rather than three primary ingredients, namely networks and norms (Field, 2008).

2.5.1 Two main considerations within social capital theory

In the previous overview of academic literature, social capital is discussed in two related yet clearly distinct ways. The first consideration describes social

capital as a structural aspect of social relations. The second consideration describes social capital as a quality of social relations. Although the notion of social capital generally reflects ‘the ability of actors to secure benefits by virtue of membership in social networks or other social structures’ (Portes, 1998, p. 6), there is a clear difference in consideration. The aim of the next paragraph is to elaborate on these structural and relational considerations.

2.5.1.1 *Structural consideration of social capital*

Several scholars have conceptualized social capital as a set of social resources embedded in relationships (Burt, 1992; Lin, 2001). This structural viewpoint of social capital determines social interaction. The location of an actor’s contact in a social structure of interaction provides certain advantages for the actor. People can use their personal contacts to get jobs, to obtain information, or to access specific resources (Tsai & Ghoshal, 1998). This structural dimension is primarily associated with sociologists like Burt (1992; 1997), Lin (2001) and Portes (1998). They also have an individual perspective towards social capital. In other words, social capital is a private good that primarily benefits the individual who possesses it (Burt, 1997). They refer to resources, such as information, ideas and support, by stating that individuals are able to produce this by virtue of their relationships with other people. These resources are social, in that they are only accessible in and through these specific relationships, unlike physical or human capital, which are essentially the property of individuals (Grootaert, 2003). The structure of a given network has a major bearing on the flow of resources through that network. Those who occupy key strategic positions in the network can be said to have more social capital than their peers, precisely because their network position gives them heightened access to more and better resources (Burt, 2000).

2.5.1.2 *Relational consideration of social capital*

The relational consideration of social capital, in contrast, refers to assets that are rooted *in* these relationships, such as trust and trustworthiness. The relational dimension is more associated with Putnam (2000), who refers to the nature and extent of one’s involvement in various informal networks and formal civic organizations. The relational consideration sees the nature of the relationships in the social structure as leading to certain benefits for social actors, rather than just the structure itself (Kostova & Roth, 2003). Fukuyama suggests that social capital exists at multiple levels, since it can be embodied in the smallest group, the family and even in a nation (Fukuyama, 1995). From this relational perspective, social capital reflects the potential benefits for social actors which derive from the content of their social ties as indicated by the beliefs and attitudes that social actors hold and have toward each other (Kostova & Roth, 2003). These relationships are likely to lead to positive and cooperative behaviors, since they create a psychological environment conducive to collaboration and mutual support (e.g. Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). The added value of social capital lies in its focus on

Table 2.2	Social capital and their perspectives
Author	Perspective
Bourdieu (1985)	Social capital is an asset used by a specific groups in order to secure social positions
Coleman (1990)	Social capital serves as a resource for the relatively disadvantaged and acts as an asset belonging to individuals or families
Fukuyama (1995)	Social capital exists at multiple levels as it can be embodied in small groups, family and even nations
Putnam (2000)	Social capital is a resource that functions at the societal level

networks and relationships as resources. This is how social capital is also conceived by Bourdieu, Coleman and Putnam, but they each do so in different ways (Field, 2008). Table 2.2 gives an overview of the principal authors.

The different perspectives of Bourdieu (1985), Coleman (1990) and Putnam (2000) have led to some critical remarks. Firstly, Putnam stretches the concept towards a societal level, making it vulnerable to the accusation of functionalism. Secondly, for some writers, the very use of the term capital is inappropriate (Field, 2008). It suggests a false analogy between direct interpersonal relationships and economic exchange on the market, whereas interpersonal relationships and trust are by definition specific and contextual. A third topic of criticism is the definition of social capital and its impact on research. The authors have developed a somewhat undifferentiated concept of social capital. Their approaches may be seen as excessively homogenized in at least three ways (Field, 2008):

- They largely downplay the negative consequences of social capital. Coleman regards it as entirely benevolent, while Putnam acknowledges the downside and Bourdieu views it as negative only for the people who do not have it.
- The foundational approaches are somewhat ahistorical, accepting the development of social capital over time to some extent but neglecting the change of components and outcomes entirely.
- The four foundational definitions do not really distinguish between different types of social capital and different outcomes.

At this stage, a typology may be helpful, at least for heuristic purposes. Table 2.3 offers an assessment of the two different viewpoints of social network theory and forthcoming social capital definitions. As the distinction between the structural and relational consideration is a matter of perspective and analysis a ‘mixed model’ is adopted in this literature review. Adler & Kwon (2002) adopt this mixed view model by combining the structural and relational consideration to an extent that they are not mutually exclusive. Main argument

is that learning is influenced both by structural aspects (such as the structural composition of a network) and the relational consideration (such as the level of mutual trust and reciprocity). Understanding learning processes that lead to knowledge productivity are a function of both considerations. The mixed model can be described as a combined viewpoint, in which the structural element (embeddedness of actors in a network) and the opportunity and action element (access and use of relevant knowledge) are combined (Van Der Sluis & De Jong, 2009). Scholars that have adopted this mixed model as a basis for their definition of social capital are Nahapiet & Ghoshal (1998). They describe social capital by introducing three dimensions: a structural, relational and cognitive dimension (1998). Paragraph 2.6 explores these dimensions.

Table 2.3 Structural consideration versus the relational consideration of social capital		
	<i>Structural consideration</i>	<i>Relational consideration</i>
Social network perspective	Structural hole theory: network structure explains variation in learning and innovation. Metaphor of roads.	Network closure: social structures evoke common attitudes and behavior. Metaphor of traffic.
Social capital perspective	<p>'Social capital is the sum of the resources, actual or virtual that accrue to an individual or group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition' (Bourdieu, 1986, p. 248).</p> <p>'Social capital is a function of brokerage opportunities and draws on network concepts and also the structural autonomy created by complex networks' (Burt, 1997, p. 340).</p>	<p>'Social capital is defined by its function, it is not a single entity but a variety of different entities having two characteristics in common: they all consist of some aspects of a social structure, and they facilitate certain actions of individuals who are within the structure' (Coleman, 1988, p. 101).</p> <p>'Social capital means features of social organizations, such as networks, norms, and trust, that facilitate action and cooperation for mutual benefit. Working together is easier in community blessed with a substantial stock of social capital' (Putnam, 1993, p. 35).</p>

2.6 **Dimensions of social capital**

As seen in the previous paragraphs, there are many definitions of social capital, revolving around trust, norms of reciprocity and social connections. If one examines any number of articles on social capital it will soon become clear that different authors focus on either the individual or the community as the owners or possessors of the social capital they have identified (Inkeles, 2000). Although it is apparent that social capital should be separated from

its outcome, this is quite an endeavor based on the previous definitions of for instance Coleman (1988) and Bourdieu (1996). For this reason this study adopts the dimensions of Nahapiet and Ghoshal (1998): the structural, relational and cognitive dimension. These dimensions give meaning to both the relational and structural consideration of social capital and at the same time do not connect the outcomes of social capital to the description of social capital. Nahapiet & Ghoshal (1998, p. 243) define social capital as: 'The sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit.' In the next paragraphs the dimensions of social capital first mentioned by Nahapiet and Ghoshal (1998) are explored further.

2.6.1 The structural dimension of social capital

The structural dimension is the pattern of relations between actors in a social network. The structural dimension is based on the fundamental proposition that network ties provide access to resources (whom you know affects what you know). The network configuration of ties constitutes an important facet of social capital, meaning that the configuration of the network has an important impact on the accessibility of information and resources (Nahapiet & Ghoshal, 1998). The structural dimension of social capital describes ties and actors in a network. The social network perspective on learning argues that learning is affected by social access through infrastructures of relations and usage of these connections through interaction. In the field of life-long learning a typology of relations and ties provide a helpful description of social capital: bonding, bridging and linking connections.

2.6.2 The relational dimension of social capital

The relational dimension described the quality of a social structure. One of the most persistent barriers to transferring best practices within organizations is the existence of arduous relations between the source and recipient (Szulanski, 1996). When relationships are high in trust, people are more willing to engage in social exchange in general. This creates trustworthiness of individuals. Norms and sanctions represent a degree of consensus in the social system. Where a norm exists and has proven effective, it constitutes a powerful, though sometimes fragile form of social capital (Coleman, 1990). Furthermore, obligations and expectations fulfill an important facet in social capital. Obligations and expectations represent a commitment or duty to undertake some activity in the future. Obligations differ from generalized norms in that they are formed through generalized expectations within a particular relationship. The last item within the relational dimension is identity and identification. Identity and identification is the process whereby individuals see themselves as members of a specific social group (Forsyth, 1999).

2.6.3 The cognitive dimension of social capital

The cognitive dimension concerns the shared meaning and interpretation of network members. Knowledge and meaning are embedded in a social context; they are both created and sustained through ongoing relationships in such collectives (Nahapiet & Ghoshal, 1998). The cognitive dimension consists of shared language and codes (Kogut & Zander, 1996) and shared narratives (Putnam & Feldstein, 2003). The cognitive dimension of social capital represents shared meaning that acts as the social lubricant within networks. The cognitive dimension can be seen as a framework of specific words, phrases, codes and stories of network members.

2.7 Towards a first conceptual framework - version 1

The previous paragraphs of this chapter presented a chain of reasoning starting with the social transition of the twentieth century leading to the knowledge society we currently live in. In the knowledge society value within organizations is built upon the continuous creation and utilization of knowledge. This process has replaced capital, raw material, and labor as the primary means of production (Drucker, 1993). Based on this viewpoint the resource-based view in Paragraph 2.2.2 argues that the objective of organizations is to create and utilize knowledge in order to maintain competitive advantage (Barney, 1991). Learning lies at the heart of these knowledge productive processes (Harrison & Kessels, 2004). Paragraph 2.2.3 explores argumentation that learning is a social, situated process, taking place in specific social context. Social network theory provides relevant insight in understanding

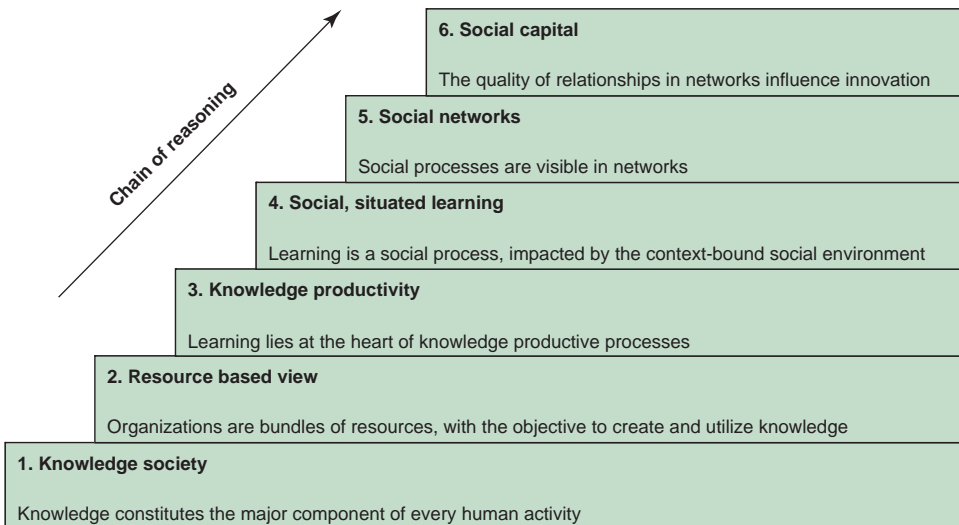


Figure 2.1

Chain of reasoning in the literature exploration

these social contexts as it studies impacts of specific social structures. Social networks are visible through connections between individuals who work together, share an interest, a concern or a passion about a topic and by doing so deepen their knowledge and expertise. Finally, the quality of relationships is explored in Paragraph 2.6 by adopting the work of Nahapiet & Ghoshal (1998) who describe social capital through a structural, relational and cognitive dimension. Figure 2.1 gives a visualization of the exploration of relevant literature.

Based on the previous overview of relevant literature on social capital theory, learning and knowledge productivity, Figure 2.2 proposes a first conceptual framework that explores how social capital within networks relates to knowledge productivity. In this study learning is described as a social, situated process and therefore should be studied within a social network. The structural dimension of social capital includes different type of social connections within a network. Bonding connections refer to relationships within the same team or department. Bridging connections refer to relationships between different teams or departments. Linking connections represent relationships between individuals of different organizations. Different type of connections can exist within a network.

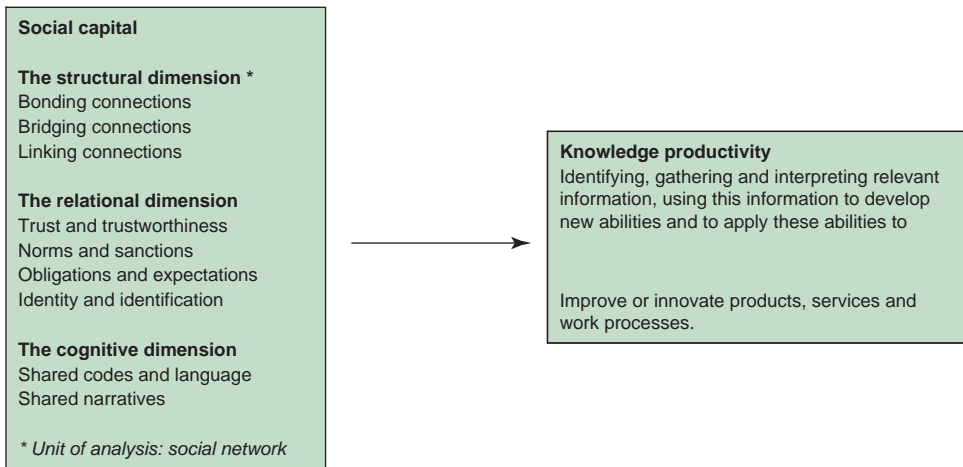


Figure 2.2
Conceptual framework to study social capital and knowledge productivity – Version 1

The objective of this study is to explore how characteristics of social capital impact knowledge productivity. Knowledge productivity is described as a learning process focusing on identifying, gathering and interpreting relevant information, using this information to develop new abilities and then to apply these abilities leading to improvements and innovation of work processes, products and services (Kessels, 1995, 2001b). Figure 2.2 is input for the exploratory case studies presented in Chapter 3.

3

Exploratory case studies: first steps in linking social capital to knowledge productivity

3.1 Introduction

Chapter 2 explores relevant theory on social capital, social networks, learning and knowledge productivity and results in a first framework of their possible interaction. The goal of this chapter is to explore in practice how characteristics of social capital relate to knowledge-productive learning processes in networks; and to subsequently determine in what way social relations support to these learning processes. This serves as input for the conceptual framework of this study in Chapter 4. Chapter 2 describes three theoretical perspectives that support this notion:

- 1 An economical perspective that emphasizes the competitive advantage of organizations by the output of innovation or knowledge productivity (Stam, 2008). Innovation is built around processes of collaboration and interaction (Chesbrough, 2006).
- 2 A social network perspective that focuses on the access to and usage of patterns of relations between individuals that enable social learning (Senge & Scharmer, 2006). This is a process built around networks of actors who create and share knowledge with each other.
- 3 A sociological perspective that elaborates on how structure of and access to social capital influence learning between individuals (Lin, 2001). This is a process determined by aspects such as trust, reciprocity, safety, and shared norms. These aspects show overlap with a supportive learning environment (Harrison & Kessels, 2004).

Studies on learning, organizational development and innovation are increasingly interested in the social dimension of learning. Herein, learning is no longer confined to R&D departments, but it stretches out to all members of the organizations who are willing to participate (Kanter, 2006; De Jong, Kessels & Verdonschot, 2008; Tsai & Ghoshal, 1998; Verdonschot, 2009). HRD research activities include different scientific backgrounds such as sociology, economics and psychology, to explore the perspective of learning as a social process, influenced by social capital within networks. This is visible in research activities in the domain of knowledge management that pay increased attention to social learning (Huysman, 2006). On the other hand,

insight into how specific characteristics of social capital in networks enable learning processes remains somewhat vague and is an important area of interest in HRD research (Harrison & Kessels, 2004; Kessels & Poell, 2004). It is the objective of this chapter to observe real-life settings in which different types of social networks within and across organizations are able to realize forms of knowledge productivity. By interpreting these observations, it is the ambition to determine how characteristics of social capital in networks relate to knowledge productivity.

3.2 Research objective of the exploratory case studies

Chapter 2 presented a first exploration of relevant literature. These insights lead to an initial conceptual framework of interrelating social capital, social learning and knowledge productivity in networks as depicted in Figure 2.2. The objective of this chapter is to see how characteristics of social capital within networks influence social learning that lead to knowledge productivity in real-life work situations. The exploratory case study activities aim to achieve three ambitions:

- To gain clarity of how characteristics of social capital within networks influence social learning that leads to knowledge productivity.
- To analyze these findings in order to develop a conceptual framework for how these theoretical concepts operate in practice (Chapter 4).
- Finally, to compare the findings of the case study to determine a suitable research design for the main research activities in this study (Chapter 5).

3.3 Building blocks of the conceptual framework

The literature exploration in Chapter 2 leads to a first conceptual framework explaining the relation between social capital and knowledge productivity (Figure 2.2). Table 3.1 presents the building blocks of the conceptual framework together with observable indicators.

Tabel 3.1	
Research variable	Observable indicator
1 Structural dimension of social capital	<ul style="list-style-type: none"> a Bonding, bridging, linking connections. b Accessibility and usage of information and knowledge within the network.
2 Relational dimension of social capital	The construction and maintenance of interaction norms within relations of the network. The extent of perceived trust and safety between the network participants.
3 Cognitive dimension of social capital	Shared language, codes and narratives of the network.
4 Personal learning objectives of the network participants	Exchange and clarity of personal learning objectives of network participants in the network
5 Personal motivation of the network participants	Exchange and clarity of personal motivation and passion between the network participants.
6 Learning that leads to knowledge-productive results	Learning processes that lead to improvement and radically innovating operating procedures, products and services.

3.4 Case selection and description

The first set of case studies focus on three intra-organizational networks. These networks consist mainly of bonding and bridging connections. The second two case studies focus on inter-organizational networks with mainly linking connections. The objective is to compare these findings and use them as a basis for the design of the conceptual framework to be presented in Chapter 4. The first three case studies focus on intra-organizational networks within the ROC Midden Nederland (ROCMN)¹. The research activities are carried out in a twelve-month period: from March 2005 until March 2006. ROCMN is one of the largest schools for vocational education in the Netherlands. It holds more than 27,000 students with 2,200 staff members across its 52 locations in the centre of the Netherlands. The second two case studies focus on inter-organizational construction projects on the A2 high-

¹ *The findings of this case study are published in the Dutch book, 'Verleiden tot leren in het werk' (Tempting to learn at the workplace). De Jong, T. & Rondeel, M. (2007) Ondernemend leren in leernetwerken, opbrengst van een onderzoek bij ROC Midden Nederland (Entrepreneurial learning in networks, results of a research at the ROC Midden Nederland). Bohn Stafleu en van Loghum, Houten, The Netherlands.*

way between Amsterdam and Utrecht². This project is facilitated by RISNET. RISNET supports risk management in road construction projects in the Netherlands. RISNET is part of CUR Bouw & Infra and the CROW knowledge network. The timeframe of this case study was four months: from September 2007 until December 2007. The next paragraph introduces the participating organizations and presents the background, research design, and findings of the case studies. Finally, the findings serve as input to reflect on the quality of the research design of the exploratory case studies.

3.5 Case study design

To answer the research questions in this exploratory case study phase, Figure 3.2 presents a framework to structure the research activities. The design is based on three components that support working towards the conclusion phase: a data collection protocol, a data reduction protocol and working towards displays of the findings (Miles & Huberman, 1994; Silverman, 2001). In the next paragraphs, these components are elaborated. First, the unit of analysis is presented.

3.5.1 Number of cases and the unit of analysis

The research activities focus on five networks, divided into two phases. The first three case studies focus on intra-organizational networks. The second case study phase focuses on two inter-organizational networks. Table 3.2 presents the number of participants in each network.

Table 3.2 Overview of the five case studies and number of participants	
Network	Participants
Intra-organizational network Case 1: ROCMN network Prevention of early dropouts	25
Intra-organizational network Case 2: ROCMN network Qualification structure of vocational education	20
Intra-organizational network Case 3: ROCMN network ICT and education	80
Inter-organizational network Case 4: RISNET network Design & construction of a tunnel installation	25
Inter-organizational network Case 5: RISNET network Combining the new train connection with the road construction	25

2 The findings of this case study are presented in a refereed paper: De Jong, T. (2008). *The role of social capital in inter-organizational collaboration. Empirical findings on trust in linking connections in inter-organizational road construction work. Paper for the XXVIII International Sunbelt Conference on Social Network Analysis. St. Pete Beach, Orlando, Florida.*

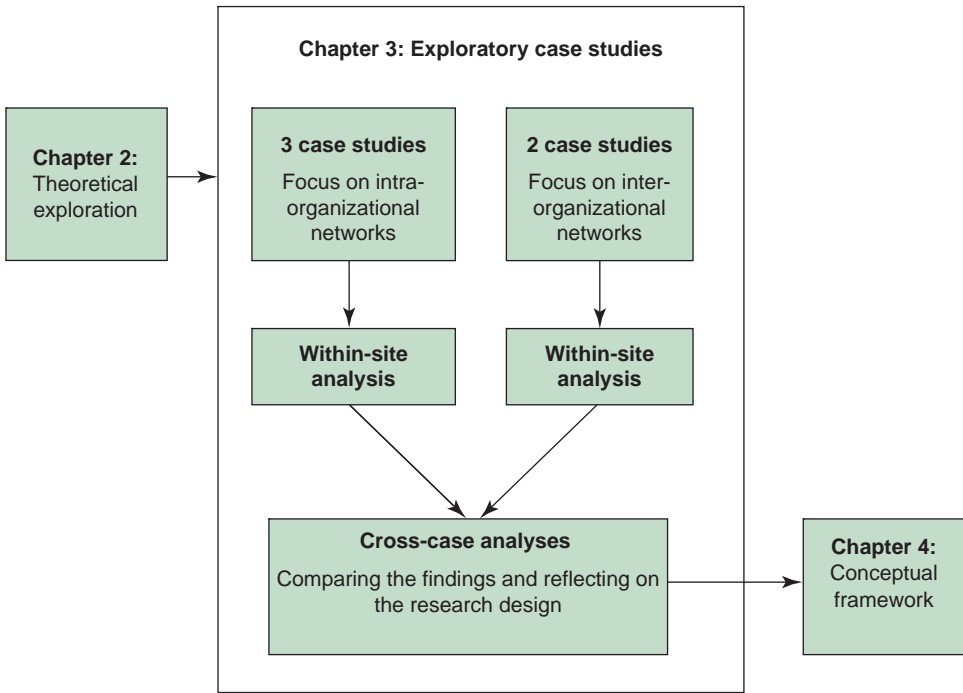


Figure 3.1
Structure of the research activities

3.5.2 Research activities

The data collection phase focuses on observing network activities, by interviewing participants and by organizing reflection meetings with network participants. The researcher works with records observations. In addition, a contact summary form is designed in order to hold on to field contacts, for instance with participants of a network. Thirdly, the researcher works with an interview guideline with specific questions regarding the progress and interaction of the network. The output of the data collection phase is sent back to participants in order to validate the findings. The data collection protocol of the exploratory case studies can be found in Appendix A.

The focus of the research activities is to observe activities and interaction patterns between participants of the networks. Moreover, several reflection meetings are organized in which participants exchange experiences and perceptions about the activities in the network. During the meetings the participants of the networks check the findings and discuss emerging patterns. The meetings serve as a way of validating the findings. Each network appointed a facilitator, a network participant who held ownership of the process and activities. The facilitators are interviewed regularly. To capture the social environment of the organization managers and colleagues of network participants of the ROCMN and RISNET are interviewed to reflect on the findings

of the study. The structure of the research activities is presented in Figure 3.1, while Table 3.3 gives an overview of research activities for each case study.

Table 3.3 Overview of the research activities of the explorative case studies

Focus of the research

3 intra-organizational networks within the ROCMN
2 inter-organizational networks facilitated by RISNET

Research activities in the 3 ROCMN networks

- 15 observations of network meetings
- 9 interviews with facilitators of the networks
- 20 interviews with participants of networks
- 8 interviews with colleagues of network participants
- 34 field notes based on encounters with participants
- 8 reflection meetings with facilitators of networks

Research activities in the 2 RISNET networks

- 5 observations of network meetings
- 4 interviews with facilitators of the network
- 5 interviews with colleagues of network participants
- 10 interviews with participants of the networks
- 12 field notes based on encounters with participants
- 2 reflection meetings with participants of networks

Additional information about the research activities is described in Appendix A

3.5.3 Data displays

The objective is to reduce the vast amount of data of the five case studies by creating displays of the within-site analyses. The within-site analyses provide material for comparison in cross-site analyses. Composing within-site displays results in considerable data reduction. Chapter 3 does not include the original database per case study. The complete case study database includes transcripts of interviews, invitations to network meetings, descriptions of network meetings, reflection documents and the final within-case study report as presented and validated by the network. The full database is stored in the researcher's archive and can be inspected. The data reduction described in the case displays is realized by ranking the main variables of the study. In the third column of the within-site display the symbols o, +, ++, +++ and ++++ appear. They indicate the visibility of the variable (o indicates absence, and ++++ indicates very strongly represented). The symbols were placed in conjunction with the text enabling outside observers to judge the consistency of the researcher's interpretations.

3.6 The selected cases

The data displays of the networks serve as a framework for the within-site analysis of the exploratory case study phase. The findings form the basis for a cross-case analysis. In the final paragraph of this chapter, the central research questions of the exploratory phase are answered.

3.6.1 ROC Midden Nederland (ROCMN)

The first three networks in which the theoretical concepts are further explored are part of the ROC Midden Nederland. In 2006, the ROCMN adopted a new vision to enhance student ownership and entrepreneurship for lifelong learning. Instead of purely offering a traditional curriculum, the student is able to create his own learning trajectory. This vision enabled a new perspective on educational innovation: the school, participating institutions in the work field and students are partners in a collective learning process. ROC MN designed specific principles underpinning a new way of looking at learning:

- Learning starts with a practical challenge.
- Learning is a conscious process.
- Learning means reflection.
- Learning means becoming self-directive.
- Learning is a social process, built around interaction.

Emphasizing the nature of learning as a relational process between people, ROCMN adopted the perspective of social, situated learning. Knowledge and learning in this perspective are dynamic and collective processes unfolding in a social context where people act and interact with each other. That is why it is important that students develop the competences to create and maintain social networks for effective learning. ROCMN perceives the teaching staff as role models and guides for students in this innovative process. Therefore, the designed learning principles also apply to teachers. The principles are starting points for teachers to design their own learning environment. As the main objective of ROCMN is to promote and facilitate students interacting in the social learning process, the internal organization should also facilitate teachers in this type of learning. The ambition of the ROCMN is to create learning networks, in which professional development and innovation can take place.

3.6.1.1 *Reasons to select the three ROCMN networks*

The organizational dynamics of ROCMN revolve around a change ambition to become a networked-learning organization. In doing so, the ROCMN stimulates the professional development of its staff in communities of practice (or networks). It is the objective to create valuable knowledge within these communities of practice that can be useful to renew and develop the organization. For instance, by means of answering urgent organizational questions: How can we decrease the number of dropouts? Or: In what way can we deve-

lop competence-based examination criteria? The ROCMN has the ambition to learn more about the organizational context that supports these learning processes. Within the ROCMN, several initiators mention the desire to create a professional context that is built around trust, safety and meaningful cooperation with students and the work field.

3.6.2 RISNET

RISNET is a knowledge network for risk management in construction projects in the Netherlands. The case study concerns an inter-organizational collaboration for a large road construction project between Amsterdam and Utrecht. RISNET supported the risk management process in this project and especially the communication between the partners in the construction phase of this project. The road construction is a highly prestigious and complex project. The cooperating parties are challenged by many complex difficulties, such as working very close to densely populated areas; combining railroad and highway construction. The main objective is to prevent a decrease in the flow of traffic during the project period. The project is highly innovative in nature: several contractors collaborate on the large road construction project, and during the construction period, the deadline was shortened to two years.

3.6.2.1 *Reasons to select the two RISNET networks*

The two RISNET networks are relevant to adopt as a case study in the exploratory phase because the project is intra-organizational in nature with dominantly linking connections. There are several professionals that have taken up the task to share their insight on the role of communication in construction projects. RISNET goal is to support construction projects in positive communication processes in which interaction and learning from each other is crucial. In addition, the nature of the project ensures encounters with highly innovative questions, such as the quality of the soil and working around already existing infrastructure.

3.7 Case study findings

3.7.1 Case 1: ROCMN network Prevention of early dropouts

This learning network was founded in 2006. There are 25 participants who participate in the network, who originate from different departments. After two meetings, external parties are invited. The objective of the network is to find new approaches to decrease the number of early dropout students in Utrecht. See table 3.4.

Table 3-4 Findings of the ROCMN network Prevention of early dropouts (25 participants)		
Research variable	Observable indicator	Rating
1 Structural dimension of social capital	a Participants came from different departments. After several meetings, experts and or other external professionals are invited.	Bo, Br, L
	b The network is successful in locating and internalizing organizational information and knowledge. The initiator of the network has a strong internal network and previously worked at several different positions in the ROCMN. She is successful in locating and inviting people that can make necessary (hierarchical) decisions.	+++
2 Relational dimension of social capital	Norms of interactions are strongly determined by the initiator of the network. Participants did not know each other beforehand, and the risk is that the meetings end up in endless discussion. The facilitator intervenes frequently on the process of interaction (summarizing, asking questions, writing on the blackboard). The meetings are very content-driven which sometimes led to lively and long discussions.	++
3 Cognitive dimension of social capital	Participants use the same vocabulary and examples during the network meetings. Participants are very familiar with educational phrases and codes.	++++
4 Personal learning objectives of the network participants	Personal learning objectives are not exchanged in the network meetings, participants do share their worries and problems concerning the topic in the network.	O
5 Personal motivation of the network participants	Network participants are motivated to participate. Some of the participants are active outside school activities or organize meetings with parents and students in the evenings or on weekends	++++
6 Learning that leads to knowledge-productive results	A policy document is designed to present to the board of directors. The ROCMN is co-founder of a new dropout school to prevent children from dropping out. Several new initiatives of departments are linked to STAP (a sub-organization in the ROCMN, which assists children who have a higher risk in quitting school.	++++

3.7.2 Case 2: ROCMN network Qualification structure of vocational education

The participants in this learning network take part in different experiments of ROCMN. There are 20 participants who participate in the network, who originate from different departments. These experiments are initiated to explore and determine specific competence-based qualification structures. The goal of the network is to share experiences and knowledge on the implementation of this qualification structure in different departments. The number of participants grows rapidly due to the increase of experiments at ROCMN. After five meetings, the network activities slow down, and finally the network meetings stop. See table 3.5.

3.7.3 Case 3: ROCMN network ICT and education

This is a network that at the start of the case study already existed for five years. Participants work at various departments and disciplines, some in different organizations. They have a strong interest in using technology for educational purposes. In the learning network, there is a core enrolment of about twenty participants and some eighty participants in the periphery who come and go. Participants are teachers, policy makers and IT programmers. See table 3.6.

3.7.4 Case 4: RISNET network Design and construction of a tunnel installation

Participants in this project group designed the project plan for the construction of a tunnel that is a sub-part of the road between Amsterdam and Utrecht. Four construction partners worked on this project, together with a state agency counterpart (Rijkswaterstaat). The focus of the research is the network of managers who frequently encounter to discuss the progress and process of the project. The names of the organizations and participants have been made anonymous. See table 3.7.

3.7.5 Case 5: RISNET network Combining the new train connection with the road construction

The background of this network is the design to establish a new train connection between Utrecht and Den Haag that crosses over the expansion of the road between Amsterdam and Utrecht. The goal of this project is to intertwine these two objectives without causing delay. Four construction partners are a part of this project, together with a state agency counterpart. The research activities focus on the project managers of the different organizations and their direct colleagues. The names of the organizations and participants have been made anonymous. See table 3.8.

Table 3.5 Findings of the ROCMN network Qualification structure of vocational education (20 participants)		Rating
Research variable	Observable indicator	
1 Structural dimension of social capital	a Participants came from the same department (policy makers) and some from other teams or locations.	Bo, Br
	b The network is successful in locating and internalizing relevant information. They consider themselves unsuccessful in the ambition to work together with other departments, students and professional partners.	++
2 Relational dimension of social capital	The network participants feel comfortable in sharing difficulties or problems in their own experiments. On the other hand, expectations between participants differ, leading to varied perspectives and ambitions of the network.	++
3 Cognitive dimension of social capital	Participants use the same vocabulary and examples during the network meetings. Participants are very familiar with qualification abbreviations and specific phrases and sentences.	++++
4 Personal learning objectives of the network participants	Exchange of personal learning motivation and urgency to participate is made explicit at the start of the network. Participants share their motives to participate and write it down on a mind map. The invitation by e-mail includes a specific question to think about why a student would like to participate.	++++
5 Personal motivation of the network participants	The initiator has a strong driver to set up the network, he is also project manager and responsible for a planned outcome. Participants show exploratory motives and interest to participate. After five network meetings, the number of participants drops significantly.	++
6 Learning that leads to knowledge-productive results	New information concerning the experiment was located and shared, and participants reflected on their personal practices. Goal of the network was to exchange practices and discuss related problems or challenges. There are no signs that this leads to concrete changes in work practices.	+

Table 3.6 Findings of the ROCMN network ICT & education (80 participants)

<i>Research variable</i>	<i>Observable indicator</i>	<i>Rating</i>
1 Structural dimension of social capital	<p>a Network participants came from different support staff in the ROCMN. They actively invite guests or experts for workshops or meetings.</p> <p>b The network has a strong ability to find resources in the organization to support the network (finances for inviting an expert, attractive location, lunch, etc.). Network participants come from different departments and are part of many educational projects in which they use the input of the network and vice versa.</p>	Bo, Br, L ++++
2 Relational dimension of social capital	Network participants show a strong identification with the network. Participants share valuable personal knowledge and insight during the network meetings. Participants mention they share the same expectations about the objective of the network work.	++++
3 Cognitive dimension of social capital	Participants use the same vocabulary and examples during the network meetings. Participants call themselves 'webbies' or 'nerds' and mention that ICT is a hobby for them, not work.	++++
4 Personal learning objectives	Network participants do not discuss learning objectives, but focus on work-related issues and challenges. Participants share very concrete issues or problems that they are facing in their work. For instance, how to work with a new version of blackboard. They mention having a resistance in using words like learning or development: 'it's about work'.	O
5 Personal motivation of the network participants	Participants call themselves 'experts' or 'nerds' and feel a high passion for looking for ICT perspectives in education	++++
6 Learning that leads to knowledge-productive results	Network meetings focus around work-related issues. In the meetings, numerous issues are discussed and possible solutions are presented or exchanged. The network participants are very active in making their insights visible. For instance, by making posters, podcasts, or facilitating ICT workshops.	++++

Table 3-7 Findings of the RISNET network Design and construction of a tunnel installation (25 participants)		Rating
Research variable	Observable indicator	
1 Structural dimension of social capital	<p>a Network participants come from different construction companies from the Benelux.</p> <p>b Participants experience difficulty in making work-related decisions sustainable. Possible solutions that are explored during meetings were difficult to realize because the colleagues with formal mandate were not always present during the network meetings.</p>	L +
2 Relational dimension of social capital	Network participants express a shared urgency to work on communication skills. On the other hand, they experience difficulty in realizing results this due to obligations to the project teams of their own organization.	++
3 Cognitive dimension of social capital	Network participants already knew each other from working together on previous construction projects and use the same words, sentences and codes.	++++
4 Personal learning objectives of the network participants	Participants do not exchange personal learning objectives. Construction work is very content-driven, and network participants mention that they did not feel comfortable in exchanging learning objectives.	O
5 Personal motivation of network participants	On average, network participants work for more than 15 years in road construction. They are loyal to their company; they have stickers of their companies on their cars or wear shirts with the company name.	++++
6 Learning that leads to knowledge-productive results	Due to the input of a facilitator, focus on existing interaction patterns is established. This leads to several new initiatives in construction meetings; e.g. frequently summarizing decisions and checking if other parties agreed. Also, the participants work with a standard set of questions during a meeting that helps them stimulate an appreciative process.	+++

Table 3.8 Findings of the RISNET network Combination of the new train connection with the road construction (25 participants)		Rating
Research variable	Observable indicator	
1 Structural dimension of social capital	a Network participants come from different construction companies from the Benelux.	L
	b Participants experience difficulty in making work-related decisions sustainable. Possible solutions to the network on risk sharing could not be made sustainable because the colleagues with the necessary mandates were not always present.	+
2 Relational dimension of social capital	Participants share a sense of urgency to word towards improvements in interaction. At the same time, strong personal norms made it difficult to break through existing barriers. Participants complain about the way the project is fit into a design concerning sharing of risks. It seems that the risk perspective of the state agency is dominantly present, and the risk perspective of the contractor participants is missing.	++
3 Cognitive dimension of social capital	Participants already know each other and use the same words, sentences and codes.	++++
4 Personal learning objectives of network participants	Participants in the project do not exchange personal learning objectives. Network participants mention that they did not feel comfortable exchanging learning objectives.	O
5 Personal motivation of network participants	All network participants worked for more than 15 years in road construction. They work in shifts, at night, on weekends and visit other construction sites to learn new techniques.	++++
6 Learning that leads to knowledge-productive results	Operating procedures in meetings are changed in order to give more room to reflect on collaboration and interaction. Several managers decided to follow a professional training course in order to learn more about the role of communication in construction projects.	+++

3.8 Cross-case analysis

The findings of the five case studies can be put into one summarizing display depicted in Table 3.9. This display is the basis for the cross-case analysis that serves as input for the main conclusions of the exploratory case study phase. The theoretical exploration in Chapter 2 serves as input for this section. Based on these findings the final paragraph reflects on the research design. These findings serve as an input to answer the research questions of this chapter and to provide input for the conceptual framework in Chapter 4.

Research variables	ROCMN			RISNET	
	Case 1	Case 2	Case 3	Case 4	Case 5
	Bo, Br, L	Bo, Br	Bo, Br, L	L	L
1 Structural dimension of social capital	+++	++	++++	+	+
2 Relational dimension of social capital	++	++	++++	++	++
3 Cognitive dimension of social capital	++++	++++	++++	++++	++++
4 Personal learning objectives of network participants	O	++++	O	O	O
5 Personal motivation of the network participants	++++	++	++++	++++	++++
6 Learning that leads to knowledge-productive results	++++	+	++++	+++	+++

3.8.1 The structural dimension of social capital

The structural dimension of social capital can be described as bringing together people from different disciplines, areas and expertise within and outside of the organization. It appears to stimulate unusual combination of subject matter expertise that stimulates learning processes that lead to knowledge productivity (Verdonschot, 2009). Linking connections appear to be similar to weak ties within the relevant social network. Weak ties are a theoretical perspective explaining the transmission of important information in a network (Granovetter, 1985). The presence of linking connections in the case study networks is associated with forms of knowledge productivity. This is visible in Network 1, 3, 4 and 5. The absence of linking connections is associated with lower knowledge-productive results (Network 2). Participants in the ROCMN cases mention that linking connections, for instance students, bring

in new perspectives that are otherwise overlooked. In this respect, linking connections and realizing knowledge productivity are closely related in the exploratory case study of the five networks.

3.8.2 The relational dimension of social capital

Based on the case study findings it is difficult to abstract a general pattern on the relational dimension of social capital. Network 1, 3, 4 and 5 are rated average and only Network 2 is rated as high. This suggests additional research to explore the concepts within this dimension.

3.8.3 The cognitive dimension of social capital

The cognitive dimension of social capital appears strongly developed in all the networks of the exploratory case study (Network 1, 2, 3, 4 and 5). Mainly aspects such as a shared language, specific stories and the awareness of certain codes and or agreements are dominant. Due to this high rating across the five cases, it is necessary to reinvestigate the cognitive dimension that are explored in the exploratory case studies and to decide if the chosen concepts are useful or can be made more explicit in a suitable research design for the next phase of this study.

3.8.4 Personal learning objectives of network participants

Individual learning objectives by network participants is rated low (four of the five networks show a rating absent). Moreover, the network that did pay attention to the awareness of individual learning objectives (Network 2) does not show more signs of knowledge productivity. This support the perspective that innovation is a developmental process in which participants encounter novel situations for which no knowledge is available from previous experience (Verdonschot, 2009). In this light, learning objectives that are described a forehand are difficult to combine with encounters of unclear, puzzling problems.

3.8.5 Personal motivation of the network participants

It appears that networks that frequently explore personal motivation of the network participants are successful in realizing knowledge-productive results (Network 1, 3, 4, 5). Network 2 paid less attention to personal motivation and passion and also experienced having difficulty in maintaining the number of network participants. It seems that personal motivation to participate in a network can be seen as closely related to passion for a specific topic or subject matter (Kessels, 2001b, 2004). Especially in networks, were formal structure to participate is lacking; passion and motivation can be seen as a crucial ingredient to achieve knowledge-productive results.

3.8.6 Knowledge productivity

Four of the five networks that are studied in this exploratory case study are successful in achieving knowledge-productive results in terms of improvements or radical innovation in work processes, products or services (Network 1, 3, 4 and 5). Besides network activities that focus on identifying, gathering, exchanging and interpreting relevant information it is not quite clear what type of learning processes result in specific forms of knowledge productivity based on this exploratory case study research. Therefore, it is useful to explore these learning processes more and find a suitable theoretical background to better understand and identify learning processes that occur in networks structures.

3.8.7 Unexpected findings in the single case studies

Besides the analysis of the networks based on an initial exploratory literature review in Chapter 2, the five case studies also provide room to identify unexpected results. These unexpected results are useful for the design of the conceptual framework presented in Chapter 4, and to subsequently design a research design that is suitable to study the relation between social capital in networks and knowledge productivity in real-life settings. For this reason, two reflection meetings were organized for all the participants of the networks. In this meeting, the central findings are presented, and participants interacted with each other to identify additional factors. These factors are presented in the next paragraphs.

3.8.7.1 *Environmental factors*

Besides personal motivation to participate in a specific network, two reflection meetings resulted in six supportive factors that stimulate knowledge productivity in networks:

- 1 Ensure a sustainable connection with the day-to-day work.
- 2 Increase the visibility of the networks within the organization and actively communicate results.
- 3 Foster formal and informal appreciation.
- 4 Promote active process facilitation of meetings.
- 5 Facilitate a congruent vision upon learning within the organization.
- 6 Stimulate the active support and participation of management.

The environmental factors that are mentioned in the reflection meetings are closely related to business research that studies social network activities and knowledge creation. For instance, factor 1 is closely related to the insight of Cross & Parker (2004) that participants need to experience that they can make a meaningful contribution in the actual work processes. Also, the active support and participation of management is seen as a bottleneck for enabling networked learning (Cross & Parker, 2004). This is supported by the case study findings. An active process facilitation of meetings is also recognized

by Wenger, McDermott & Snyder (2002) and mentioned as community coordination.

3.8.7.2 *Sharing knowledge outside the network*

Networks that do not have bridging or linking connections create knowledge that often is not absorbed by other organizational parties such as relevant colleagues, teams or managers. This suggests that bridging and linking connections are important to share relevant knowledge within the organization. Sharing knowledge outside the network is also recognized as a crucial ingredient in previous research. For instance between different social clusters (Burt, 2005) or other organizations (Borgatti & Foster, 2003).

3.8.7.3 *Defining knowledge productivity in networks*

Participants of the networks mention that they experience difficulty in making knowledge productivity operational. Network participants experience difficulty in describing a radical change in operating procedures. In addition, knowledge productivity in terms of radical changes in operating procedures, products and services can take some time before they are clearly developed and implemented. Learning with the intention of innovating is closely related to the concept of knowledge productivity (Kessels, 1995, 2001b). This also suggests further exploring the concept of learning and making it operational in such a way that participants are comfortable with it. Question that remains unanswered is: what kind of learning in networks results to innovation?

3.9 **Reflection on the research design**

Based on the expected and unexpected findings of the five case studies, several reflections on the research process are described in the following section. It is the objective to use this as input for the development of a revised conceptual framework in Chapter 4 and for the research design in Chapter 5.

3.9.1 *Network dynamics*

Close observation in the actual work practice of professionals reveals many network dynamics that are difficult to make explicit in interviews or group discussions. The field notes (see Appendix A) offered very useful insight. In addition, social capital is described as an active resource, multidimensional in nature (Grootaert, 1998) facilitating action between individuals. The suggestion is to design a research approach that ensures that network dynamics and their effects on learning are observed close to the work practice of network participants, and support these findings with interviews, questionnaires and group reflection within the network.

3.9.2 Network initiators as stewards and the role of an urgent question

The initiators of the network act as stewards of the five networks. They organize the meetings, facilitate the meetings and are often the first initiator of bringing together relevant participants. The initiators reflect that this is very valuable for their professional development. They have obtained new proficiencies and capabilities to facilitate and support the development of a network. For instance, several facilitators of networks started a training course to facilitate large groups meetings. Also, some of the participants are invited to give advice to the board of directors of the ROCMN in working towards a network organization. The suggestion is to design a method that establishes a direct link with the facilitators of networks. It is possible to subsequently follow these facilitators over a period of time. In addition, it seems that the initiator is often the first member who recognize an urgent question. The urgent question can offer a helpful demarcation of the network objective. It enables to study a specific question with a sense of direction to solve the problem. This reflection is useful to adopt in the research design and revised conceptual framework.

3.9.3 Network level as the unit of analysis

Dissemination of the created knowledge from the network into the relevant organization is difficult to observe. In addition, it makes the research focus broad, as it needs additional research activities to indicate the level of knowledge dissemination. The reflection on this exploratory phase is to keep the unit of analysis strictly on the network level. For instance, network participants see the organization as a (learning) context that facilitates or inhibits the success of the network. The flow of knowledge into the organization is not always relevant to network participants. Oftentimes, the dissemination of the created knowledge of the network is an ambition of outside observers such as management. Our suggestion is to create a research design that focuses on the dynamics of networks and the knowledge that is created in the network. The extent to which the network is successful in changing its work processes, services or products is a reliable indicator of the success of the network to be knowledge-productive. The extent to which these changes adopted by the larger organizational context can be studied by interviewing bystanders and relevant external parties around the network.

3.9.4 Understanding knowledge productivity in practice

Knowledge productivity is difficult to make operational, especially when participants talk 'about' knowledge productivity, learning or innovation. For instance, several initiatives within networks led to knowledge-productive results. Still, network participants could not see this as a gradual improvement, or a general form of knowledge productivity in terms of the research framework that was presented to them. The suggestion is to design a research design that focuses on specific work-related problems that are urgent to the

organization and that can provide better insight into the relation between the network activities and knowledge productive results.

3.9.5 Reflection on the network level

Participants in the first case study mention that reflecting on collaboration and the dynamics in the network in which they participate is very helpful for their daily work. It creates a learning space to exchange ideas, reflection on previous encounters and share specific urgencies. For example, the participants of the cases 4 en 5 decided to repeat the process of interviewing each other frequently and getting together to exchange their ideas or feelings about the project. The suggestion is to design a method that includes activities that focus on reflection within the network as a specific research step in the research design.

4

Conceptual framework: rethinking the link

4.1 Introduction

The five case studies presented in Chapter 3 serve as input to explore the relationship between learning processes in networks and to determine how specific characteristics of social capital support knowledge productivity. The conclusions of the cross-case analysis and the reflection on the selected method are useful input for the design of the conceptual framework in this chapter. The following sections present the findings that serve as input for the design of the conceptual framework. This is done by reflecting on the main research variables of this study: social learning processes, knowledge productivity, social capital and network as unit of analysis. The chapter concludes with the refined research objectives, a revised conceptual framework and a set of research questions.

4.2 Input for the conceptual framework based on the exploratory case study

The following paragraphs present the main conclusions of the exploratory case study. These conclusions serve as input for the conceptual framework and are used as building blocks in Paragraph 4.3.

4.2.1 The role of the initiator

The findings of Chapter 3 reveal that learning in networks is strongly determined by personal motivation of its members. This suggests that the conceptual framework should focus on making personal motivation and passion of network members explicit and relate them to specific learning processes in the network. The initiator of the networks experience strong professional development due to the active role as a facilitator he or she plays in organizing and facilitating network activities. In addition, due to this active role, the initiator is able to strongly observe inhibiting and stimulating factors within the network. For this reason it is worthwhile to include the initiators as co-researchers in this study. This participative approach is very useful to

study the practical development of networks. The general orientation of participative research is to develop general knowledge of a social system that is continuously learning from experiences and creating condition that support and foster learning (Chisholm, 2006). Participative research is a form of action research (Reason & Bradbury, 2006). Action research in general aims at solving practical problems and attempts to contribute to general knowledge about social systems and the dynamics of changing them. This research perspective strongly connects with the exploratory nature of this study.

4.2.2 The structural, relational and cognitive dimension of social capital

It appears that networks that have a structure that include linking connections are more successful in realizing knowledge productivity than networks that lack this structural dimension. This finding suggests the need to focus on studying networks that have the possibility to invite external parties and in that way include bonding, bridging and linking connections in the network.

Networks create a specific learning environment that can support or inhibit knowledge productivity. The relational dimension of social capital shows overlap with creating and maintaining a supportive learning environment within networks. Specifically, aspects such as safety, trust and supportive norms are important aspects for network members to actively participate. It is relevant to study how members create and sustain aspects of the relational dimension.

The cognitive dimension of social capital is visible in all the five case studies in the exploratory case study. The design of the proposed methodology in Chapter 5 should aim to make the cognitive dimension more explicit and identifiable.

4.2.3 Knowledge that is shared outside the network

The diffusion of knowledge productivity from the network into the wider organization is difficult to observe. Often this takes more time than the researcher could observe during the research activities. In addition, including the diffusion process of knowledge productivity into the organization leads to difficulties in maintaining a clear unit of analysis. For this reason the research design should focus on knowledge productivity within networks over a longer period of time in order to be able to observe the process of realizing improvements and innovations. In addition, the research design can focus on interviewing colleagues of network participants in order to explore if improvements and innovations are visible within the relevant organization.

4.2.4 Methodology for examining internal network dynamics

Interviews or group interviews only partially reveal the internal network dynamics that are relevant for this study. This reflection supports the need for a research design that combines observational techniques close to the network activities in order to be as close to the dynamics of the network as possible. During the exploratory case studies several reflection meetings with network members provided very useful input. Besides providing a chance to observe network activities, this suggests the need to include reflection meetings with network members to validate and possibly extend the findings of the case study that lead to the conclusions of this study. The unit of analysis is the network level.

4.2.5 Knowledge productivity as an end-result and a process

The exploratory case studies show that relating knowledge productivity to networks' activities is a difficult research exercise. Knowledge productivity is defined both as a learning process and as a learning outcome. Moreover, some end-results of networks take time to realize, making the learning processes difficult to relate to improvements and innovations. A possibility is to describe knowledge productivity in terms of specific end-results that a network realizes with respect to products, services and operating procedures and the level of increased capabilities of the network to solve future urgent work-related questions. Also, it suggests the need for studying networks in a longer timeframe in order to determine interaction patterns and developments between the members.

4.3 Building blocks of the conceptual framework

Based on the insights presented in the previous paragraphs, the next section proposes to study in depth the following main research concepts:

- The urgent work-related question
- The initiator(s) of a network
- The structural, relational and cognitive dimension of social capital
- Social learning processes within the network
- Interventions focussing on specific effects
- Knowledge productivity split into:
 - Improvements and innovations of work processes, products and services
 - The development of sustainable capabilities to innovate

Based on this elaboration the final section presents the conceptual framework followed by the research questions of this study.

4.3.1 The urgent work-related question

This study focuses on social connections between actors in networks. These connections are described as frameworks or relations and can be seen as social structures that make interaction between individuals possible. The unit of analysis of this study are networks. Networks can be studied by focusing on social connections between individuals who are involved in working together on an urgent work-related question. The exploratory case study phase revealed that an urgent related question is useful in providing a natural demarcation of the network members (who are involved in the network based on the urgent question?) and the objective of the network (is the network eventually successful in improving or innovating work processes, products or services based on the urgent question?). An initiator or a group of initiators determines the urgent work-related question. The social network approach in this study does not focus specifically on network members of the same organization or different backgrounds. Instead, the urgent work-related question of the network determines the structural dimension of the network. This study focuses on social connections between individuals. The unit of analysis of this study is the concept of networks. The structure of the network is determined by the urgent work-related question of an initiator or a group of initiators.

4.3.2 The initiator

There are different places in organizations where people can meet to learn, to share knowledge and to work together on challenging questions. In this study, knowledge productivity is studied in social networks. In these networks there often exist specific social dynamics other than visible within the formal organization. These patterns of collaboration are the direct results of the quality of social connections between individuals. Within networks, individuals interact and exchange different forms of knowledge, such as ideas, successes, problems or information. Through these networks learning takes place, predominantly as a social process, in a specific context. A very dense network will result in a different kind of exchange of knowledge than a very loose, open network in another organization (Ahuja, 2000). The success of network connectivity (which describes the interaction within and between networks) is critical to social learning (De Jong, 2008) and innovation (Tsai & Ghoshal, 1998). Already, previous research has recognized the importance of the learning space created by the members themselves in order to facilitate innovation and learning (Coenders, 2009). An important development in this light has been the rise of interest in communities of practice (COPS). These COPS were first explored by Lave & Wenger (1991) to study informal groups and the learning that occurs in these settings. The work of Wenger, McDermott and Snyder (2002, p. 3) led to a rise of interest in business research. Wenger, McDermott and Snyder (2002, p. 3) define COPS as: ‘Communities of practice are groups of people who share a concern, a set of problems or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.’ In these networks professionals meet each other to discuss related issues, problems and possible improve-

ments in their work. Examples in history are corporations in ancient Rome and later in medieval times, specific guilds that held an important business and community function. Generally speaking, a community adds something professionals cannot find in the formal structures of their organization.

The exploratory case study phase of this study shows that networks with a specific sense of urgency and a shared passion between the members for the topic at hand are successful in realizing knowledge-productive results. Previous studies into knowledge productivity revealed that personal ambition, shared urgency and passion for a specific topic are important design principles for organizing knowledge productivity (Verdonschot, 2009). For this reason an initiator of a network with an urgent work-related question is a crucial starting point for a network. The role of a core group is also recognized in the work of Wenger, McDermott and Snyder (2002) who mention the importance of the community's leadership, often initiated by one or two core members. The initiator of a network can be one person, or a group of professionals who encounter difficulties in their work. The urgent work-related question of the network can be described through an identifiable difference between a current situation and a desired result. The initiator of the network identifies the current situation, the problem and the challenge. The initiator can invite network members to participate in activities to tackle the urgent work-related question. Often, the first step of a network is to discuss the general goal of the network, its operating procedures, the desired results and a measurable output. This study focuses on an urgent work-related question that is identified by (a group) of initiators, with a shared sense of direction for a possible outcome, a general goal or objective.

4.3.3 The dimensions of social capital

Theories on social network dynamics approach networks from different perspectives. Network analysis can focus on analyzing individual-based networks or so-called egocentric networks or mapping complete social networks (Kilduff & Tsai, 2003). Another approach is looking at business units or even complete organizations using social network analysis software (Borgatti & Foster, 2003). In this study, social connections and their social capital are studied in relation to social learning processes that lead to knowledge productivity. It is expected that relational characteristics of social capital in networks support social learning processes and knowledge productivity. Nahapiet & Ghoshal (1998) identify three dimensions of social capital as follows: the structural, the relational and the cognitive dimension. These dimensions are adopted as a research perspective in studying social connections:

- The structural dimension of a network based on network ties and specific configurations. This study describes these relations as bonding, bridging and linking connections.
- The relational dimension of the network based on trust and trustworthiness, norms and sanctions, obligations and expectations, identity and identification.
- The cognitive dimension concerns the shared meaning and interpretation of a network based on shared codes, language and shared narratives.

This study focuses on social relations within networks by determining the structural, relational and cognitive dimensions of social capital. The structural dimension of social capital determines social relations by identifying bonding, bridging and linking connections. The relational dimension is described in terms of trust and trustworthiness, norms and values, obligations and expectations and identity and identification of network members. The cognitive dimension identifies shared codes shared, language and shared narratives.

4.3.4 Social learning processes

Generally speaking, research in the field of Human Resource Development (HRD) refers to four perspectives when studying learning processes (Keursten, 2006):

- Behaviorism
- Cognitivism
- Pragmatism
- Socially situated learning

Behaviorism is based on the proposition that actions of individuals focus on specific behavior and that learning is a process of conditioning and association (Keursten, 2006). Cognitivism aims at understanding information processing in the mind and how learning is concerned with the attainment of specific knowledge (Krogh & Roos, 1995). Pragmatism is based on learning as an experience. Learning in this perspective is an ongoing process of acting, experiencing, reflecting, theory making and again acting, repeating this cycle (Keursten, 2006). In the context of learning in networks and the relation with knowledge productivity, this study adopts the socially situated perspective. A focal point of social, situated learning is that learning is described as taking place in a specific social context, and that activities in this social context determine the form of learning as well as the content. Learning in this perspective is a social process, which emphasizes relations as the context-bound nature of learning. In this perspective, there is a strong connection between the relationships of participants and the knowledge that is created. Practitioners do not have a static relation to knowledge. Ideas and knowledge change over time and in relation to context (Abma, 2008,). In this light, the idea that knowledge is abstract and objective does not fit with socially situated learning. The participant acquires knowledge based on experiences in his or her surrounding world (Lowyck, 2005). ‘The world’ in this perspective is not objective, nor an individual representation, but is constructed socially and changes due to social interaction. Based on this perspective, situated learning offers several values that should be taken into account (based on Von Krogh, 2000):

- The language of a group, network or organization influences learning processes. Language, codes and specific sentences affect interaction patterns between individuals. Learning is about creating something new and this often demands creating a new language. This relates directly to the cognitive dimension of social capital.
- Shared narratives are part of the collective memory in which tacit knowledge resides. This memory supports behavior and individuals can fall back upon it. These stories can facilitate or inhibit knowledge creation and learning.
- The quality of interaction has a great effect on learning. Social and communicative skills are necessary to gain access to new knowledge from others. Therefore, knowledge creation and learning demand an open atmosphere and communication.

A vital point in this line of thinking is that learning processes are constructed in the social context in which they take place and determine the content and characteristics of learning (Keursten, 2006). Learning is fundamentally social and based on interaction and collaboration in the context of a work-related relationship. This study explores learning from a social, situated perspective. This perspective is also explored in theory on situated cognition. Situated cognition ascribes learning to specific interaction patterns between individuals and their surroundings. The perspective that interactions with the environment in which individuals are located create specific knowledge originates from the idea that the way individuals see their surrounding as determined by their specific relationships with others (Brown & Duguid, 1991; Lave & Wenger, 1991). Social learning is also a slippery term, which very quickly can result in broad perspectives and vague definitions. This also occurred in the exploratory case studies in which it was difficult to identify specific social learning processes. Therefore this study adopts four guidelines that can serve as a framework for identifying social learning processes:

Tabel 4.1		Guideline and description for identifying social learning processes	
<i>Guideline</i>		<i>Description</i>	
Active participation		The extent that network participants are active during meetings to work towards relevant outcomes.	
Social context of the activities		The extent that network participants develop and foster an attractive social context to work on the urgent-work related question.	
Open dialogue		The extent that participants feel that they can actively participate and share their ideas, questions and new insight.	
Interaction patterns of network members		The description of dominant interaction patterns during network meetings.	

This study focuses on social learning processes in networks. A specific focus lies on the social characteristics of learning that takes place in networks where individuals work collectively on finding a solution to an urgent work-related question. Learning by individuals is strongly determined and impacted by the social context in which it occurs. It is the ambition to study social learning by observing active participation, determining the quality of the social context of the activities, making the level of open dialogue explicit and determining the quality of interaction patterns between the network members.

4.3.5 The link between social capital and social learning processes

This study adopts the perspective of social, situated learning, and by doing so it follows that there is a close relation between the social structure of an individual and the learning processes that take place. On the one hand, social learning processes can also support or inhibit the creation and duration of a specific social structure, which consequently can have an effect on future learning that takes place in the network. Social learning within a network can build trust and safety, which than in terms lubricates future social encounters (Van Der Sluis & De Jong, 2009). In this way, it is expected that social learning processes affect the quality of the social connections in a network and vice versa.

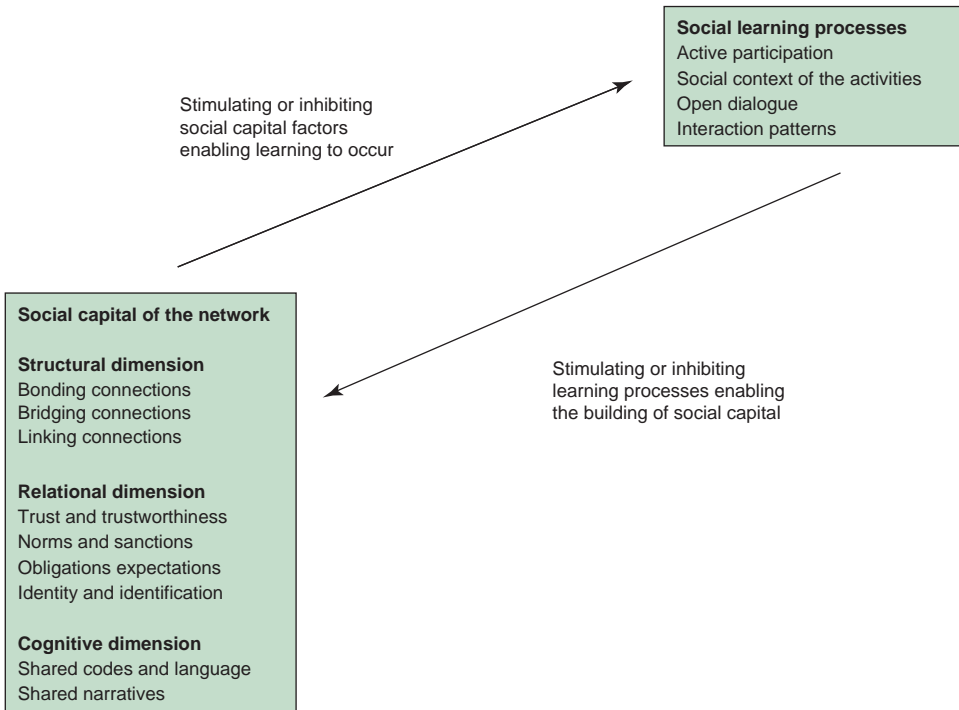


Figure 4.1

Relation between social learning processes and characteristics of social capital

4.3.6 Knowledge productivity in networks

The first exploratory framework presented in Chapter 2 described knowledge productivity by identifying learning processes, leading to specific improvements and innovations. The findings in Chapter 3 revealed that it was difficult to identify these learning processes in networks that lead to knowledge productivity. The conceptual framework proposes to study social learning processes by looking at active participation, the social context of the activities, the level of open dialogue and finally the interaction patterns. Based on this perspective, the conceptual framework in this chapter focuses on knowledge productivity by first identifying improvements and innovations of work processes, products and services. And secondly, identifying the development of sustainable capabilities to innovate. The social learning perspective of knowledge productivity within a network is triple in nature, as it focuses on:

Tabel 4.2	Social learning perspective of knowledge productivity
A social learning process:	<ul style="list-style-type: none"> • Identifying, gathering, exchanging and interpreting relevant information, • Using this information to develop new abilities, • Applying these capabilities to improve and radically innovate operating procedures, products and services.

In this study, knowledge productivity capabilities can be identified when within the network social learning processes result in improvement and radically innovated operating procedures, products and services. The knowledge-productive results need to solve the initial urgent work-related question of the network. As this study makes a distinction between the development of capabilities within the network and concrete knowledge-productive results realized by the network, a second distinction can be made in the outcome of knowledge productivity processes:

- Improvements and innovations of work processes, products or services.
- The development of sustainable capabilities to innovate: this is a sustainable capability because it can be used later in time for other urgent work-related questions.

It is important to determine in what way the network is successful in working on an urgent work-related question. Closely connected to the process of knowledge productivity is the capability to resolve future work-related questions, resulting in improvement or radical innovation of operating procedures, services and products. The sustainability in knowledge productivity lies in the increased capabilities the network members have developed in order

to resolve future innovative work-related questions. This study makes knowledge-productive results operational by using the following indicators:

- New information sources have been located and used.
- The network has developed and acquired new capabilities.
- The developed capabilities of the network have been used to find a solution for the urgent work-related question.
- The network has gradually improved work processes, products or services in order to solve the work-related question.
- The network has developed radical innovative work processes, products or services.
- The network has acquired a sustainable capability to solve future work-related questions.

This study focuses on knowledge-productive improvements and innovations and increased knowledge-productive capabilities of a network to work on an urgent work-related question. Knowledge-productive outcomes are described as improvements or innovations of products, services or work processes. The development of capabilities within the network to be knowledge productive is sustainable as capabilities can be applied later in time for solving new urgent work-related questions.

4.3.7 Interventions for improving knowledge productivity

This study focuses on the process of social learning and knowledge productivity within a network and the consequential influence of specific characteristics of social capital on this process. The objective is to present findings that reveal how these learning activities occur within networks. Subsequently, it is an objective to present interventions that support these learning processes in order to stimulate knowledge productivity. An important part of the research activities is built around the description and analysis of interventions that are carried out in a network by a facilitator. Based on the findings in the exploratory case study, this study will use the structural, relational and cognitive dimension of social capital (Nahapiet & Ghoshal, 1998).

4.3.7.1 *Interventions on the structural dimension*

The structural dimension of social capital is described as the composition and structure of connections between individuals. Herein we consider the structural dimension as the pattern of connections between individuals. We describe this as the structural element of a network: whom can you reach in your network and via what route? (Nahapiet & Ghoshal, 1998; Van Der Sluis & De Jong, 2009). HRD practitioners can offer a supportive role to create an environment for individuals to meet each other. It is vital to bring people together from different perspectives and backgrounds (Kessels & Poell, 2004). However, it will not be effective to force individuals to meet each other. Instead, it is crucial to arrange structural conditions such that these will be

attractive to participants. Interventions that focus on the structural dimension of social capital are:

- Bringing different perspectives together (for instance bridging and linking connections).
- Offering an attractive structure in which to do so.
- Facilitating meetings and creating time to investigate ambitions and goals.
- Supporting new initiatives and relating them to organizational objectives.

4.3.7.2 *Interventions on the relational dimension*

The relational dimension of social capital focuses on the specific relationships individuals have with each other that influence their behavior (Nahapiet & Ghoshal, 1998). The relational dimension goes further than the structural dimension, which only focuses on the pattern of social networks. The relational dimension explains the quality between relationships (Van Der Sluis & De Jong, 2006). The relational dimension represents an important aspect of the ability of individuals to work together. In the relational dimension, aspects such as trust, safety, respect and shared norms and sanctions are central variables. Every social structure can be described in terms of the relational dimension of social capital. When studying learning and knowledge productivity in relation to social capital, it is relevant to design learning activities in relation to the existing social patterns. Emphasis should be put on designing initiatives that are suitable in the social structure. In addition, the interventions should focus on supporting individuals in the capabilities required to connect with others, and to maintain these relationships. Herein the following aspects play a dominant role:

- Creating conditions for a safe and constructive learning environment.
- Promoting an appreciative approach to learning.
- Developing a curious attitude among individuals in order to connect with each other.

4.3.7.3 *Interventions on the cognitive dimension*

The cognitive dimension represents the shared images, stories and meaning of individuals within a social network. Nahapiet and Ghoshal (1998) refer to this as shared narratives and language. The cognitive dimension is often regarded as less important than the structural and relational dimension, or at least it gets less attention. The cognitive dimension refers to creating shared meaning. It entails the way individuals relate to each other and what images and perceptions they create in doing so. Facilitators could take the initiative to reflect on these perceptions. Through working on the reflective capability of a group, individuals work on connecting shared stories, images, experiences and meaning. These reflections can be seen as social lubricant that makes it easier and more attractive to connect. Shared stories and language have a positive effect on sharing and creating new knowledge (Lave & Wenger, 1991). To go even further, Orr (1990) offers arguments that sharing stories and myths make the exchange of tacit knowledge easier and has a positive effect

on the work environment and innovation. The following aspects place an important role:

- Stimulate reflection on past experiences related to the urgent work-related question within the network.
- Stimulate reflection on the progress and activities of the network.
- Collectively determine future steps within the network to work on the urgent work-related question.

This study focuses on identifying the interventions of a facilitator by determining interventions that focus on the structural, relational and cognitive dimension of social capital aimed at enabling knowledge productivity within networks.

4.4 The conceptual framework - version 2

The exploration of relevant literature elaborating on the exploratory case studies results in the following choice and focus on networks with an urgent work-related question as a unit of analysis.

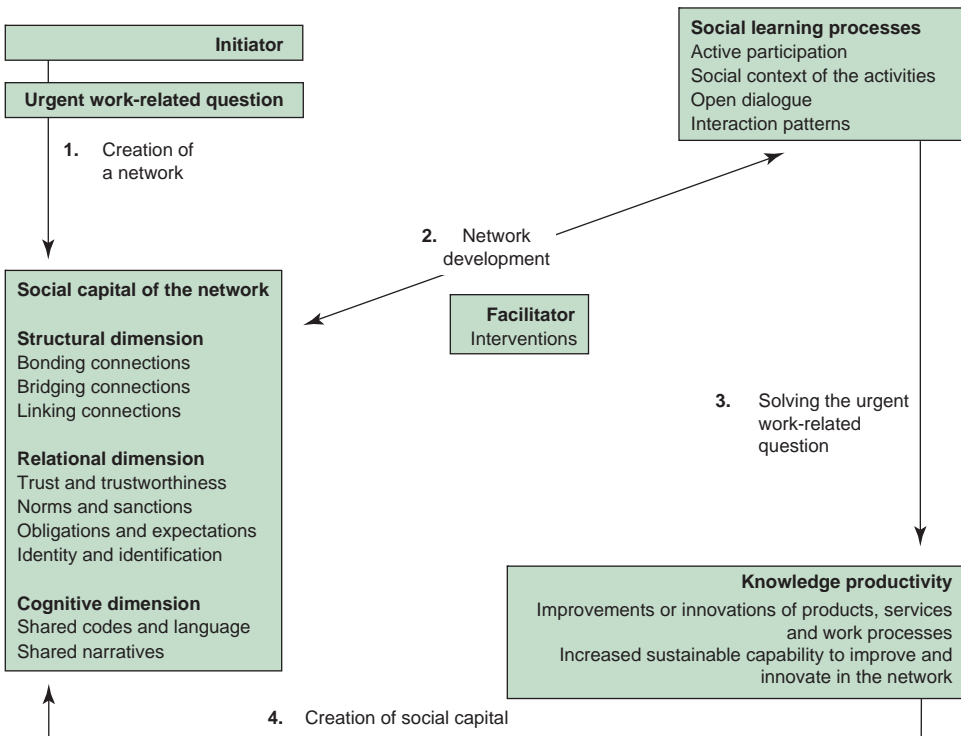


Figure 4.2

Conceptual framework to study social capital and knowledge productivity - Version 2

4.5 Research objectives

This study focuses on knowledge productivity, specifically on the impact of the characteristics of social capital on social learning processes in networks. In order to improve the understanding of how social capital in networks facilitates knowledge productivity, a second version of a conceptual framework is designed. The following objectives are leading the second series of studies:

- To develop a theoretical framework to study characteristics of social capital in networks and their relation with social learning processes and knowledge productivity.
- To develop a research design to observe and analyze social capital and social networks that stimulate knowledge productivity.
- To provide tools for practitioners to facilitate knowledge productivity from a social capital perspective.

4.6 Research questions

In order to reach the above objectives, the following central research question needs further investigation:

How do characteristics of social capital influence knowledge productivity in social networks?

An important conjecture in this study is that learning processes that lead to knowledge productivity are seen as a social process. This social process can be studied in networks. Social learning processes should be analyzed in the context of networks where individuals work together to solve work-related questions. Consequently the revised conceptual framework in this chapter needs to be tested. The following set of questions are relevant in order to study the specific characteristics of social capital, the related learning processes in social networks and the resulting knowledge productivity:

Question I: How do the structural, relational and cognitive dimensions of social capital influence knowledge productivity in networks?

Question II: How do social learning processes in networks lead to improvements, innovations and the development of sustainable knowledge-productive capabilities?

Finally, it is the objective to provide practitioners with a scientific basis for their interventions in order to facilitate knowledge productivity in networks. Here question III is the main guideline for the following research activities:

Question III: What kind of interventions in networks impact knowledge productivity from a social capital perspective?

The next chapter will present the research design based on the conceptual framework presented in this chapter and its research questions.

5.1 Introduction

This chapter presents the research design of the study.¹ The main objective of this study is to design a suitable method to understand how characteristics of social capital within networks impact learning processes that enable knowledge productivity. The main research questions are:

- 1 How do the structural, relational and cognitive dimensions of social capital influence knowledge productivity in networks?
- 2 How do social learning processes in networks lead to improvements, innovations and the development of sustainable knowledge productive capabilities?
- 3 What kind of interventions in networks impact knowledge productivity from a social capital perspective?

In the previous chapter a conceptual framework on the relation between social capital and knowledge productivity is described. This framework enables the presentation of a chain of reasoning reflecting the relationships between social capital in networks, learning processes and knowledge productivity. The objective of this chapter is to create a research design in order to study the conceptual framework in practice and find provisional answers on the three research questions described in Chapter 4. The main empirical research activities of this study consist of three stages:

- 1 *Single case studies of networks*

The first stage is a multiple case study of 17 networks presented in Chapter 6.

- 2 *Cross-case analysis of the single network studies*

The within-case analysis provides material for further data reduction that enables the comparison of the findings of the 17 cases by creating cross-site displays. The findings are presented in Chapter 7.

¹ Part of this research design was presented in the refereed paper: De Jong, T. (2007) *Social Networks, Social Capital and Knowledge Productivity*. Academic paper presented at the *Seventeenth International Sunbelt Social Network Conference, Corfu, Greece*.

3 Consultation session with members of the networks

Participants of the 17 networks are invited to reflect on the findings and explore similarities and reoccurring patterns. These findings are presented in Chapter 7.

5.2 Operationalization of social capital

Social capital is not a new concept. It has been a key component of community studies for decades, although not often specifically named and debated (Cavaye, 2004). Social capital has many definitions and perspectives. There is no one clear definition of the concept and this diversity of interpretation is an important element in social capital. Despite the complexity, some common key characteristics of social capital in literature are (Cavaye, 2004):

- Participation in networks
- Reciprocity
- Trust and social norms
- A sense of belonging
- Proactivity and cooperation

These characteristics are visible in relationships between people. This relational perspective is the starting point of social capital studies. One of the established understandings of social capital is that social capital consists of three forms of relations (Field, 2005; Van Der Sluis & De Jong, 2009; Woolcock, 1999):

- Bonding connections are relations between actors of the same team or department. The actors originate from a similar background with close ties.
- Bridging connections are relations between actors of different teams or departments. The actors originate from rather similar backgrounds with loose connections.
- Linking connections are relations between actors who originate from different organizations. The actors originate from dissimilar backgrounds.

During the start of this study many quantitative research tools for measuring and identifying social capital were analyzed (Beugelsdijk & Van Schaik, 2005; Grootaert, 1998; Grootaert et al., 2004; Inkeles, 2000; Kostova & Roth, 2003; Krishna, 2004; Lin, 2001; Lin, Cook & Burt, 2001; Paldam, 2000; Paldam & Svendsen, 2000; Putnam, 1993, 2000; Putnam & Feldstein, 2003; Van Schaik, 2002; Stone, 2001). Parts of measurement scales or items are useful in making characteristics of social capital identifiable within networks. Despite the usefulness of these instruments, most surveys isolate social capital as an individual ingredient neglecting the consideration of the context of the broader community (Caveye, 2004). These studies adopt social capital as a generic overarching element, sometimes neglecting the specific level it can be studied. Social capital can be studied at four different levels:

- Individual level – relationships between individuals.
- Group level – networks within and between groups.
- Community or institutional level – the accumulation of individual and group relationships.
- National level – the cumulative total of networks, norms and trust across regions, states or even nations.

One of the most problematic issues of social capital theory is its measurement. Social capital is not a static concept, but multidimensional in nature and dynamic (Grootaert et al., 2004). This entails that the research design should include more than simple cause-and-effect relationships, or simple investment and return of social capital (Cavaye, 2004). It can be viewed and measured from many different perspectives. This challenge of measuring items in social capital is also relevant due to a discussion concerning the lack of involvement of community members when studying social capital. Often, evaluators external to a community or network collect information. However, in many circumstances it is appropriate for the network members themselves to be engaged in the measurement of social capital together with the external evaluators. However, quantitative studies on social capital have great difficulty in achieving this ambition. Also, quantitative methods cannot include the development of social capital over time within networks. By only focusing on isolating effects, the development of social capital (for instance through active interventions within networks) cannot be studied. Moreover, methodological studies into social capital suggest that the collected data is not as important as the collective rethinking that comes from it (Cavaye, 2004). Evaluation involves understanding network goals, ambitions and objectives in order to measure appropriate indicators and interpreting information. It supports rethinking, helps networks or communities redefine assets and enhance local decision-making and planning. Hence, studying social capital is more than just a matter of measuring outputs, but supports local deliberation of how the output occurred and what it means for future action. This is not feasible through conducting a quantitative methodology, for this reason an interpretative research approach is adopted in which the network members are seen as active participators to find answers to the central research question. The research design aims to support this design perspective.

5.3 Case study design

This section describes the design of the case study research. First, the choices with respect to the number of cases, their units of analysis and the selection criteria of the cases are explained. The next session deals with how the empirical materials are collected and in what way they are analyzed and described.

5.3.1 Number of cases

First, a choice has to be made between a single- and a multiple-case design. The single-case study is an appropriate design when the case represents the critical case in testing a well-formulated theory or when it represents an extreme or unique case or when it is a revelatory case (Yin, 2003). Although, between 2000 and 2009 an impressive amount of academic research has been done on social capital theory (for an extensive overview see: Borgatti & Foster, 2003), the specific dynamics of social capital in networks and their impact on knowledge-productive processes remains unclear. Specifically, the idea that social capital evolves and can be described as a process remains a new territory. In this study a multiple-case study design is chosen. This design makes it possible to generate multiple data resources and compare different results in order to validate the conceptual framework.

Subsequently, the researcher has to decide upon the number of cases that are necessary or sufficient. Since the research aims at developing a theoretical framework that provides insight into the dynamics of social capital that lead to knowledge productivity, it is relevant to study different organizational settings. This provides the case study research with a robust foundation that offers suggestions for further research based on this case study research. Furthermore, to study knowledge productivity, the exploratory case studies of this research show that time is a dominant research constraint as knowledge-productive results sometimes only become visible after several months within the network. For this reason a longitudinal multiple case study is proposed. By studying networks over a longer period of time, it is possible to study in what way the activities in the network lead to knowledge productivity. A multiple case study is chosen with a longitudinal character of at least six months for each network. During this time, the researcher observes network activities, follows participants during interaction at the workplace and furthermore interviews the members. Based on these insights, several reflection meetings are organized by the researcher to reflect on the findings and validate outcomes. The research is carried out in 17 case studies.

5.3.2 Unit of analysis and design criteria of the study

The units of analysis in this research are networks of connections between individuals based on urgent work-related questions. Within each case several systems are distinguished. The social connections in the networks are studied by using the structural, relational and cognitive dimensions of social capital (Chapter 4). The selection of the cases depends on theoretical and practical considerations. The first theoretical consideration is the type of organization. The research is not interested in knowledge productivity in a specific industry as such. Moreover, it is believed that the distinction between service- and product-based organizations in terms of the relational perspective of knowledge development is fading away (Boer, 2005). For this reason, no explicit choice was made as to the type of organization.

Secondly, a theoretical choice has to be made between cases with a minimum or with a maximum variation. Due to the exploratory nature of this study and the perspective that the interaction of the conceptual model can be made visible in all organizations, a maximum variation is chosen. In order to cover the diversity of the cases and to better evaluate the conceptual model, different organizations are selected in terms of their core business. The case study is based on a network level of analysis. The following types of organizations are included in the study:

- 1 A psychiatric care institute.
- 2 A governmental organization.
- 3 An inter-church organization for development cooperation in Third World countries.
- 4 A vocational training center in Utrecht.
- 5 A vocational training center in Limburg.

The networks that participate in the research have to comply with specific design criteria. These design criteria are abstracted from the exploratory case study. They offer an additional perspective to the comparison of findings in this study. The 17 networks are comparable in terms of sharing these design criteria:

- An initiator who is successful in identifying a work-related question and is able to invite relevant actors to participate with.
- Several members of the network have already experimented in finding a solution for the work-related question but did not succeed.
- The initiators of the networks are willing to become 'co-researchers' and reflect regularly on the findings of the study.
- The network has the ambition to organize several activities over a longer period of time (minimum of six months).
- The network desires to cooperate with this research program in terms of participating in reflection sessions within and between the networks during the research activities.
- The findings of the research are open for publication in this dissertation and in relevant journals.

5.3.3 Design a clear and systematic approach

Good research is systematic and well organized. The research activities supported the process of jointly determining the urgent work-related question that the network desired to work on. The research design is created in such a way that it facilitates reflection and validation of the findings within and across the networks. The approach consists of seven steps that each network goes through:

- 1 Design meeting: together with the initiator(s) of the network, the urgent work-related question is clarified and connections with the research objectives are explored.
- 2 Design of an activity plan: based on the exploration in the design meeting, specific activities and future steps are identified. This is translated into a plan.
- 3 Creating organizational support for the research: the network organizes support from management or other relevant stakeholders in order to organize the network activities.
- 4 Carrying out the research: within the network, the progress, activities and outcome are monitored and relevant data is collected and analyzed.
- 5 Validation of research findings: the findings and results of the research activities are validated in the network by their members. First conclusions are presented, and then several meetings offer time to reflect upon these findings.
- 6 Reflecting on the findings: in this phase also the organizational benefits of the network activities are explored. It is determined if the findings support knowledge productivity on the organizational level and in what way it answers the initial work-related question.
- 7 Sharing the results: the obtained results and future activities of the network are shared within the organization and with relevant external partners.

5.3.4 Collection and analysis of empirical data

Studying the characteristics of social capital and its impact on knowledge productivity is not an easy endeavor. In the past, empirical data on knowledge productivity has been collected in several ways. These include the use of questionnaires in order to better understand the learning environment in which innovation can take place (see for instance Van Lakerveld, 2005b), reconstructing case studies in order to determine specific principles that support the process of innovation (Verdonschot, 2009) or even the design of a measurement scale to diagnose the level of knowledge productivity within organizations (Stam, 2008). In this study the main method of collecting data is by observation, interviews, network reflection meetings, diaries and validation sessions. This section describes how the empirical data of the 17 cases were collected and analyzed in the 17 cases.

5.4 Case studies

The next section gives an overview of the selected case studies, the research activities and time frame. After this, the protocol for analysis is presented. The empirical data consist of observation reports, interview transcripts, diaries of participants and field notes. Also, several reflection meetings were organized with network participants to validate the findings of the case study. For each network study two researchers carried out the research activities. The researchers are trained to use the conceptual framework and methodology. Besides the previous mentioned empirical findings additional information was used in regards to the specific organizational context, such as vision documents and strategy papers.

Table 5.1 Overview of the research activities	
<i>Research activity</i>	<i>Focus in the study</i>
Design meeting	Identifying the initiator(s) of the network, the urgent work-related question and relevant network actors.
Observations of network meetings	Researchers observe network meetings and work with a research protocol (see Appendix C).
Interviews of the network members	Based on a semi-structured questionnaire, network participants are interviewed (see Appendix C).
E-mail diaries of network participants	Network participants frequently rated specific statements about the central research variables (see Appendix C).
Network participants interview each other	Based on a semi-structured questionnaire, network participants interview each other (see Appendix C).
Systematic review of relevant information	Together with network participants the findings are discussed and presented on several large posters (see Appendix C).
Reflection meeting	Network participants are invited to react to the findings and discuss if they seem viable.
Exchange meetings	Sharing the findings in several exchange meetings within and between the 17 networks.

5.4.1 Case study within GGNet: two networks

The collection of empirical data took place between March 2008 and April 2009. The following networks are used as case study material:

- Case 1: GGNet network Sexuality and intimacy.
- Case 2: GGNet network Dealing with seclusion and reducing forms of restraint.

5.4.2 Case studies within the Academy for Public Information (API): three networks

The collection of empirical data took place between November 2008 and May 2009. The following networks are used as case study material:

- Case 3: API network Analyzing media findings.
- Case 4: API network Writing speeches a.k.a. The Dead Horse.²
- Case 5: API network Language in texts.

5.4.3 Case studies within the Limburg Leisure Academy (LLA): three networks

The collection of empirical data took place between September 2008 and April 2009. The following networks are used as case study material:

- Case 6: LLA network Career development.
- Case 7: LLA network Learning in the Limburg Leisure Academy.
- Case 8: LLA network Qualification, testing and assessment.

5.4.4 Case studies within ICCO: three networks

The collection of empirical data took place between April 2008 and December 2008. The following networks are used as case study material:

- Case 9: ICCO network Co-responsibility and ownership.
- Case 10: ICCO network Democratization.
- Case 11: ICCO network Land rights.

5.4.5 Case studies within the ROC Midden Nederland (ROCMN): six networks

The collection of empirical data took place between December 2007 and December 2008. The following networks are used as case study material:

- Case 12: ROCMN network Increasing the quality of language in competence-based learning.
- Case 13: ROCMN network Supporting entrepreneurship.
- Case 14: ROCMN network Education and interactive media.
- Case 15: ROCMN network Learning in career development.
- Case 16: ROCMN network Creating awareness to work with ICT.
- Case 17: ROCMN network Design of curriculum activities and student citizenship.

² The network members adopted the name 'The dead horse' as an informal name of the network because previous attempts to organize learning activities for speechwriters failed dramatically.

Table 5.2		Overview of selected cases		
<i>Organization</i>	<i>Network</i>	<i>Participants</i>	<i>Time frame</i>	
GGNet	1 Sexuality and intimacy	40	March '08 – Apr '09	
	2 Dealing with patient seclusion and restraint	15	March '08 – Apr '09	
API	3 Analyzing media findings	15	Nov '08 – May '09	
	4 Writing speeches	20	Nov '08 – May '09	
	5 Language in texts	40	Nov '08 – May '09	
Limburg Leisure	6 Career development	15	Sept '08 – Apr '09	
	7 Learning in the LLA	20	Sept '08 – Apr '09	
	8 Qualification, testing and assessment	15	Sept '08 – Apr '09	
ICCO	9 Co-responsibility and ownership	15	Apr '08 – Dec '08	
	10 Democratization	15	Apr '08 – Dec '08	
	11 Land rights	15	Apr '08 – Dec '08	
ROCMN	12 Increasing the quality of language in competence-based learning	15	Dec '07- Dec '08	
	13 Supporting entrepreneurship	25	Dec '07- Dec '08	
	14 Education and interactive media	50	Dec '07- Dec '08	
	15 Learning in career development	100	Dec '07- Dec '08	
	16 Creating awareness to work with ICT	120	Dec '07- Dec '08	
	17 Design of curriculum activities and student citizenship	50	Dec '07- Dec '08	

5.5 Data collection protocol

The conceptual framework as presented in Chapter 4 offers the starting point of investigating the research variables: initiator, the work-related question, dimensions of social capital, social learning processes, knowledge productivity and interventions. In the next paragraphs the research variables are discussed in conjunction with their data analysis protocol.

5.5.1 Identification of network initiators and the urgent work-related question

Within this research variable the focus is to determine who the initiator is and what the relevant urgent work-related question is. The protocol that covers the network initiators and work-related question is as follows (for the complete description of the protocol also see Appendix C):

- The initiator is able to make his or her work-related question explicit, visible in practice and concrete through examples.
- The initiator is able to identify members (internal and / or external) who are involved in the question and could add value.
- The initiator is able to invite these members to explore the relevant urgent work-related question.
- The relevant partners are located within or outside the organization.
- Involved members are invited to participate and share their interest and ambition to participate within the network.
- It is explored if there are other networks in the organization that also work on a similar topic.

5.5.2 Structural dimension of the network

The structural dimension of the network is determined by identifying the network participants and their bonding, bridging or linking connections.

The following protocol is relevant (for the complete description of the protocol also see Appendix C):

- Describe the participants of the network: name, function, department, organization and relevant expertise.
- Determine what the structure of relations within the network is:
 - Bonding connections: within the same team or department.
 - Bridging connections: from different teams or departments.
 - Linking connections: from different organizations.
- Determine whether the network participants are specifically invited because of their relevant expertise.

5.5.3 Relational dimension of the network

The relational dimension of the network focuses on the quality of connections between network participants. Herein, the focus between visible behavior and the relationships in the network is of interest. By observing behavior,

this study aims to make statements about the relationships in the network. The following protocol is relevant when studying the relational dimension in networks (for the complete description of the protocol also see Appendix C):

- Identify quotes and statements about personal motivation to voluntarily cooperate in the network.
- Identify observable behavior that relates to the level of trust in the network.
- Identify observable behavior that clarifies the level of norms and sanctions between network participants.
- Identify observable behavior that expresses the level of obligations and expectations between network participants.
- Identify observable behavior that expresses the level of identity and identification in the network.

5.5.4 The cognitive dimension of the network

The cognitive dimension of the network focuses on shared codes and language, shared narratives and shared interpretations. In this study we focus on observations in the network that provide insight in these ‘shared systems of meaning’. The following protocol is relevant when studying the cognitive dimension in networks (for the complete description of the protocol also see Appendix C):

- Determine the level of specific professional language that is used in the network.
- Determine the level of shared codes that is used in the network.
- Determine the presence of shared narratives in the network.
- Determine the shared interpretations about their work environment during network meetings.

5.5.5 The social learning processes in the network

Social learning processes are observed by a mixed methodology: firstly by observing the network meetings and secondly by interviewing network participants. Insights are collected and analyzed on the network level. The findings are presented to the network. This offers to opportunity for network participants to comment, falsify or extend the research findings. The following protocol is relevant when studying social learning processes in the networks (for the complete description of the protocol also see Appendix C):

- Determine critical incidents in the network, related to the work-related question the network is working on.
- Determine what activities are undertaken to address the relevant issue.
- Determine who are the relevant actors that are involved around the issue.
- Determine the quality of the activities in the network.
- Determine the level of open dialogue and active participation between network participants.
- Determine the level of creativity and stability in the network during network meetings.
- Determine the effect of the activity (see also knowledge productivity).

5.5.6 Improvements and innovations

The concept of knowledge productivity is divided in improvements and innovations, and the sustainable capability of the network to innovate. The following protocol is relevant when determining improvements and innovation (for the complete description of the protocol also see Appendix C):

- Determine if the network is successful in finding and using new information sources.
- Determine whether the network is successful in developing new sources of information.
- Determine whether the network has developed and used new activities to address the relevant work-related question.
- Determine whether the network is successful in realizing gradual improvement of the work process related to the work-related question.
- Determine whether the network is successful in developing new services to address the work-related question.
- Determine whether the network is successful in developing new products to address the work-related question.
- Determine whether the network is successful in developing new operating procedures to address the work-related question.

5.5.7 The increased sustainable capability to innovate

The following protocol is relevant when studying the sustainable capability to innovate in the networks (for the complete description of the protocol also see Appendix C):

- There exists new visible behavior of network participants that supports the solving of the work-related question.
- Determine if the network participants show new capabilities to address future innovative questions.
- Determine whether there is a visible connection between the learning activities in the network and the actual work environment of the network participants.

5.6 Concluding remarks

This chapter described the methodological characteristics of this study. The research is qualitative in nature and follows the interpretive tradition (Boer, 2005). A case study design has been chosen including 17 networks, which are selected based on their variation in organizational backgrounds and compatibility in terms of network dynamics. The following Chapter 6 describes the findings of the case study research. Based on these findings a cross-case analysis is performed in Chapter 7 leading to Chapter 8, presenting the conclusions and discussion of this study.

6.1 Introduction

This chapter describes the findings of the second series of case studies. The aim of this study is to provide insight into what characteristics of social capital influence social learning processes that lead to knowledge productivity. The second series of case study consists of a case study research of 17 networks. The study of these networks serves as an input to validate and possibly extend the conceptual framework presented in Chapter 4. Chapter 7 presents a cross-case analysis of the case studies. The research activities focus on 17 networks across 15 organizations geographically dispersed in the Netherlands. The research activities took place between December 2007 and May of 2009. The 17 networks are studied over a longer period in time in order to include the development of social capital within the networks and to be able to study knowledge productive results that often take time to be realized. The research activities in each network took between six to twelve months. During this timeframe a group of co-researchers observed network meetings, frequently interviewed participants and organized reflection meetings. The aim of the reflection meeting is to present preliminary findings of the case study to the members of the network in order to validate the findings. This also leads to the identification of stimulating and inhibiting factors in the network that are presented after each case description. Each network is studied by a minimum of two co-researchers. The validated findings serve as input to organize a discussion meeting within the organization to check if the activities of the network resulted in knowledge productivity within the relevant organization.

The next paragraphs present the case descriptions of the participating organizations. This leads to a brief description of the 17 networks resulting in the findings of the 17 cases. The conceptual framework of Chapter 4 serves as a framework for analyzing the findings of the case studies.

6.2 Structure and procedure of each within-site case presentation

After each case description, a within-site case display is presented. It is the objective to reduce the vast amount of data of the 17 case studies by creating displays of the within-site cases. The within-site analyses provide material for comparison in a cross-site analysis in Chapter 7. Composing within-site displays results in considerable data reduction. Data reduction is relevant in this study in order to successfully compare the 17 networks and their relation to the central research questions. Chapters 6 and 7 do not include the original database per case. The complete case study database comprises out of transcripts of interviews, invitations to network meetings, descriptions of network meetings, reflection documents, e-mail journals of participants and the final within-case study report presented and validated by the network. The full database is stored at the researchers archive and can be inspected. The data reduction described in the case displays is realized by rating the main variables of the study. To improve the reliability of the rating, three researchers individually assessed the findings of each network. A researcher of the Faculty of Behavioral Science of the University of Twente and a researcher of the Centre for Organizational Performance were invited to rate the displays. This was done based on the case descriptions in this chapter. The findings were discussed with the researcher. The articulation of their assessment improved their mutual understanding and led to a single agreed value for all the variables in the within-case displays. In the third column of the within-site displays, the symbols O, +, ++, +++ and ++++ appear. They indicate the visibility of the variable (O indicates absence, and ++++ indicates very strongly represented). The symbols were placed in conjunction with the text enabling outside observers to judge the consistency of the expert panel and the researcher's interpretations.

6.3 Participating organizations and the selected networks

In this section the participating organizations in the case study research are described. Also, a brief description of the connection between relevant developments within the organization and the reason to participate in the case study research is presented.

6.3.1 GGNet

GGNet is a psychiatric health care institution located in the East of the Netherlands. It is the ambition of GGNet to treat people with clinical psychiatric disabilities, severe psychiatric social problems and psychiatric diseases, as well as prevention. GGNet's goal is to support and help people to function in society independently. GGNet employs more than 2,400 professionals in healthcare. GGNet is divided into five regions in the Netherlands: Doetinchem, Zutphen, Apeldoorn, Zevenaar and the area of Winterswijk – Groenlo

and provides healthcare for any individual who needs it, despite where they live. With several home bases in the region, GGNet provides healthcare for children, adolescents, adults and elderly people. A majority of the services of GGNet takes place in therapy and support centers, often at the same location as (or nearby) local hospitals. The aim of GGNet is to be in the middle of local society and to have the ability to provide healthcare closely to individuals. Besides diagnosis and treatment, GGNet pays attention to prevention. GGNet prevention has the goal to prevent severe and long-time psychiatric problems. GGNet does this by focusing on people with minor psychiatric complaints, people with a higher risk of psychiatric disabilities (e.g., direct family) and people who have already received treatment and are at risk of relapsing.

6.3.1.1 *Connection between GGNet and the start of the research activities*

In 2004 GGNet initiated the Knowledge Centre for psychiatric care. The Knowledge Centre supports the professional development of nurses by initiating academic research, education and training and supporting innovation. One of the ambitions of the knowledge centre is to facilitate and develop learning networks in which colleagues of GGNet can organize their professional development and at the same time can work on innovations based on urgent healthcare-related questions. In GGNet two networks participated in the case study research: the network dealing with sexuality and intimacy and the network for patient seclusion and forms of restraint.

6.3.1.2 *Case 1: GGNet network Sexuality and intimacy*

→ Studied by S. van der Veer & T. de Jong

Work in psychiatric healthcare centers focuses on the support of patients to re-enter society and does this by treating psychiatric disorders. Patients in these healthcare centers cope with different psychiatric disorders such as schizophrenia, manic depression, severe anorexia or being borderline suicidal. These disorders demand high attention and awareness of nurses, doctors and psychiatrists. The work process of the healthcare staff is built around shifts of eight hours. Healthcare never stops; it goes on in the weekend and on holidays, every day, 24/7. The work activities demand very high attention of the nurses. One of the intricate problems in healthcare is that many patients have the desire to express themselves sexually. The nature of work does not easily create room for this discussion with patients or between colleagues. Because of the lack of openness on this subject problems have occurred with patients who desire to express themselves sexually. Nurse practitioners experienced difficulty in dealing with these situations and also were not aware of specific rules and interventions. The objective of the initiator of the sexuality and intimacy network was to reach an open climate in which these discussions could take place. The ambition is to design a working paper with ground rules and perspectives of GGNet on sexuality and intimacy and to initiate activities to deal with these issues within healthcare centers.

6.3.1.3 Case 2: GGNet network Dealing with patient seclusion and reducing forms of restraint

→ Studied by S. van der Veer & T. de Jong

Seclusion and restraining patients are techniques that can be used for those individuals who form a direct high risk of hurting themselves or their direct surroundings. These techniques can vary from locking the door of the room of the patient to using restraints to keep a patient in bed. The most severe technique is to put a patient in a holding block cell. In such a cell, no contact can be made with the external environment and the patient cannot exit. Sometimes the patient is also fixated in the bed. In practice, nurses are the first to initiate these forms techniques, in close contact and supervision with the psychiatrist. In the history of mental institutions fixation was a normal way of dealing with patients. In the previous ten years this has changed dramatically. But, relative to other European countries, the Netherlands uses the separation techniques (fixation) and the holding cell often. Within GGNet (but also due to the discussion on a national level), there is an ambition to radically decrease the use of these interventions and to find other ways to offer a safe climate for the patient and the direct environment. The objective of the initiator of the seclusion and reducing forms of restraint network was to stop solitary confinement, to minimize holding interventions and to improve the quality of other interventions that can be used to prevent seclusion and forms of restraint at an early stage. An additional objective of the network was to exchange best practices within the organization to learn from each other and to share knowledge how to work on this.

6.3.2 Academy for Public Information (API)

The Academy for Public information is a Knowledge Center aimed at increasing the expertise of governmental communication in the Netherlands. API is located in the heart of The Hague, close to all the ministries and is part of the Public Information and Communication Office, a department of the Ministry of General Affairs. API provides training, professionalization, internal publications and meetings where the relation between policy and communication is a key issue. Besides this, API supports new developments within the government that need facilitation and support. A focal point for API is translating policy and political developments to the communication challenges in the work of civil servants in The Hague. API works with fixed learning courses, which are open for all civil servants. Secondly, API offers training activities tailored to specific questions from departments. Based on an intake, API designs a course or training. The final objective of API is to actively share and develop knowledge about the professionalization of communication in ministries. API does this through their website (communicatieplein.nl), several publications each year and through informal meetings (such as lunch meetings or master classes).

6.3.2.1 *Connection between API and the start of the research activities*

API has an ambition to move away from purely offering educational activities in the field of communication. Colleagues of API feel that they have become excessively ‘reactive’ instead of ‘proactive’ and have to put in a lot of energy to motivate participants during training and workshops. Instead, there is an ambition to focus more on specific learning and knowledge-related questions of departments and support these by jointly developing learning programs in networks. API desires to learn more from the dynamics in networks in which individual development takes place. By doing so, they want to be able to support strong learning processes that are based on the dynamics of networks.

6.3.2.2 *Case 3: API network Analyzing media findings*

→ Studied by: E. Teeuwisse, C. Sprenger & T. de Jong

Within various departments of ministries in Den Haag, the desire to analyze media input is very relevant. Sudden breaking news or articles in newspapers have an enormous effect on ministries and the way they communicate policy and decision-making. Based on training that API initiated, a group of media analysts decided to create a learning network to identify possible new ways of dealing with these kinds of media developments and to experiment with them. Also within each ministry there is an increasing desire to pay more attention to media input. Moreover, the question of the learning network is how to deal with new media input and to develop specific steps or a framework to support professionals in various departments when such an event occurs.

6.3.2.3 *Case 4: API network Writing speeches a.k.a. The dead horse*

→ Studied by: E. Teeuwisse, C. Sprenger & T. de Jong

Every minister of a ministry has his or her own speechwriter. A speechwriter is responsible for writing a speech for a specific event or on new legislation or decision making. Writing a good speech is a highly creative process. Most of the speechwriters that work for the ministries are freelancers, who organize their own creative process. There are a handful of excellent speechwriters who have the unique ability to translate lengthy reports or sometimes boring political decisions into clear and strong speeches. A group of speechwriters decided to organize several activities to share experiences, questions and ideas how to write a proper speech. There was a sense of urgency to do so, due to several flaws in the political arena in 2008. They invited external speechwriters to learn from (for instance an advisor of Barack Obama). The goal was to learn from each other and share best practices in order to write better speeches and to develop specific tools to enable this.

6.3.2.4 *Case 5: API network Language in texts*

→ Studied by: E. Teeuwisse, C. Sprenger & T. de Jong

A majority of the work of civil servants in communication departments focuses on writing texts. The quality of the Dutch language of these texts needs to be on a high professional level. This includes the use of proper grammar and vocabulary. A group of text writers followed training on texts writing. The trainer proposed to connect these professionals in a learning network. The objective is to share future initiatives and to investigate possible opportunities to learn from each other. The ambition of the initiator was to be able to coordinate these activities between the different departments.

6.3.3 *The Limburg Leisure Academy (LLA)*

The Limburg Leisure Academy (LLA) is an academy where nine schools and more than ten organizations jointly offer educational activities to potential employees in the leisure sector in the province of Limburg. The LLA initiates educational activities at lower level vocational education, middle level vocational education and the bachelors' degree level. The LLA is a new initiative in Limburg based on the urgency to professionalize the Leisure sector. Leisure is of commercial importance in the province of Limburg and is characterized by a big diversity in types of organizations that participate. All these organizations need employees with a 'leisure mentality', which is divided into attitude, motivation and skills. Until now the number of students who decide to follow leisure education and eventually do not obtain a diploma in Limburg is unacceptably high. This urgency was the starting point for an initiative between the school and organizations to jointly develop a Leisure Academy. The design of the LLA is based on the vision of tailor-made education focusing on the specific learning needs of students. Secondly, learning on the job is a crucial aspect in the LLA. Students can obtain degrees on the lower level (VMBO), middle level (MBO) and bachelors degree level (HBO).

6.3.3.1 *Connection between LLA and the start of the research activities*

The LLA is an initiative of a network of people, all connected to the Leisure branch in Limburg. The ambition of this network is to design the LLA collectively with schools, organizations and students. The challenge in this process is to design a powerful learning environment in which this innovative process between different parties can take place. Three groups are responsible for the design of the content and structure within the LLA. The LLA will start with a pilot case in September 2009 and will be fully operational as of September 2011.

6.3.3.2 *Case 6: LLA network Career development*

→ Studied by: C. Ehlen & T. de Jong

The center for career development focuses on the orientation phase, screening and intake of students in the future LLA. The ambition is that all intakes at different educational levels (for all full-time and part-time students) occurs within the center. The objective is to improve the support of students in career development choices within the leisure sector.

6.3.3.3 *Case 7: LLA network Learning in the Limburg Leisure Academy*

→ Studied by: C. Ehlen & T. de Jong

The network that works on learning in the Limburg Leisure Academy is part of the LLA. The center for career development is one of three networks to work on the design and construction of the LLA. Companies in Limburg deal with a shortage of qualified personnel. This leads to difficulties in maintaining their staff and also that too few students choose for the leisure branch. The network deals with the design of clear learning activities together with the leisure branch in Limburg. Besides the design of learning activities a second ambition is to create a flexible system for tailor-made education for students.

6.3.3.4 *Case 8: LLA network Qualification, testing and assessment*

→ Studied by: C. Ehlen & T. de Jong

The center for qualification, testing and assessment is the third and last network that is responsible for the design of the LLA. The aim of this network is to determine the competence development of students. This is done by working together with trained assessors both from schools and leisure organizations. Qualification, testing and assessing entails that eventually certification on three levels can take place (VMBO – MBO – HBO). The desired effect is that the strengths of participants become visible and that qualification and assessment can also take place on subparts of the LLA in different areas of leisure. The expectation is that qualification levels in the province of Limburg between mid-level vocational training and bachelor level increases.

6.3.4 ICCO

ICCO is an organization for development cooperation. ICCO's mission is to work towards a world in which people live in dignity and prosperity, a world where poverty and injustice are no longer present. ICCO is active in 55 countries. ICCO and Kerk in Actie international departments merged in 2007 into one cooperation, sharing resources, staff and management. ICCO's work consists of financing activities which stimulate and enable people and organizations, to defend Human Rights and justice, earn an income, and improve their overall wellbeing. ICCO is active in countries in Africa and the Middle East, in Latin America and the Caribbean, and in Asia, Oceania and Eastern

Europe. ICCO has its roots in the Dutch Protestant-Christian churches and is partner in various national and international collaborations. Furthermore, ICCO will cooperate with anyone who shares its ideals and values. ICCO is actively involved in this wide range of collaborations to boost the effects of its financing work and to mobilize expertise and information that is available within its organization for lobbying and advisory purposes. ICCO finds its inspiration in the Christian tradition and mission, as well as in experiences and stories from partners who mostly have a different cultural background and who have different sources of inspiration. ICCO is one of the six co-financing organizations in the Netherlands and has an annual budget of more than 130 million euros. These funds are provided by the Dutch and European governments and other Funds as well as by organizations participating in the ICCO alliance and from direct fundraising. ICCO is accountable to the government and society for the way in which these funds are spent.

6.3.4.1 *Connection between ICCO and the start of the research activities*

In 2008 ICCO started to radically shift its structure and strategy, from an organization that was regionally structured towards an organization that is structured according thematic areas. This new way of organizing work had a large impact on work activities. Previously, groups were formed around countries or regions and thus organized their expertise around this. Now, networks of different expertise areas need to cooperate with each other in order to work with alliances in the Netherlands and abroad. In this process, ICCO has the ambition to organize learning activities in networks of professionals. Based on urgent work-related questions, professionals organize activities to work on them. The ambition of ICCO is to learn from these experiences in order to improve itself as an organization. Secondly, ICCO is searching for ways to enable strong connectivity between the results that have come out of the networks initiatives and the daily programs within the organization. Lastly, ICCO foresees the internal development of strong groups of experts based on thematic, country or regional expertise. Accordingly, it is important to find ways to diffuse this often local knowledge into the organization.

6.3.4.2 *Case 9: ICCO network Co-responsibility and ownership*

→ Studied by: **M. Smit & T. de Jong**

The network for co-responsibility and ownership is part of a strategic initiative of ICCO to initiate action-reflection between professionals of various departments. The general objective is to support ICCO professionals in developing knowledge about programs, countries and new partners in order to balance efficiency and knowledge sharing. The goal is to share experiences and approaches in different programs and to reflect on how to keep partners in the loop of co-design. Reoccurring tension in programs is part of the process of distributing resources and tasks. The network focuses on sharing and exchanging practices in order to collectively reflect on this. The aim is to develop a general model or perspective that can be used across the organization for different network participants.

6.3.4.3 Case 10: ICCO network Democratization

→ Studied by: M. Smit & T. de Jong

Democratization is one of the strategic themes within ICCO, but it remains a fuzzy concept according to some organizational members. Questions that the initiator of the network desired to elaborate on was: What kind of democratization do we aim for? What is important within such democratization? How do we already work on democratization and in what way can we improve this? Because of the recent change in organizational structure (from regionally based projects to a thematic approach), the network initiator was curious to find out what the position of ICCO as an organization on democratization was. The aim was to share the findings within ICCO between the various departments.

6.3.4.4 Case 11: ICCO network Land rights

→ Studied by: M. Smit & T. de Jong

The network for land rights aimed at organizing knowledge exchange activities on land rights issues that ICCO is dealing with. The objective is to develop a shared perspective on how to deal with land rights issues within ICCO and their partners. Questions of the initiators of the network are: How can we increase the social awareness for these kinds of activities in the country? What are important alliances in land rights projects? How can we work together with our different departments within ICCO to increase our success ratio in projects? Based on these questions the network aimed at creating a policy paper on the position of ICCO regarding land rights in projects with external partners.

6.3.5 ROC Midden Nederland (ROCMN)

ROC Midden Nederland is a Dutch vocational training center in the Netherlands. ROCMN organization is the result of a merger in 2003 between the ROC Utrecht and ROC De Amelanden. ROCMN is one of the largest schools for vocational education in the Netherlands. More than 27,000 students study with 2,200 staff members in 52 locations in the center of the Netherlands. ROCMN provides vocational training in nine different disciplines (MBO level):

- Information and communication technology
- Economics and service marketing
- Construction, design & media
- Art, culture and media
- Care & welfare
- Tourism, Leisure & events, catering and facility management
- Sports
- Personal care
- Safety & security

Besides regular programs, ROCMN provides VMBO, HAVO and VWO schooling for adults. ROCMN also offers tutoring activities that prepare students for future educational activities. For adults, ROCMN provides part-time MBO curricula, training activities, in-company training and it supports reintegration support for employees.

6.3.5.1 *Connection between the ROCMN and the start of the research activities*

The ROCMN was also a case study in the exploratory case study phase in 2006. During this period the strategy of the ROCMN was based on cooperating closely with students, relevant organizations and teachers in order to organize educational innovation. One of the ways to organize this process for the ROCMN was through learning networks. Learning networks are groups of people who jointly work on strategic issues in the ROCMN, such as decreasing the number of dropouts or media and education. The ambition of the ROCMN was to identify in what way learning networks are successful in finding innovative solutions for strategic issues. Secondly, the ROCMN was interested in determining what role learning networks play in the professional development of teachers.

6.3.5.2 *Case 12: ROCMN network Increasing the quality of language in competence-based learning*

→ Studied by: M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

Before this network was founded, already several teachers actively shared knowledge on how to increase the quality of language of students in competence-based learning. This was done due to a new language policy of the ROCMN. The goal of the network is to inform each other on developments on issues concerning language at mid-level vocational training, also on the national level. The ambition is to give signals and input to the management of the ROCMN on how to deal with paying attention to language in competence-based learning activities. The ROCMN activities are dispersed in different departments and for this reason a lot of decision-making and knowledge remains located in these departments. The objective is to connect the different ‘pockets of knowledge’ and to actively share insights and best practices on increasing the quality of language by students in competence-based learning.

6.3.5.3 *Case 13: ROCMN network Supporting entrepreneurship*

→ Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

The aim of this network is to identify entrepreneurial projects and to connect the people who are active in these projects in order to stimulate knowledge sharing and learning from each other. The ambition is to give an impulse to the innovative capacity of the ROCMN. Together with an external expert, several projects are discussed in meetings and analyzed on their strengths and weaknesses. An important objective is to share insights into how to get

hierarchical commitment and funding for these projects. Increasing and supporting entrepreneurship is a strategic objective for the ROCMN. For this reason, the insights and findings are shared with management and the board of directors (CvB).

6.3.5.4 *Case 14: ROCMN network Education and interactive media*

→ Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

The network education and interactive media aims at organizing inspiring meetings to stimulate working with new forms of media in educational activities. A group of initiators expresses their concern that interactive media is very often used privately by students and teachers (for instance i-pods, linked-in, MSN, etc.). At the same time it is hardly adopted in school activities. Based on this concern the initiators organized several activities to motivate teachers to experiment with interactive media, and secondly to create awareness regarding what colleagues within the ROCMN can do to support these experiments.

6.3.5.5 *Case 15: ROCMN network Supporting learning in career development*

→ Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

Supporting students in learning through their career development is a relatively new field in vocational training for the ROCMN. At the same time, different departments and even other schools already experiment with learning and career development. The objective of the network is to create a product or service that can be used for teachers to support students in their career development. This is done on the basis of the strategic vision on learning made explicit by the ROCMN in 2006.

6.3.5.6 *Case 16: ROCMN network Creating awareness to work with ICT*

→ Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

The goal of the education and ICT network is to identify what kind of computer-related programs could support learning and educational activities. Specifically, working with an online educational software system is a relatively new development that demands careful support of experts to help colleagues and students to work successfully with it. The network participants are ICT experts that work at different departments (and locations). The aim of the network is primarily to share knowledge and new developments. Secondly, the network has the ambition to create awareness of the possibilities of ICT in educational activities and to explore all the options this development has.

6.3.5.7 Case 17: ROCMN network Design of curriculum activities and student citizenship

→ Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong
 Citizenship is a dominant issue in educational activities. Due to societal developments in the Netherlands, citizenship is seen as a crucial investment in education. The government has designated citizenship as a formal educational activity within all forms of vocational education. The aim of the network is to develop products to support teachers to work successfully with themes regarding citizenship. Citizenship needs to be intertwined within all professional activities for students of the ROCMN. The focus of the initiator is to develop a broad framework for students that also can be used as an assessment tool.

6.4 Findings of the case study networks

In this section the findings of the case studies are presented by describing the results based on the conceptual framework that is presented in Chapter 4.

6.4.1 Case 1: GGNet network Dealing with sexuality and intimacy

Table 6.1	Brief description of the GGNet network Dealing with sexuality and intimacy	
	<i>Background of the network</i>	<i>Description</i>
	Participants	Core group of around 40 participants including nurse practitioners, former patients, members of the family counsel and the patient counsel of GGNet.
	Invitation process of the participants	Through the informal network of the initiator and through an open invitation via e-mail.
	Objective of the network	Stimulate meaningful discussion about sexuality and intimacy and to design a strategic GGNet policy report dealing with sexuality and intimacy.
	Main activity of the network	Socratic dialogue with nurse practitioners and patients on sexuality and intimacy.
	Timeframe of the research activities and members of the research team	March 2008 – March 2009, studied by S. van der Veer & T. de Jong.

6.4.1.1 *Identification of network initiators and the urgent work-related question*

Sexuality and intimacy has been an urgent question for a long period within GGNet. The board of directors and the client board already identified sexuality and intimacy as a strategic objective to work on. On the other hand they realized that sustainable change within the organization could only take place when initiatives were identified and developed by nurse practitioners themselves. The top-down approach of GGNet that previously was adopted led to resistance from the nurse practitioners. For this reason the knowledge center of GGNet invited a senior nurse practitioner to work on the topic of sexuality and intimacy. She had already initiated several internal discussions on this topic and was in favor of a 'bottom-up' approach. The project coordinator proposed to organize several meetings based on the Socratic dialogue. The Socratic dialogue is a procedure in workshops that focuses on dialogue, meaningful interaction and investigating each other's belief systems. Every six weeks, during one calendar year, nurses, clients and other parties are invited to participate. There are two groups: the core-group consisting of participants the initiator personally invited, and an open group in which everybody is welcome. The initiator specifically asked to start only in the region of Apeldoorn. If the network resulted in success the plan would be to create more of these initiatives at different locations of GGNet.

6.4.1.2 *The structural dimension of the network Dealing with sexuality and intimacy*

The network is formed in two groups: the core group and the open group. The core group consists of members of the family board, the client board, former patients, nurse practitioners from two locations and a facilitator. The second group is the open group and consists of nurses from different locations, a member of the family board and client board and a facilitator. This group is open for anyone within GGNet (bonding, bridging and linking connections). On average the group consists of between 10 – 12 persons. There is no relevant difference in hierarchy.

6.4.1.3 *The relational dimension of the network Dealing with sexuality and intimacy*

Several network participants are very active within GGNet dealing with sexuality and intimacy questions. Three nurse practitioners did a schooling activity in which they carried out research within their own organization. Several of them interviewed colleagues about how to successfully deal with sexuality and intimacy or carried out a literature study on this topic. Also, the client board invested a lot of time to put the theme of sexuality and intimacy on the management agenda. A professional trainer facilitates the meetings, emphasizing at the beginning that the content that is discussed during the meeting is confidential and private. Also, the facilitator repeats the ground rules of the Socratic dialogue when the meeting starts. These ground rules

focus on stimulating an investigating perspective in order to understand other network participants. The rules include taking time to reflect on cases in order to better understand underlying mechanisms and not focusing on fast solutions but to create new space for ideas. The facilitator strongly emphasized the importance of interaction, curiosity and an investigative attitude. Members of the meeting reflect on this by mentioning that it creates a safe environment to ask questions, but to also bring in cases for discussion. When the meeting starts the members are invited to share a concrete example that they wish to discuss. The group then decides which case is most interesting to investigate. Members ask questions of each other and are curious how to deal with certain issues. The principles of the Socratic dialogue have the effect that the conversation focuses around deeper personal norms and values.

6.4.1.4 *The cognitive dimension of the network Dealing with sexuality and intimacy*

The members of the core group and the open group of the network work in different (organizational) backgrounds. Nurses have a different vocabulary than former patients or family members of patients. In general, former patients have fewer difficulties in describing a concrete case. In the beginning nurses find it difficult to use the same specific vocabulary, due to the sensitive content. After several meetings this got easier. This leads to a gradual development of shared language and specific shared stories. For instance, a case made it clear that sexuality and intimacy issues only need the specific interventions of a nurse when it harms further treatment of the patient. This case was then brought up again several times later as a reminder.

6.4.1.5 *Social learning processes*

All of the meetings follow the same process. The Socratic dialogue is used as a basis for discussion and interaction. An expert facilitates this process. First every member is invited to mention a case or situation he or she encountered in his or her work situation. The facilitator stimulates the other group members to ask questions until the situation or case is clear to them. Based on the cases, one or two situations are chosen by the group. The group then studies these situations by asking questions of the case-owner and each other. The facilitator facilitates this process by identifying norms or values of the group members and by looking for tension between them. This leads to a deeper discussion about personal norms and values. An example is that a nurse had difficulty accepting that a patient was able to hire a prostitute with his own healthcare budget and invite this person to his room. Based on the discussion the question deepened to: can you forbid someone the right to express himself sexually, although he or she is mentally ill?

6.4.1.6 *Knowledge productivity: improvements and innovations*

The management of GGNet has a strong ambition to innovate work and strategy cooperatively with its professional staff. In the past, top-down strategic management did not lead to the desired effect. For this reason the network on sexuality and intimacy was asked to reflect on the concept policy report on sexuality and intimacy at GGNet. A specific invitation was given to offer critical comments and feedback. In the beginning the network was reluctant to do so because they feared the same 'old behavior' of implementing a policy report would occur. After several meetings the network had acquired very useful insights and the energy to respond to the report was higher. Finally, the report was discussed in the group and several changes were suggested. Also, the initiator of the network arranged several meetings at different locations where nurse practitioners could practice and gain experience with the Socratic dialogue. The network was successful in making sexuality and intimacy open for discussion and dialogue with several parties within GGNet, such as patients, nurse practitioners and family. Finally, the network has realized several concrete results such as the increased use (or the creation) of guidelines as well as the nurturing of nurse practitioners who discuss sexuality and intimacy during intakes with patients. In addition, nurses mention they are aware of the importance of interaction with patients in order to open a conversation about it.

6.4.1.7 *Knowledge productivity: development of sustainable capabilities*

The network participants have acquired new capabilities to discuss intimate and difficult issues in healthcare. This is the case internally, within teams or departments and externally with clients and family. Network participants have fewer difficulties in addressing these kinds of questions. Nurse practitioners mention that their professional attitude has changed and that they now agree sexuality and intimacy should be an integral part of providing care.

6.4.1.8 *Interventions in the network*

First, interventions in the network aimed to bring all relevant stakeholders together. Patients, family and different nurses were invited to participate. Secondly, the facilitator of the meetings mainly carried out interventions, where the focus was to create a safe learning environment. This was done by fostering a curious and investigative attitude, by disapproving of blocking norms in the discussion and by repeatedly mentioning the principles of the Socratic dialogue. It is also worthwhile to mention that the insights of the meetings were put on a flipchart and later e-mailed to the participants. Finally, the outcome of the meeting was combined into a document and discussed with the board of directors. This led to several new small network initiatives in different regions of GGNet.

6.4.1.9 *Stimulating and inhibiting factors*

An initiator with interest and affinity in the organizational dynamics of sexuality and intimacy organized the network activities. The board of directors of GGNet identified sexuality and intimacy as a strategic objective to work on in 2008 and therefore expressed clear urgency to work on the topic. At the same time they gave the initiator freedom to organize a suitable process and expressed the ambition to explicitly work with nurses in day-to-day practice on this topic, without an ambitious deadline. There was time to experiment and work on policy-making ideas concerning sexuality and intimacy. The work activities in the network are organized around interaction and stimulating curiosity and an investigative attitude to each other's perspective. Also, the work activity aimed at bringing all relevant stakeholders together in a core group and open group.

Table 6.2 Within-site display of case 1: GGNet network Dealing with sexuality and intimacy		
Variables	Observed indicators in the case study	Rating
Initiator(s)	Sexuality and intimacy is a strategic objective of GGNet determined by the board of directors. A nurse practitioner initiated the network and invited members to participate.	++++
Urgent work-related question	How can nurse practitioners of GGNet deal with sexuality and intimacy issues with and among patients?	++++
Structural dimension	Bonding, bridging and linking connections based on an open group and a core group in the network.	Bo, Br, L
Relational dimension	Personal motivation of participants played a strong role in the network; focus on integrity, safety and investigative attitude during the meetings. The meetings are confidential and private. The same network participants attend all of the meetings, expressing that they like the interaction and climate. The network is visible within GGNet. A shared confidentiality agreement leads to a high level of trust.	++++
Cognitive dimension	Gradual development of a shared language. The network shared specific stories that occurred in the clinics. The members reflect that the network activities give them new vocabulary to interact with patients and colleagues on the topic. Network participants have a shared vision to achieve discussion and interaction on sexuality with patients.	+++

<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Social learning processes	Network participants ask questions of each other and are curious to understand other perspectives. Based on cases, network participants summarize each other's points and identify shared objectives and attention points. Clients and the family counsel experienced difficulty in participating but over time interacted more on the difficult topics.	++++
KP: improvements and innovation	Development of new guidelines, subject is included in the intake with patients, more discussions internally and externally plus the successful creation of a policy report.	++++
KP: sustainable capability to innovate	Discussing issues on sexuality and intimacy are part of the capabilities of nurses when dealing with patients.	++++
Interventions	Every meeting started by repeating the rules of the Socratic dialogue. Initiator invited all relevant stakeholders to participate. Facilitator encouraged asking questions, stimulating curiosity instead of discussing personal norms. 'Can you express your concern in a question to your colleague?' During activities, insights and conclusions were written down on a flipchart and later e-mailed to participants.	++++

6.4.2 Case 2: GGNet network Dealing with seclusion and reducing forms of restraint

Table 6.3 Brief description of the GGNet network Dealing with seclusion and reducing forms of restraint	
<i>Background of the network</i>	<i>Description</i>
Participants	Core group of 15 members including team managers from different department. The network closely worked with patients, families of patients and extramural nurses and doctors.
Invitation process of the members	The initiator invited participants through an open invitation via e-mail.
Objective of the network	Minimize solitary confinement and holding interventions. Develop new and innovative interventions to support this objective.
Main activity of the network	The network visited other regions, organized expert meetings, exchange programs and workshops.
Timeframe of the research activities and members of the research team	March 2008 – March 2009, studied by S. van der Veer & T. de Jong.

6.4.2.1 *Identification of network participants and the urgent work-related question*

Recent figures from the Dutch Inspection for Health Care reveal that in the Netherlands the use of the solitary confinement cell in psychiatric clinics is still increasing. The figures also show that the Netherlands strongly deviates from European countries in this practice: hospitals in the Netherlands use holding interventions more often than in other countries. Seclusion and restraining patients are extreme measures that are seen as a final intervention for the patient to secure personal safety. At the same time, seclusion and forms of restraint are part of daily healthcare: in the Netherlands, 18,000 solitary confinements are initiated each year. GGNet has the ambition to minimize solitary confinement. In 2006 GGNet initiated a project to improve healthcare for psychiatric patients, especially with regards to involuntary healthcare. When the project finished at the beginning of 2008, a group of team managers decided to continue to work on minimizing solitary confinement. This network of team managers and colleagues within GGNet who work with external parties such as patients and families are the unit of analysis in this case study.

6.4.2.2 *The structural dimension of the network Dealing with seclusion and reducing forms of restraint*

The core group of the network works at different hospitals in the Eastern region of the Netherlands. They regularly meet to exchange ideas and perspectives. Within their hospital the network participants work together with other local hospitals, (former) patients, families of patients, doctors and psychiatrists (bonding, bridging and linking connections). Also, they organize multi-disciplinary meetings to work on specific challenging cases.

6.4.2.3 *Relational dimension of the network Dealing with seclusion and reducing forms of restraint*

Network participants are proud of the achieved results during the project. The network has a strong ambition to continue to achieve innovative results to minimize seclusion and forms of restraint. Members also express the desire to be transparent and open to the patient, instead of excluding the patient in decision-making processes in the hospital. Respect, autonomy and working on the basis of dignity towards the patient are very important to the network participants. Network participants strongly identify with the network as being innovators of GGNet.

6.4.2.4 *Cognitive dimension of the network Dealing with seclusion and reducing forms of restraint*

The network has a strong ambition to collectively work on minimizing seclusion and forms of restraint. Meetings are organized at the location, for

instance together with patients and family to discuss difficult issues. Most interactions within the network focus on sharing experiences by telling stories. Network participants create and share specific abbreviations and codes. Also, the awareness of nurses to use already-existing team meetings to reflect on situations is strongly developed. Network participants mention the need for a logical structure during activities with patients to increase awareness and focus on the patient.

6.4.2.5 *Social learning processes*

A focal point of the learning processes within the network of seclusion and reducing forms of restraint is that they explicitly focus on the patient. This entails that during meetings a case of a patient is discussed in a multidisciplinary team or reflection group. Sometimes a patient is present during the discussion, so that learning takes place from as many perspectives as possible. Secondly, the meetings are held at the same time during the week in order to provide a clear structure for the patient and for the nurse. Structure and stability during the week is a key issue for the network to work on. The awareness of network participants of the need to stimulate feedback to colleagues or patients is a vital issue, and this is often practiced together with colleagues. A focus of the network is to discuss difficult patients or events by looking at the social system in which the patient operates. For instance, understanding the personal situation, looking at family, physical condition, medication history and experiences within the group of patients.

6.4.2.6 *Knowledge productivity: improvements and innovations*

First of all, the number of interventions that lead to solitary confinement has decreased dramatically within GGNet facilities. Focusing more on the specific improvements and innovations in this network, a few stand out. First of all, the network has eliminated several protocols within hospitals that are unsuccessful to use. Secondly, one of the hospitals opened a special sub department for short stays. This sub department has the objective to identify possible risks with patients at an early stage and offer them a safe environment to recover in order to return home again. Besides this, many employees followed training on safety and minimizing escalation techniques. An interesting improvement is the decrease in usage of medication and the increase of voluntary enrolment in training and schooling activities. The network developed a 'life-flow document' for intakes to identify specific risks or points of attention. Within all the hospitals the design of the multidisciplinary meetings is the central point on working on minimizing seclusion and forms of restraint. The objective of the multidisciplinary meetings is to work together with family, patients and other relevant parties to identify solutions on how to support the patient during the stay in the hospital.

6.4.2.7 *Knowledge productivity: development of sustainable capabilities*

Most of the patients that first come to the hospital have a complex clinical background. According to nurses and psychiatrists, it is never the same. Every patient that needs treatment can be seen as a new innovative question for a team of healthcare professionals. In this light, a number of developments are interesting to mention. First, there is an increased awareness of the need to include family, friends, general physicians and other perspectives when dealing with severe situations that could lead to solitary confinement. This awareness is an obtained capability, focusing on making contact with the patient and his or her social network at an early stage. This phase is described as observation and contact, which then can lead to diagnosis and treatment. This process is often included in the previously mentioned 'life-flow document' in which nurses write down critical incidents and activities of the patient that received treatment.

6.4.2.8 *Interventions in the network*

The network participants frequently worked together with nurses, doctors and psychiatrists. An important intervention was to invite participants specifically to let go of existing protocols or other inhibiting factors. The invitation was to identify new ideas and possibilities, not to remain boxed in the same restrictions.

6.4.2.9 *Stimulating and inhibiting factors*

The ambition of the network to innovate existing operating procedures concerning seclusion and forms of restraint had high priority within GGNet. First of all, because of an external urgency due to new legislation of the Dutch Inspection for Health Care. Secondly, due to internal urgency put forward by the board of directors, the network also had several members who worked at local hospitals. The dispersed network, consisting of team managers, created room for experimenting in several hospitals, which also created the opportunity to learn from different contexts.

Table 6.4 Within-site display of case 2: GGNet network Dealing with seclusion and reducing forms of restraint		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	External urgency due to changing legislation, internal urgency in the board of directors, a group of initiators within GGNet organized the network activities.	++++
Urgent work-related question	How can we minimize separation and solitary confinement of patients and develop other interventions to support this process?	++++
Structural dimension	Bonding, bridging and linking connections.	Bo, Br, L
Relational dimension	Network participants are proud of the achieved successes. Members identify with the topic of the network and feel strong ownership. Members express consensus on the urgency of the topic within GGNet. Transparency and openness are important characteristics of the network.	+++
Cognitive dimension	Network participants share specific stories of successes and failures from different clinics. A shared meaning is that the situation in the clinics is explosive and very urgent. Members share specific codes and abbreviations (e.g., MDO, extramural).	+++
Social learning processes	A shared perception is that they should focus more on the patient, open up and invite external perspectives and organize multi-disciplinary teams to invite different healthcare disciplines to learn from. A strong ambition to work on improvements and learn from each other was present. Learning activities focus on the interaction with the patient and reflection within the network to find healthcare alternatives to minimize separation and solitary confinement.	++++
KP: improvements and innovation	The network initiated new activities with collaborating parties such as family or former patients. Goals were a decrease in separation interventions, lower use of medication, start of multidisciplinary meetings to discuss problematic patients, initiative of former patients who frequently visit clinics and talk with the patients, experimenting with music and movement therapy. Use of a 'life-flow' document for intakes.	++++
KP: sustainable capability to innovate	Increased awareness of nurse practitioners to actively make contact with the patient and his or her surrounding environment. Awareness of exploring different options when dealing with patients. Nurses organize time to reflect on situations and invite different other professionals to participate.	++++
Interventions	Inviting the social network of the patient to support the healthcare process of the patient. Inviting patients in work meetings. Network participants act as moderators in meetings with patients and nurses.	+++

6.4.3 Case 3: API network Analyzing media findings

Table 6.5 Brief description of the API network Analyzing media findings	
Background of the network	Description
Participants	Group of 15 participants including civil servants of different ministries.
Invitation process of the members	An external facilitator of API invited participants of a previous training to participate in the network.
Objective of the network	To collect relevant expertise about analyzing media findings in order to design a professional development course.
Main activity of the network	The facilitator organized content-related workshops.
Timeframe of the research activities and members of the research team	November 2008 – April 2009, studied by E. Teeuwisse, C. Sprenger & T. de Jong.

6.4.3.1 Identification of network participants and the urgent work-related question

In this network a professional facilitator of API identified a group of civil servants from several departments that were curious to learn more about analyzing media findings. The facilitator decided to invite this group to a meeting in order to explore relevant questions. Based on this exploration, the initiator invited all participants of the formal learning activity to the network meetings. The initiator has no ambition to participate in the activities of the network besides facilitating the process of the meetings.

6.4.3.2 The structural dimension of the network Analyzing media findings

The participants of the network work at different departments in The Hague (bonding and bridging connections).

6.4.3.3 The relational dimension of the network Analyzing media findings

The members mention that the network meetings were not very energetic. The facilitator mentions that the participants were very content driven and preferably desired specific ready-to-use tools for analyzing media findings. Although the ambition of the facilitator was to design these tools together, the energy remained low. After three meetings the number of participants also dropped. Participants mention that they felt as if everybody had a different agenda in the network and that this did not lead to breakthroughs. Despite interventions of the facilitator to offer more content, the network quickly started to disintegrate.

6.4.3.4 *The cognitive dimension of the network Analyzing media findings*

Within the network participants felt that other members used many vague and fuzzy words and unclear language. For the facilitator, it was sometimes difficult to follow what they wanted and to make objectives explicit. The facilitator: 'In my belief the participants remain to be vague, despite the fact that they talk a lot about what should be important.' The participants within this network all have the same background and often have worked for several years as a civil servant in The Hague. Members were reluctant to discuss personal motives to participate and were fuzzy about the objective of the meetings. The network lacked a shared interpretation of a goal or direction to work on.

6.4.3.5 *Social learning processes*

In the beginning of the network meetings, the facilitator identified learning questions of the network participants. This led to several content-related questions. The facilitator then organized meetings in which presentations about analyzing media findings were given. Based on this content, a group discussion aimed at translating it into possible action. This was a slow process. Facilitator: 'It felt like they were lurkers, that they were just there for some new content. I really had a different ambition, to create something together.'

6.4.3.6 *Knowledge productivity: improvements and innovations*

Could not be observed in this case study.

6.4.3.7 *Knowledge productivity: development of sustainable capabilities*

Could not be observed in this case study.

6.4.3.8 *Interventions in the network*

Interventions in this network focused on facilitation of the network meetings, with the goal to determine the content and the agenda during the meetings and to facilitate interactions based on presentations during a network meeting. The initiator invited members of the ministries who he regarded as being appropriate for the meeting.

6.4.3.9 *Stimulating and inhibiting factors*

The network lacked a clear initiator with an urgent work-related question. Instead, the network desired to absorb new knowledge, which was picked up by a facilitator of API. The facilitator became responsible for the content. Without an initiator the activities within the network had a low energy. Also, the network participants were fuzzy about their ambitions and learning objecti-

ves. Members wanted to get knowledge and new insights, but did not want to invest in bringing in specific knowledge or insights.

Table 6.6		
Within-site display of case 3: API network Analyzing media findings		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	Facilitator of a training analyzing media findings suggested to the trainees to organize themselves in a network in order to learn from each other. The initiator did not take part in the network activities.	O
Urgent work-related question	A facilitator was hired to support the activities of the network. He identified the following question: How can we quickly analyze media findings in such a way that it supports our department?	O
Structural dimension	Bonding and bridging connections.	Bo, Br
Relational dimension	Low energy in the meetings. Members are reluctant to obligate themselves to activities in the network. Expectations of the network participants are low. Different agendas of participants and desire to get ready-to-use tools. Different and unclear motives to participate in the network.	O
Cognitive dimension	Network participants avoid discussing personal motives to participate and are fuzzy on the objective of the meetings. Members express the desire for specific tools that are easy to use. Network participants do not wish to create these tools together and do not see themselves as a sustainable network. Lack of a shared interpretation or objective.	O
Social learning processes	Activities focuses on the identification of learning questions. Based on these questions the initiator organizes several presentations on new media analyzing tools. This leads to a group discussion. The perception of the facilitator is that the members do not want to actively participate and are more interested in ready-to-use tools.	O
KP: improvements and innovation	The members and initiator do not identify improvements and innovations based on the urgent work-related question of the network.	O
KP: sustainable capability to innovate	The network case study offers no suggestions of an increased sustainable capability to innovate.	O
Interventions	The initiator sends invitations to network participants and facilitates the presentation and group discussion. Sometimes a report is sent afterwards to the members.	++

6.4.4 Case 4: API network Writing speeches a.k.a. The dead horse

Table 6.7		Brief description of the API network Writing speeches a.k.a. The dead horse
Background of the network	Description	
Number of participants	Group of 20 members including civil servants of different ministries in The Hague, speech writers of commercial organizations and freelancers.	
Invitation process of the participants	A subgroup already was active in an informal network. An external learning facilitator of API was invited to initiate the network and invite other members via e-mail and personal invitations.	
Objective of the network	To improve the quality of speeches and design criteria to be used in the process of writing speeches.	
Main activity of the network	The facilitator organized content-related workshops with a network member.	
Timeframe of the research activities and members of the research team	November 2008 – April 2009, studied by E. Teeuwisse, C. Sprenger & T. de Jong.	

6.4.4.1 Identification of network participants and the urgent work-related question

Speech writing has only been a paid job within the government for six years. Writing speeches is a highly creative process that requires specific expertise in the area at hand. Every speech is based on different circumstances and different context and thus demands a tailor-made text. Several speechwriters desired to share knowledge and new perspectives about writing speeches. Bad publicity led to the awareness of the speechwriters to professionalize themselves and learn from experiences. A group of speechwriters invited a facilitator of API to structure and facilitate the network meetings. The goal was to share knowledge and insight and to reflect on examples in order to be inspired to write better speeches. Specifically, network participants experience difficulty in working together with a client from a ministry or organization. The core group invited colleagues from their informal network, different departments and freelance professionals.

6.4.4.2 The structural dimension of the network Writing speeches

The network participants are invited through several informal networks of the core group of initiators. This varies from the communication departments of ministries, formal press instructors, policy makers, freelance writers

and speechwriters of companies such as Philips, Shell, Corus or the ANWB (bridging and linking connections).

6.4.4.3 *The relational dimension of the network Writing speeches*

Speechwriters show a strong identification with the craft of writing. The writers perceive it as a unique and creative process. The group members have a strong informal norm on what constitutes a good structure to write a speech. Feedback on speeches within the group was given based on specific norms and values. Members mention that it is difficult to discuss different norms or perspectives. Furthermore, in this context, the norms are not under debate. The network meetings are characterized by a somewhat reactive modus. Some speechwriters gain significant status due to their reputation and experience in the field. This dominant status results in a group that is reluctant to share uncertainties, failures or difficulties. Feedback was always directly given, sometimes without a sense of process or awareness of the other individual.

6.4.4.4 *The cognitive dimension of the network Writing speeches*

The group shared specific codes and abbreviations that are common for speechwriters. The network adopted the name ‘The dead horse,’ because previously it was very difficult for speechwriters to organize activities as a group. The shared informal norm on the quality of speeches (see the relational dimension) results in a specific vision or interpretation of a quality norm shared by the members.

6.4.4.5 *Social learning processes*

The group used specific examples of speeches as input for their meetings. These examples would then be analyzed (often by the experts of the network) and based on that feedback would be given. Also, speeches of the network participants were used as input often leading to lively and fierce discussions about the quality of the texts. Finally, external experts were invited to share their best practices. One of the network members sometimes inhibited interaction due to his extensive experience. The group analyzed new input and collectively reflected on it. A highlight of the network was a trip to Washington DC to work on framing techniques in speechwriting.

6.4.4.6 *Knowledge productivity: improvement and innovations*

The network initiated the launch of a three-day training for speechwriters. They also designed an online speech coach, a digital aid that enables participants to give online feedback to each other on speeches. Other activities the network realized to stimulate knowledge exchange include a trip to Washington DC, several meetings with Dutch universities to learn from lan-

guage scientists and reflection meetings to stimulate feedback and interaction between speechwriters of different departments.

6.4.4.7 *Knowledge productivity: development of sustainable capabilities*

The members of the network speechwriters mention that they have adopted a new way of working when crafting a speech. This technique is called framing. It enables the writer to design a clear structure, avoid clichés and make the speech more authentic. Also, the network participants mention that they are more aware how to cooperate successfully with their clients in the ministry.

6.4.4.8 *Interventions in the network*

The facilitator explicitly did not intervene on the content during the network meetings. This is because the network participants are expert minded and do not appreciate the interventions of a novice. The facilitator focuses on structuring the process during meetings and to create a clear structure. Also, he organizes the meetings together with one of the network participants. Eventually the network has become visible in the ministries, which has led to organizing management support from different ministries to initiate professional training activities.

6.4.4.9 *Stimulating and inhibiting factors in the network*

The facilitator of API (who was invited to facilitate the network) explicitly did not intervene in the content of the network. The network participants are invited through the strong informal network of speechwriters within the ministries. An important social factor within the network was the shared norm of what constitutes a good speech. Especially, one network member is a renowned speechwriter who often gives direct and blunt feedback. Within the network this led to reluctance to ask questions and openly discuss problems or challenges. The facilitator mentions that this sometimes restricted the learning process between the members.

Table 6.8		Within-site display of case 4: API Network Writing speeches a.k.a. The dead horse
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	A group of speechwriters identified an ambition to exchange best practices. Activities started when several bad speeches led to criticism in the news. The initiators invited a facilitator to support and organize the activities.	++++
Urgent work-related question	When you are invited as a speechwriter to write a speech for a public figure, such as a minister or CEO, what process and structure is necessary to write a good speech?	+++
Structural dimension	Bridging and linking connections.	Br, L
Relational dimension	Members show strong identification with the group. Speechwriting is perceived as a unique and creative craft. Participants are reluctant to share failures or uncertainties; one expert in the network has a high impact on the interaction. Feedback is normative and directly given to each other in the network meetings.	++
Cognitive dimension	Strong norm on what is a good or bad speech. Explicit shared interpretation on good speechwriting. Shared interpretation of norms (speech A is bad and speech B is excellent). Norms are not under debate.	+++
Social learning processes	The network uses recent speeches as input for the network meetings. Sometimes external experts are invited to participate. The speeches are used as input for group discussions. Interaction is content driven and members participate actively. One of the members sometimes inhibits interaction and discussion on examples due to his extensive experience.	+++
KP: improvements and innovation	Launch of a training activity. Design and implementation of an online speed coach to support speechwriters. Exchange visits to the U.S. and several universities.	++++
KP: sustainable capability to innovate	Adoption of a new procedure to design a speech (called framing). Awareness of need to successfully cooperate with the client has increased.	+++
Interventions	Facilitator explicitly did not intervene in the content of the meeting. Facilitator structures the meetings, organizes the location, issues invitations and invites external guests together with a network member.	++

6.4.5 Case 5: API network Language in texts

Table 6.9 Brief description of the API network Language in texts	
Background of the network	Description
Number of participants	Group of 40 participants including civil servants from different communication departments of ministries.
Invitation process of the participants	A facilitator of a previous training on language in texts invited the network participants to a first network meeting.
Objective of the network	To exchange initiatives in order to create a common learning platform and improve the quality of language in texts.
Main activity of the network	Meetings to discuss new developments in texts.
Timeframe of the research activities and members of the research team	November 2008 – April 2009, studied by E. Teeuwisse, C. Sprenger & T. de Jong.

6.4.5.1 Identification of network participants and the urgent work-related question

Before the network activities started, most of the members followed training about text writing. The trainer of the course suggested bringing the members together in order to exchange possible activities and to learn from each other. The trainer did not participate in the network and invited a facilitator of API to structure the meetings. The research activities could not identify an urgent work-related question.

6.4.5.2 Structural dimension of the network Languages in texts

The majority of the network is active in communication departments in various ministries (bonding and bridging connections).

6.4.5.3 Relational dimension of the network Languages in texts

The network participants are not very active during the meetings. Events that are organized focus on presentations from experts, followed by a discussion. The facilitator reflects that the network participants are not very energetic and lack a sense of urgency and personal interest to participate.

6.4.5.4 Cognitive dimension of the network Languages in texts

The shared interpretation within the network focuses around getting relevant information during a meeting. The visible interaction during the network meetings circled around discussing vague topics. The participants did

not desire to organize meetings themselves and made explicit that obtaining new and relevant information is the most suitable aspect to focus on.

6.4.5.5 *Social learning processes*

The network facilitator organizes presentations. The insights are discussed in the network. Participants ask questions and the facilitator structures the discussion.

6.4.5.6 *Knowledge productivity: improvements and innovations*

Could not be observed in this case study.

6.4.5.7 *Knowledge productivity: sustainable capacity of the network*

Could not be observed in this case study.

6.4.5.8 *Interventions*

The facilitator organizes the meetings, invites participants and structures the discussion and interaction. Afterwards a newsletter is made and sent to the departments of the network participants.

6.4.5.9 *Stimulating and inhibiting factors in the network*

The network lacks a clear initiator with an urgent work-related question. The network participants have unclear motives to participate. Members are reluctant to invest time in preparing network meetings. Members show a passive attitude, which translates into the ambition to only get knowledge and not bring it into the network.

Table 6.10 Within-site display of case 5: API network Language in texts		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	The facilitator of a previous training suggested coming together in a network to share knowledge and learn from each other. The trainer did not take part in the activities.	O
Urgent work-related question	The research activities could not identify an urgent work-related question within the network.	O
Structural dimension	Bonding and bridging connections.	Bo, Br
Relational dimension	Members experienced a lack of energy during the activities. Activities circled around discussions. Members were very reluctant to invest time and effort in the network outside the network meetings. The members had unclear motives to participate in the network and were unaware of any ambition of their members.	+
Cognitive dimension	The shared interpretation in the network is to share and collect relevant information and knowledge on improving the quality of language in texts. No direction in the network to realize a specific result or work towards a shared ambition has been formulated.	+
Social learning processes	The network facilitator organized presentations. The insights were discussed in the network. Participants asked questions. The facilitator coordinated the discussion.	+
KP: improvements and innovation	The members and initiator do not identify improvements and innovations based on the urgent work-related question of the network.	O
KP: sustainable capability to innovate	The network case study offers no suggestions for an increased sustainable capability to innovate.	O
Interventions	Facilitator structured the meetings, invited participants, planned meetings and worked out the results of the network meetings by means of a newsletter.	++

6.4.6 Case 6: LLA network Career development

Table 6.11 Brief description of the LLA network Career development	
Background of the network	Description
Number of participants	Group of around 12 members including teachers from different schools and members of Leisure organizations in Limburg.
Invitation process of the participants	Facilitators of the project organized an informal conference at which the network was formed.
Objective of the network	Design the structure and criteria for a center that is responsible for the orientation, screening and intake of future Leisure students in Limburg.
Main activity of the network	Design workshops at different locations in Limburg.
Timeframe of the research activities and members of the research team	September 2008 – April 2009, studied by C. Ehlen & T. de Jong.

6.4.6.1 Identification of network participants and the urgent work-related question

The center of career development is part of the design phase of the LLA. In this project nine schools and ten organizations in Limburg are active. During the kick-off conference the coordinators presented the objectives, ambition and timeframe of the project. The coordinators have already identified three important design parts: one is the center of career development. After spending informal time to get to know the participants and Leisure colleagues, the initiators invited the participants to choose a group. The initiator has a strong drive to innovate the leisure sector. The urgent work-related question focused on design of criteria and content for a center that is responsible for the orientation of students, screening and intake for the LLA.

6.4.6.2 Structural dimension of the network Career development

The group consists of a mix of VMBO teachers, MBO teachers, HBO teachers and members of two Leisure organizations (bridging and linking connections). Some of the teachers are also staff coordinators and have experience with educational innovation. One network member is part of the group that initiated the LLA project.

6.4.6.3 *Relational dimension of the network Career development*

The network meetings are facilitated by one of the first initiators of the LLA project. Members find him charismatic, and he stimulates openness and equality between network participants. Hospitality is an important criterion during the meetings. Every meeting has drinks and pie (a Limburg speciality). Every meeting is held at the location of one of the network participants. Some of the members carpool together. Network participants mention a 'we' feeling, specifically to design something unique and special for the future of the leisure business in Limburg. In the beginning the meetings focus on creating a shared perspective together that can be used as a starting point for the design of the center for career development.

6.4.6.4 *Cognitive dimension of the network Career development*

The network had initial difficulty in understanding each other's vocabulary. Members of Leisure organizations are unfamiliar with educational terms and abbreviations. This has led to a strong desire for informal exchange. The network organizes the meetings at locations where the members work. A guided tour is organized on location and they lunch together. Most of the actual design work for the center for career development is done individually and not during the meetings. The network meetings are an opportunity to discuss the progress and ideas and reflect on difficulties. Members experience enthusiasm to design the center for career development, mainly because they see the importance of designing a new curriculum for the leisure sector in order to overcome the lack of qualified staff.

6.4.6.5 *Social learning processes*

A majority of the activities in this network focus on exchanging knowledge and experience. These activities lead to the awareness of so-called knowledge gaps. Based on these gaps, the network participants individually search for relevant literature, cases within their own organization or other relevant topics. During the network meetings activities focus on the conceptual design of the center for career development. In the beginning of the network activities the design process is pragmatic. Questions during the meetings are: What needs to be done now? Which steps are relevant? The objective of the LLA is to design an innovative educational center, but the network has the tendency to focus on inhibiting factors within their own organization. There is insecurity about the networks' development room.

6.4.6.6 *Knowledge productivity: improvements and innovations*

The network is successful in tracing new information sources. Based on these sources and network meetings they identify design principles for the center of career development. This leads to a precise definition of what career development entails within the LLA. The network identifies specific restraints in the design process and invites experts to reflect on it. This leads to the design principles and a rough structure that serves as conceptual design for the activities of the center for career development.

6.4.6.7 *Knowledge productivity: development of sustainable capabilities*

The initiators of the LLA see that the mentality of the network participants has changed. Attitude and willingness to innovate has increased, mainly due to the ambition to work towards a common goal. The network participants have developed themselves through the process of analyzing relevant information.

6.4.6.8 *Interventions*

During the first network meeting the interventions focused on facilitating interaction and exchange of personal motivation and ambitions between the members. An important facet is organizing activities on different locations. The facilitator also structured the meetings by writing on a flipchart and by summarizing frequently. After several plenary meetings, it was suggested to work in subgroups on specific topics. The facilitator also focuses on creating awareness on the difference in expertise in education.

6.4.6.9 *Stimulating and inhibiting factors in the network*

The initiator of the LLA is part of the network. There is a strong curiosity to visit each other's work locations. Every meeting starts with drinking tea and coffee and eating pie (a speciality of Limburg); the network frequently exchanges personal motivation to participate in the network. An inhibiting factor is the difference in vocabulary between the network participants. Some abbreviations, codes or words lead to frequent difficulties during the meetings.

Table 6.12		
Within-site display of case 6: LLA network Career development		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	One of the initiators of the Leisure Academy (with a government subsidiary) participated in this network. The initiator has a strong drive to innovate the Leisure sector in Limburg. The network was composed during a kick-off meeting. The initiator already informally invited several participants.	++++
Urgent work-related question	The network adopted the central ambition of the Leisure Academy in a meeting in the following question: What does the design and criteria for the screening and intake for students in the LLA look like? What kinds of design criteria are necessary?	+++
Structural dimension	Bridging and linking connections.	Br, L
Relational dimension	Specific attention in the network to create an open and equal environment to work in. Network participants find it important to have fun during the meetings. The expectations of network participants to innovate the Leisure sector are high. Members mention strong identification and collective feeling in the network.	++++
Cognitive dimension	Initial difficulty in understanding each other's vocabulary. Informal exchange to stimulate perspectives and ideas. Enthusiasm to create the new Leisure Academy. Shared ambition to innovate the Leisure sector to better professionalize young students.	+++
Social learning processes	Meetings focused on the exchange of knowledge and experiences. The network created a conceptual design and worked in subgroups on topics. Meetings focused on discussing relevant input and working on the conceptual design together.	+++
KP: improvements and innovation	Successful in tracing new and relevant information and interpreting this in order to identify existing barriers. Creation of the rough structure of the center for career development.	+++
KP: sustainable capability to innovate	Attitude and willingness to innovate has increased. Network participants have developed themselves in analyzing and designing educational activities.	+++
Interventions	Facilitator stimulated making personal motivation and ambition of the network participants explicit. Network meetings were held at different locations. Facilitator stimulated working in subgroups.	+++

6.4.7 Case 7: LLA network Learning in the LLA

Table 6.13 Brief description of the LLA network Learning in the LLA	
Background of the network	Description
Number of participants	Group of around 20 members including teachers from different schools.
Invitation process of the participants	Facilitators of the project organized an informal conference in which the network is formed.
Objective of the network	Design an innovative structure for a learning environment within the LLA.
Main activity of the network	Design workshops and plenary meetings.
Timeframe of the research activities and members of the research team	September 2008 – April 2009, studied by C. Ehlen & T. de Jong.

6.4.7.1 Identification of network participants and the urgent work-related questions

The goal of this network is to design a learning environment that supports the professional development of the student during his or her time with the LLA. The focal point is that the learning activities are based on work activities and designed in collaboration with the workplace supervisor, teacher of the LLA and the student. The ambition is to design a structure of a learning environment that can be adapted to the majority of MBO and bachelor Leisure courses. The network participants are selected during a kick-off meeting, along with a facilitator.

6.4.7.2 Structural dimension of the network Learning in the LLA

Participants in the network are teachers at different schools, at different levels: VMBO, MBO and HBO (bonding, bridging and linking connections). The schools are also competitors of each other. Within the network there are no participants of commercial LLA organizations.

6.4.7.3 Relational dimension of the network Learning in the LLA

The interaction during meetings is strongly content related. Participants have lively discussions about successes in their own organization. The discussions about the design of the LLA focus on the difficulties and constraints of the innovation process. The network participants feel that the network lacks

members that can exert influence. Quote: ‘If we do not work together with the decision makers, all of our ideas are not worth a dime.’ In the beginning the meetings are organized at different locations, but after four meetings this stops. The facilitator feels the network participants do not acknowledge other members’ expertise. Some of the members are easily distracted during meetings or do not arrive on time. A lot of energy is spent on determining the innovation space the network has based on the vision document on the Leisure Academy.

6.4.7.4 *Cognitive dimension of the network Learning in the LLA*

The shared interpretation of the network is that the content should precede the design. Also the network participants express concern that the design they create will not be implemented because of the lack of management members in the network. The network facilitator all work as teachers, and thus have strong developed vocabulary with abbreviations, terminology and codes. Between the different levels of education this leads to fuzzy communication. For instance several members have a different understanding of what is determined as an obtained competence. The willingness and urgency to create a new LLA education is very high among the members. This is due to the awareness that the different schools are not all successful in keeping the students as clients until they graduate.

6.4.7.5 *Social learning processes*

The interaction of the participants focuses on determining barriers and obstacles within the LLA project. These obstacles are further explored and it often leads to future activities in subgroups to figure out how to go around the issue or obstacle. The interactions during the meetings focus on exploring different network participants perspectives. There is a specific agenda during the network meetings. The discussion often concentrates on an organizational level (‘How does a VMBO school look at that?’). The meetings are organized as plenary sessions. The network participants reflect on the meetings by stating that they have not learned anything new.

6.4.7.6 *Knowledge productivity: improvements and innovations*

The network has made a flow chart of the learning process of a LLA student. The network has identified relevant information sources, such as portfolios and external curricula designs as a basis for their design. Based on the flow-chart, the network identified learning objectives.

6.4.7.7 *Knowledge productivity: development of sustainable capabilities*

Could not be observed in this case study.

6.4.7.8 *Interventions*

The interventions during the network meetings focused on structuring the discussion, for instance by using a flipchart, by facilitating the discussion, or by working with a timeframe. The initiator of the network explicitly intervened based on the content of the meeting and the procedure that was planned. After four meetings the structure of the meeting changed: more focus on working in sub teams, and writing down issues that the network found difficult to answer. That enabled the participants to write down questions and continue the meeting.

6.4.7.9 *Stimulating and inhibiting factors in the network*

Network participants mention that they are put forward to participate in the network by the organization they work for. Network meetings focus on identifying obstacles and difficulties in designing the LLA learning activities. Members question the success of the project. Different language and vocabulary sometimes leads to frustration during the meetings.

Table 6.14 Within-site display of case 7: LLA network Learning in the LLA		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	A group of Leisure professionals initiated the design of the Leisure academy. Members of the LLA learning network were selected in a kick-off meeting based on their interest in the learning activities of the Leisure academy. None of the initiators are part of the network learning in the LLA.	+
Urgent work-related question	The invitation to the network participants of learning in the LLA is to explore the design question: What does the structure of the learning activities within the LLA look like? The question does not originate from the network itself.	0
Structural dimension	Bonding, bridging and linking connections.	Bo, Br, L
Relational dimension	Strong content-related interaction, focus on exchanges is on successes in their own organization. Limited appreciation for each other's input. Energy in meetings is put into determining obstacles in the project. Network participants disagree on the focus of the network and the necessary activities.	+
Cognitive dimension	Shared interpretation within the network that the content should precede the design of the LLA education. Fuzzy communication with a lot of abbreviations, codes and difficult vocabulary to follow for members. Members frequently mention that they lack the necessary knowledge to succeed.	+
Social learning processes	The interactions focused on determining barriers and obstacles in the LLA project. Network meetings are held as plenary sessions. Members argue about the design and content and often disagree on relevant input and output. Members reflect that they have not learned anything new.	0
KP: improvements and innovation	Identified new relevant information and determined a flow chart for the future activities in the network.	+
KP: sustainable capability to innovate	The network case study offers no suggestions of an increased sustainable capability to innovate.	0
Interventions	Interventions aimed at clarifying questions and on giving more structure to the meetings. A network member made notes and sent it to the network participants. Facilitator was hesitant to intervene during discussions and mentions she lacks the necessary experience.	+

6.4.8 Case 8: LLA network Qualification, testing and assessment

Table 6.15 Brief description of the LLA network Qualification, testing and assessment	
Background of the network	Description
Number of participants	Group of around 12 members including teachers from different schools and members of Leisure organizations in Limburg.
Invitation process of the participants	The facilitator of the project organized an informal conference in which the sub network was formed.
Objective of the network	Design the qualification framework, for the future Leisure Academy.
Main activity of the network	Design workshops and working in small groups.
Timeframe of the research activities and members of the research team	September 2008 – April 2009, studied by C. Ehlen & T. de Jong

6.4.8.1 Identification of network participants and the urgent work-related question

The objective of the network is to design the qualification framework for the future Leisure Academy. The network has the objective to design a framework that identifies competence development of students by expert assessors from both the school and a commercial organization. This should lead to a certified qualification structure for VMBO, MBO and bachelor level. A kick-off meeting resulted in the composition of the network. Within the network, one of the first initiators of the LLA is active.

6.4.8.2 Structural dimension of the network Qualification, testing and assessment

Two members are employees in a commercial leisure organization in Limburg. One of them is the initiator of the LLA project. Also, 1 VMBO, 3 MBO and 1 HBO teacher are active in the network (bridging and linking connections).

6.4.8.3 Relational dimension of the network Qualification, testing and assessment

The group is used to organizing meetings at different locations. Members are very proud of their profession; this is visible for instance in that they personally give visitors a tour through the organization. Besides this, a lot of attention is given to new developments in the leisure business. They give away free tickets for the zoo or other activities that are offered by the network

participants. Network participants are impatient about progress and want to make concrete steps.

6.4.8.4 *Cognitive dimension of the network Qualification, testing and assessment*

The network participants have a strong developed informal social network in Limburg and knew each other already beforehand. During network meetings the participants often share stories about developments within the region. The network participants express that they are worried about the next steps that the LLA project will make. They feel the activities and planning offer too little time to really innovate the qualification structure. The network participants are reluctant to visit other schools to learn from them. Due to a shared belief that the content precedes the design, it is difficult to explore innovative qualification designs.

6.4.8.5 *Social learning processes*

Most of the activities circle around exchanging best practices. Often one of the network participants gives a presentation. The presentation provides input for the design of the qualification structure. Collecting information and designing the qualification structure is perceived as two different activities within the network. The facilitator of the network stimulates plenary discussions in the group. The network activities are not based on a specific structure, nor does the facilitator of the network decide on a specific goal or ambition in advance.

6.4.8.6 *Knowledge productivity: improvements and innovations*

The network created design principles for the operationalization of the project plan. Also the network was successful in locating specific information about qualification structures. Finally, the network designed sub products and a planning for the design of the qualification structure of the LLA.

6.4.8.7 *Knowledge productivity: development of sustainable capabilities*

Could not be observed in this case study.

6.4.8.8 *Interventions*

The initiator of the network facilitates the network activities. This is done by providing the meetings with a clear structure and by giving necessary input (relevant documents, articles, etc.). The initiator focuses on interaction within the group and appreciating everybody's input. The initiator has the tendency to take a lot of time by giving input: strong focus is on the end result.

6.4.8.9 *Stimulating and inhibiting factors in the network*

The network participants have from a young age been active in the leisure sector in Limburg. They are proud of their profession, and moreover on the

new initiative of the LLA. Members have a strong informal social network in the province of Limburg.

Table 6.16		
Within-site display of case 8: LLA network Qualification, testing and assessment		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	One of the initiators of the design of a Leisure Academy (with a government subsidiary) participated in the network. The network participants were selected to join the network during a kick-off meeting.	++
Urgent work-related question	The relevant question of the network is adopted from the initial project plan and has not been developed further by the network: What does the design of the qualification, testing and assessment within the LLA look like?	+
Structural dimension	Bonding, bridging and linking connections.	Bo, Br, L
Relational dimension	A lot of attention is given to new developments in the Leisure Academy. Members organize meetings after each other and give tours in their organization. Although expectations in the network are sometimes unclear, members trust each other and are proud and willing to work together.	+++
Cognitive dimension	Members are very proud to work in Leisure. There is a strong informal network in Limburg that the members use in the project. Members feel that the design steps of the Academy are going too fast and will not lead to radical different schooling activities. They feel the shared vision on the structure of the network qualification, testing and assessment is unclear.	++
Social learning processes	Exchanging best practices. Collecting information for the design of the qualification structure, plenary discussion in the group. Interaction is based on personal opinions and norms. These often lead to debate or disagreement.	+
KP: improvements and innovations	Network created design principles for operationalization of the Leisure Academy.	+
KP: sustainable capability to innovate	The network case study offers no suggestions of an increased sustainable capability to innovate.	O
Interventions	Initiator is the facilitator of the network and focuses on content-related interventions. Uses a lot of time on his own behalf to give structure and focus to the end goal. The facilitator does not work with specific procedures. Meetings are plenary and based on discussion.	+

6.4.9 Case 9: ICCO network Co-responsibility and ownership

Table 6.17 Brief description of the ICCO network Co-responsibility and ownership	
Background of the network	Description
Number of participants	Group of around 15 members that work at the same department within ICCO.
Invitation process of the participants	The initiator invited all colleagues from her department via e-mail, some through personal contact.
Objective of the network	To create an approach for community-building programs.
Main activity of the network	Case presentations and plenary discussion.
Timeframe of the research activities and members of the research team	April 2008 – January 2009 Studied by M. Smit & T. de Jong

6.4.9.1 Identification of network participants and the urgent work-related question

The objective of the network is to create a suitable approach to develop community-building programs in the region in cooperation with local partners. Co-responsibility and ownership is one of the strategic objectives to work on within ICCO. The initiator of the network was invited to facilitate the network, and she then invited all the colleagues of two departments via e-mail.

6.4.9.2 Structural dimension of the network Co-responsibility and ownership

The network consists of around 15 participants, all from the same department (bonding connections). The network participants all work in subprojects on co-responsibility and ownership.

6.4.9.3 Relational dimension of the network for Co-responsibility and ownership

The expectations within the network strongly focus on determining the organizational norm in working with co-responsibility and ownership. Members feel insecure in carrying out work-related tasks and have the perception the necessary answers will be presented in the network meetings. The visible behavior within the network focuses on checking if personal ideas of co-responsibility and ownership are aligned with the organizational objective. As this was not clear, participants began to feel uneasy and increasingly worried what kind of direction ICCO is going towards.

6.4.9.4 *Cognitive dimension of the network for Co-responsibility and ownership*

Discussions within the network often are about the role ICCO should play in the discussion. According to a member of the network: ‘Activities in this network take a lot of my time; I think ICCO should decide what direction co-responsibility and ownership should take, then we can move ahead.’ Members have difficulty in understanding each other’s motives to participate in the network. This often leads to discussion and irritation. Also, during meetings, there is strong ambition of the network participants to first create a common ground perspective on co-responsibility and ownership.

6.4.9.5 *Social learning processes*

The meetings of the network used to be based on the presentation of a case. Followed by the case presentation a discussion was facilitated. Often the questions were aimed at testing a personal opinion (e.g., ‘In my opinion you should only work with partners that also financially invest in the project, isn’t that true?’). Interaction and discussion focused on the organizational level, less on personal learning questions. Cases would very quickly be abstracted to this organizational level, avoiding individual beliefs, perspectives or norms. Members have difficulty in expressing individual uncertainties or questions.

6.4.9.6 *Knowledge productivity: improvements and innovations*

Could not be observed in this case study.

6.4.9.7 *Knowledge productivity: development of sustainable capabilities*

Could not be observed in this case study.

6.4.9.8 *Interventions*

The facilitator designs and organizes the meetings. During the meetings the focus lies in actively intervening to stimulate members to ask open-ended questions. Secondly, the facilitator would often ask for a ‘time out’ to reflect on the process.

6.4.9.9 *Stimulating and inhibiting factors in the network*

The network activities strongly focus on identifying the organizational norm when dealing with co-responsibility and ownership in future projects. There is a focus on the organization, though not as much as on the individual members in the network. Network participants mention this as an inhibiting factor to learn from each other.

Table 6.18		Within-site display of case 9: ICCO Network Co-responsibility and ownership
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	Initiator is an expert on co-responsibility and ownership. The initiator invited participants through an open e-mail invitation. The initiative to work on co-responsibility and ownership questions is an organizational initiative.	+
Urgent work-related question	The initiator formulated the following question: What is a suitable approach in developing community-building programs with local partners? The network did not organize activities to further explore the relevance of the question.	+
Structural dimension	Bonding connections.	Bo
Relational dimension	Interaction focused on identifying the organizational norm of co-responsibility and ownership. The network participants felt uneasy and were increasingly worried about the strategic direction of ICCO. Interaction aimed at checking if personal ideas about co-responsibility aligned with the organizational strategy.	+
Cognitive dimension	The network had difficulty in understanding personal motives of members to participate. Discussions would often lead to irritation and communication fuzziness. Interpretation of conclusions in network activities varied between the members.	O
Social learning processes	Presentations of cases would lead to a discussion within the group. Interaction focused on the organizational level.	+
KP: improvements & innovation	The members and initiator do not identify improvements and innovations based on the urgent work-related question of the network.	O
KP: sustainable capability to innovate	The network case study offers no suggestions of an increased sustainable capability to innovate.	O
Interventions	The facilitator stimulated members to ask open-ended questions and took time-outs to reflect on the process.	+

6.4.10 Case 10: ICCO network Democratization

Table 6.19 Brief description of the ICCO network Democratization	
Background of the network	Description
Number of participants	Group of around 15 members including members of the same department within ICCO.
Invitation process of the participants	The initiator invited participants through an open e-mail invitation in one department.
Objective of the network	The initiator and the network participants have different urgent work-related questions. The initiator aims to focus on: Design an approach to work with partners on democratization issues and determine successful interventions to stimulate cooperation with partners. And the network participants focus on: What kind of democratic process does ICCO aim to stimulate?
Main activity of the network	Presentation of cases and plenary discussion.
Timeframe of the research activities and members of the research team	April 2008 – January 2009 Studied by M. Smit & T. de Jong

6.4.10.1 Identification of network participants and the urgent work-related question

Democratization is one of the subthemes within the department process of democratization and peace building. Still it remains a difficult concept to grasp for colleagues. During an exploratory meeting with a strategic network within ICCO, several questions are identified: What kind of democratization process does ICCO desire to stimulate? How can we improve our approach? On what level can one intervene? The first meeting with network participants focused on an organizational level, emphasizing clarity on the role of ICCO. After two meetings the focus shifted to a more personal ambition: What interventions can I as a professional use to support the process of working on democratization projects with partners in the region? During the network activities the urgent work-related question remains unclear for the researcher.

6.4.10.2 Structural dimension of the network Democratization

All the participants of the network come from the same department within ICCO (bonding connections).

6.4.10.3 *Relational dimension of the network Democratization*

The network participants feel insecure about their role as professionals within ICCO. They complain about the lack of clear directions from management. This leads to a lot of negative discussion. At the same time, network participants do not want to miss this network opportunity. During meetings participants interrupt colleagues. Some talk with their neighbor, scarcely interacting with the group. The network group also desires to hire an expert, because they feel that the necessary knowledge is not present in the network. There is a strong desire for theory explanation, at the same time this leads to heavy debate based on personal experiences.

6.4.10.4 *Cognitive dimension of the network Democratization*

The network participants frequently express the desire to gain clarity on the definition of democratization. A quote from a participant: ‘First we must work on the definition of democratization. If we don’t agree on that, I will stop participating.’ The shared belief is to first learn from an expert on democratization and to ask the management to be clear. In general, network participants are skeptical whether they are successful in developing new ideas or perspectives on democratization. Members express different interpretations of the network objective.

6.4.10.5 *Social learning processes*

The initiator organized the meeting. In some cases the initiator gives a presentation of relevant theory and experiences. The discussion is content-driven and theoretical. After several meetings the group would analyze cases based on a conceptual framework they had agreed on. The network participants experience the interaction during discussions as normative. Participants keep a distance between general theory and their personal learning ambition or questions. The facilitator feels she is individually responsible for the process, content and success of meetings. Participants react to questions, but do not agree to support the organization of the next meetings or work out ideas or comments and share them on the wiki page of ICCO.

6.4.10.6 *Knowledge productivity: improvements and innovations*

Could not be observed in this case study.

6.4.10.7 *Knowledge productivity: development of sustainable capabilities*

Could not be observed in this case study.

6.4.10.8 *Interventions*

Interventions in the network are predominately made by the initiator of the network. The focus lies on stimulating open questions, to investigate other perspectives and to translate theory to practice. Interventions of the network participants would generally be for suggesting another procedure or objective during the meeting.

6.4.10.9 *Stimulating and inhibiting factors in the network*

The network participants are all members from the same department. This lack of a fresh external perspective has led to reoccurring complaints within

Table 6.20 Within-site display of case 10: ICCO network Democratization		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	The initiator invited participants from her own department. Initiator is considered an informal expert within ICCO on democratization. The initiative to work on democratization questions is an organizational initiative.	+
Urgent work-related question	The work-related question shifted during the network meetings. The resulting question is a general enquiry aimed at exploring what aspects of democratization ICCO wants to stimulate in development projects in Third World countries.	+
Structural dimension	Bonding connections.	Bo
Relational dimension	Insecurity between members about their roles as professionals. Negative discussion about the strategic importance of democratization. Interaction is often interrupted, a lot of talk among subgroups during plenary discussion.	+
Cognitive dimension	Shared interpretation is that management should answer the questions that are asked in the network. Network participants share different objectives that the network should aim for. Members interrupt each other and do not have a shared interpretation about the goal and objective of the network.	+
Social learning processes	The interaction in the network activities focuses on discussing relevant theory on democratization. Members do not let each other finish sentences or disagree strongly about initiatives.	+
KP: improvements & innovation	The members and initiator do not identify improvements and innovations based on the urgent work-related question of the network.	O
KP: sustainable capability to innovate	The network case study offers no suggestions of an increased sustainable capability to innovate.	O
Interventions	Initiator stimulated members to ask open-ended questions and to investigate other member's perspectives. Initiator would often ask members to experiment with summarizing each other, or by doing so herself.	++

the network. Also, the interaction between members focuses on the negative organizational development and the lack of a clear direction that management should give.

Table 6.21		Brief description of the ICCO network Land rights
<i>Background of the network</i>		<i>Description</i>
Number of participants	Group of around 15 members including members of two departments of ICCO	
Invitation process of the participants	The initiator invited participants through an open e-mail invitation to all departments of ICCO.	
Objective of the network	Creating a shared perspective on land rights issues and determining the strategic position of ICCO.	
Main activity of the network	Presentation of cases and group discussion.	
Timeframe of the research activities and members of the research team	April 2008 – January 2009 Studied by M. Smit & T. de Jong	

6.4.11 Case 11: ICCO network Land rights

6.4.11.1 *Identification of network participants and the urgent work-related question*

The network objective focuses around exchanging examples of projects in order to clarify questions concerning the focus of ICCO on land rights. Questions that are identified circle around: How can we increase societal awareness for these kinds of projects? Who are important partners to work with? What is our theory of change? An initiator who is also considered an expert within ICCO on land rights formed the network. He organized a meeting to identify relevant learning questions and facilitated the process to make the objective of the network explicit. During the activities of the network an expert on land rights published a controversial article. This article could have a strong impact on the projects of the network participants if the management of ICCO would adopt the vision in the article. This led to a strong sense of urgency to develop a common vision on land rights and to gain clarity on the topic at hand.

6.4.11.2 *Structural dimension of the network Land rights*

The initiator invited participants via his network within ICCO. The policy of the network was: who is there, is there. Members of the network came from two different departments, who both work on land rights issues (bonding and bridging connections).

6.4.11.3 *Relational dimension of the network Land rights*

The publication of a controversial article on land rights increased the awareness and consensus of the network to explore a stronger strategic position regarding land rights in Third World countries.

6.4.11.4 *Cognitive dimension of the network Land rights*

The network shares a sense of insecurity. If they would succeed in developing a new perspective on land rights it would be of additional value to ICCO. The published article created a strong awareness to create something new that could support their perspective on land rights.

6.4.11.5 *Social learning processes*

The group starts by taking some time to make informal contact. The meetings are based on case presentations. The initiator facilitates the group discussion. The network activities have not resulted in new perspectives or ideas. Most of the time the network participants work on specific questions individually and would present that in the next meeting. The meetings are characterized by collecting information about land rights. This often leads to confusion and debate about the relevance and impact of the shared information.

6.4.11.6 *Knowledge productivity: improvements and innovations*

Could not be observed in this case study.

6.4.11.7 *Knowledge productivity: development of sustainable capabilities*

Could not be observed in this case study.

6.4.11.8 *Interventions*

The initiator of the network facilitates the group discussions based on case presentations. He actively summarizes, asks open-ended questions and determines the future focus of the network. Besides this, the initiator creates the agenda for the meetings, works out the results via e-mail and actively uses an online wiki to share the insights within ICCO.

6.4.11.9 *Stimulating and inhibiting factors in the network*

During the time the network participants organized the meetings a new publication on land rights was published. This article questioned the relevance of working on land rights issues in the development of cooperation in Third World countries. This increased urgency within the network led to the ambition to develop a clear framework on the future work of land rights professionals within ICCO.

Table 6.22 Within-site display of case 11: ICCO network Land rights		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	The start of the network to work on land rights questions is an organizational initiative. The initiator of the network is an informal expert on land rights issues and was asked to organize the network activities. The initiator invited relevant participants via his informal network.	++
Urgent work-related question	The initiator, based on discussions with management, identified a work-related question: What position does ICCO take in respect to land rights in Third World countries?	+
Structural dimension	Bonding and bridging connections.	Bo, Br
Relational dimension	The publication of a controversial article on land rights increased the awareness and consensus of the network to explore a strong strategic position on land rights within ICCO.	++
Cognitive dimension	Shared sense of insecurity if they would succeed to develop a new perspective on land rights in ICCO.	++
Social learning processes	The network worked around case presentations of network participants. Based on the presentation, a group discussion was facilitated by the initiator. Members have difficulty listening actively to each other and building on new insights. Instead, a lot of information is collected, without leading to new insights.	+
KP: improvements and innovation	The network created a vision document with their perspectives on land rights. This was presented to the management. There are no signs of improvements or innovations of work procedures, products or services.	O
KP: sustainable capability to innovate	The network case study offers no suggestions of an increased sustainable capability to innovate.	O
Interventions	Facilitator actively intervened: summarizing, asking questions and bringing focus in the meetings.	+++

6.4.12 Case 12: ROCMN network Increasing the quality of language in competence-based learning

Table 6.23 Brief description of the ROCMN network Increasing the quality of language in competence-based learning	
<i>Background of the network</i>	<i>Description</i>
Number of participants	Group of around 15 members including teachers from different departments. Also external experts are invited to participate in the network.
Invitation process of the participants	The initiator invited participants through her informal network.
Objective of the network	Signaling relevant developments in language and competence-based learning in order to advise the management team.
Main activity of the network	Presentations, workshops or discussions about possible new initiatives in the ROCMN.
Timeframe of the research activities and members of the research team	December 2007 – January 2009 Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

6.4.12.1 Identification of network participants and the urgent work-related question

Before the network organized the network activities a group of teachers were already active in sharing knowledge. The aim of the network is to identify relevant developments concerning language in competence-based learning and to provide management with advice to deal with these issues. The initiator organized a meeting to identify learning questions of the network participants. The result was a strong ambition to exchange information and practices. The goal of the network expanded in giving advice to management and sharing meaningful information and knowledge.

6.4.12.2 Structural dimension of the network Increasing the quality of language in competence-based learning

Members of the network originate from different departments of the ROCMN. Also, the number of participants varied every network meeting. The initiator of the network organized several meetings with external experts, for instance from the Ministry of Education. The majority of members were teachers (bonding, bridging and linking connections).

6.4.12.3 *Relational dimension of the network Increasing the quality of language in competence-based learning*

The meetings of the network are characterized as comfortable, safe and interesting. The initiator introduces new members. The network participants did not pay specific attention to personal ambitions or objectives. The number of participants varies every meeting (e.g., 10 versus 30). According to network participants the discussions within the network are very lively and interesting. On the other hand these did not lead to activities besides the continuation of sharing problems, ideas and activities.

6.4.12.4 *Cognitive dimension of the network Increasing the quality of language by students in competence-based learning*

Most of the network participants are experienced in teaching the Dutch language to students. These network participants have strong interpretations how to successfully teach Dutch to students. The shared belief of the network participants is that they are sceptical if they can succeed in developing an advice for the management that results in specific management activities.

6.4.12.5 *Social learning processes*

The network activities focused on organizing presentations by an external party or expert from the ROCMN. Based on the presentation, small groups would work together on a framework to examine language-related products of students. These subgroups often present the findings in plenary meetings. This leads to future activities (or a concrete agenda) of the next network meetings.

6.4.12.6 *Knowledge productivity: improvements and innovations*

The activities within the network lead to the creation of a manifest with recommendations to the management of ROCMN. This manifest was built around three possibilities to improve language in competence-based learning. The management adopted this manifest. This manifest was further developed into a implementation plan that has been adopted as a strategic activity within the ROCMN.

6.4.12.7 *Knowledge productivity: development of sustainable capabilities*

The network participants are more aware of the importance to include decision makers in innovation processes. Previously, the ROCMN often stimulated innovation within groups with similar expertise and background (e.g., teachers or policy makers). Now, members mention the importance of creating a network with decision makers (of different hierarchical levels) as a crucial success factor for innovation.

6.4.12.8 *Interventions*

The initiator of the network strongly emphasizes including teachers in the network. In addition, the initiator likes to use unconventional procedures during network activities. These include speed sparring, mind mapping or using appreciative inquiry techniques. The initiator sends invitations and organizes the location.

6.4.12.9 *Stimulating and inhibiting factors in the network*

The network initiator organizes meetings with an equal representation of members in terms of different departments and external guests. This leads to a combination of different kinds of expertise to work in the domain of language and competence-based learning. Finally, the network meetings are characterized by stimulating a safe learning environment in which new members would be introduced and an equal input of members was stimulated (and intervened on by the initiator).

Table 6.24		Within-site display of case 12: ROCMN Network Increasing the quality of language in competence-based learning
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	The core group of this network was already active in an informal network. The initiator is seen as an expert within the ROCMN on this topic and invited members to give advice to ROCMN management on improving the quality of language in competence-based learning.	+++
Urgent work-related question	Initiator identified a low quality of language in competence-based learning. The aim of the network is to signal relevant new developments in language in competence-based learning and give advice to the management to improve the quality.	++
Structural dimension	Bonding, bridging and linking connections	Bo, Br, L
Relational dimension	The network paid specific attention to personal objectives and ambitions of network participants. The members mention the consensus in the network to work on specific content. Members are daily confronted with the poor quality of language by students and feel a strong drive to improve it.	+++
Cognitive dimension	Strong shared ambition to improve the quality of education within the ROCMN. In the beginning members were skeptical if the network can succeed.	++
Social learning processes	Guests or network participants give presentations about experiences in the classrooms. The network works in small groups on a framework to determine and examine the language-related products of students.	++
KP: improvements and innovation	The network created a manifest that was offered to the management of the ROCMN. The manifest had three possible solutions. The manifest was adopted as a strategic activity in the ROCMN.	+++
KP: sustainable capability to innovate	Awareness of including teachers in the network and decision makers in order to exert influence as a network.	++
Interventions	The initiator facilitated the network meetings. The initiator suggested working with teachers in the network. Also unusual work procedures during the network meetings were stimulated. The initiator is also responsible for finding different locations to have the meetings.	+++

6.4.13 Case 13: ROCMN network Supporting entrepreneurship

Table 6.25 Brief description of the ROCMN network Supporting entrepreneurship	
<i>Background of the network</i>	<i>Description</i>
Number of participants	Group of around 25 members including policy makers, department managers, team managers from different departments and external experts on entrepreneurship.
Invitation process of the participants	The initiator scanned the management structure and this led to a short list of possible network participants. The initiator invited the members personally.
Objective of the network	Stimulating entrepreneurship within projects.
Main activity of the network	Presentations, workshops or discussions about possible new initiatives in the ROCMN.
Timeframe of the research activities and members of the research team	December 2007 – January 2009 Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

6.4.13.1 *Identification of network participants and the urgent work-related question*

Stimulating entrepreneurship is a strategic objective of the ROCMN. Several departments of the ROCMN are already experimenting with projects to stimulate entrepreneurship. Within the management team an initiator is appointed to work on this strategic issue. Possible network participants are located through the management structure: managers of departments are asked to identify colleagues that could participate in the network. In the first network meeting, together with an external expert, the network decided to focus on finding hot spots within the organization that seemed promising. The aim of the network is to support these hot spots. There is no explicit urgent work-related question shared by the network participants.

6.4.13.2 *Structural dimension of the network Supporting entrepreneurship*

The members of the network come from different departments in the ROCMN. Network participants work as policy makers, department managers or team managers (bonding and bridging connections). There are no teachers active in the network.

6.4.13.3 *Relational dimension of the network Supporting entrepreneurship*

The network has a strong ambition to get closer to the level of management regarding entrepreneurship to exert influence on decision-making processes. Expectations of the network participants are very high; at the same time they are unsure if they are able to succeed without the actual initiator participating in the network. The interaction is normative in regards to successful projects in the ROCMN. Members mention that this often leads to an unsafe and uncomfortable feeling.

6.4.13.4 *Cognitive dimension of the network Supporting entrepreneurship*

The network has a strong desire to organize change within the ROCMN. A shared attitude within the network meetings was that the ROCMN should organize itself as an entrepreneurial organization instead of a school. These beliefs translate into a strong shared perspective that the network should be able to make specific decisions. The network must be able to cut swiftly through bureaucratic rules. This shared interpretation is both a productive mechanism during meetings as well as inhibiting due to the high success norm.

6.4.13.5 *Social learning processes within the network*

The network organizes several activities in which specific themes are discussed. Examples are working on the planning and control phase of a new project or determining the level of funding for a project. Most of the time the network invites an external expert. During the meeting different projects are discussed as a case study. Often, there is a best practice or a specific norm to work towards. This often leads to fierce discussion and argument about the norm at hand, sometimes to such levels that network participants feel unsafe or uncomfortable.

6.4.13.6 *Knowledge productivity: improvements and innovations*

The network initiated several pilots to experiment in stimulating entrepreneurship within the ROCMN. Examples are the design of a mobility center to reassign employees and the experiment of a learning workplace for students.

6.4.13.7 *Knowledge productivity: development of sustainable capabilities*

Could not be observed in this case study.

6.4.13.8 *Interventions in the network*

Initially the facilitator structured the network activities by making the agenda, inviting people and communicating results. After one year the network participants began to rely on the initiator to organize the meetings.

The initiator is responsible for organizing the activities and for intervening during the meetings. For this reason an expert panel has been created. This expert panel has the assignment to give feedback and support the experiments that are initiated by the network participants. As the experiments receive funding from the ROCMN, these discussions are very fierce and are based on specific norms of what is successful and what is not. Gradually the external experts were no longer invited to participate. According to participants and the initiator this led to the disintegration of the network.

6.4.13.9 *Stimulating and inhibiting factors in the network*

The network initiator had a strong desire to initiate and organize change in order to stimulate entrepreneurship within the ROCMN. At the same time, the board of directors of the ROCMN appointed the initiator of the network. Therefore the objective and motives of the network were not always clear to the members.

Table 6.26 Within-site display of case 13: ROCMN network Supporting entrepreneurship		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	Stimulating entrepreneurship is a strategic objective of the ROCMN. The management initiated the network by appointing a facilitator.	+
Urgent work-related question	Management initiated the network by asking the following question: How can we support hot spots in entrepreneurship within the ROCMN?	O
Structural dimension	Bonding, bridging and linking connections	Bo, Br, L
Relational dimension	The network has a strong ambition to get closer to the level of management regarding entrepreneurship to exert influence on decision-making processes. Expectations of the network participants are very high; at the same time they are unsure if they are able to succeed without the actual initiator (management) participating in the network.	++
Cognitive dimension	Strong ambition between the members that the network should be able to realize change. When this took too long it led to frustrations and different interpretations of what would be suitable activities.	+
Social learning processes	Network meetings focus on presenting cases. Based on the presentation, a group discussion is facilitated. Also a panel of experts is invited to give feedback on the experiments. This leads to fierce debate and some of the network members experience it as unsafe and uncomfortable.	+
KP: improvements & innovation	The network initiated a number of small experiments within the ROCMN on stimulating entrepreneurship by students.	++
KP: sustainable capability to innovate	The network case study offers no suggestions of an increased sustainable capability to innovate.	O
Interventions	The facilitator is responsible for the structure of the meetings. Also the facilitator intervenes in the group discussions and summarizes the highlights. Finally, an expert panel gives feedback on presentations of network participants.	++

6.4.14 Case 14: ROCMN network Education and interactive media

Table 6.27 Brief description of the ROCMN network Education and interactive media	
<i>Background of the network</i>	<i>Description</i>
Number of participants	Group of around 50 members including teachers from different departments and experts from other organizations.
Invitation process of the participants	The initiators invited network members through their informal network.
Objective of the network	To stimulate the use of interactive media in educational initiatives.
Main activity of the network	Workshops and presentations of network participants.
Timeframe of the research activities and members of the research team	December 2007 – January 2009 Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

6.4.14.1 *Identification of network participants and the urgent work-related question*

The two initiators of the network for education and the use of interactive media are frontrunners in using ICT and interactive media in educational activities within the ROCMN. They recognized a lot of hesitation from colleagues to experiment with interactive media. The initiators aimed to change the way teachers worked within the ROCMN and to persuade colleagues to work with video, podcasts and other forms of supportive interactive media. First the initiators invited a core group of teachers from different departments who they personally knew. Besides this the initiators invited all teachers of the ROCMN to participate in a first workshop. Based on this a second core group was formed, of around 40 people.

6.4.14.2 *Structural dimension of the network Education and interactive media*

The network has a core group of 20 teachers from different departments within the ROCMN. Around this core group a second group of around 30 teachers and external experts (linking connections) visited the network and exchanged information via an electronic learning system (blackboard). Subgroups of the core group prepare network meetings, often based on workshops or brainstorming sessions (bonding and bridging connections).

6.4.14.3 *Relational dimension of the network Education and interactive media*

The interaction and discussions during the meetings and also on the blackboard are content driven. Participants are looking for new ways to experiment with educational activities. When somebody presents an example to work with podcasts online, the discussion is very lively. Teachers are actively looking for new ways to work with students. The ambition and passion of network participants is high, for instance the initiator has difficulty in facilitating the meetings because a lot of discussion and interaction take place based on the workshops. Members reflect on the meetings by mentioning the importance of mutual trust, openness and appreciating feedback and input.

6.4.14.4 *Cognitive dimension of the network Education and interactive media*

The core group of the network had a specific ICT vocabulary. When the network was invited to give a workshop in another school the workshop members frequently asked the network participants to explain specific abbreviations or terminology.

6.4.14.5 *Social learning processes within the network*

Most of the time the network activities were composed out of workshops. Sometimes it was even simpler, for example small groups would make a film and put it online. This often led to a series of problems or issues that were then tackled in a workshop or meeting. The groups would work in small teams together on a new interactive media initiative.

6.4.14.6 *Knowledge productivity: improvements and innovations*

Within several departments video instructions are made together with students. The films can be downloaded via an electronic learning system, in that way supporting distanced learning. Also, several students work with interactive media, which the network supports. There is also an increasing number of teachers who work with PowerPoint and support their slides with photos, film clips and sound.

6.4.14.7 *Knowledge productivity: development of sustainable capabilities*

Teacher: 'Working with multimedia is not as frightening for teachers anymore, and we now know that it is an educational vehicle to reach our students.' The network participants mention that they have developed a new capability to recognize new developments in ICT and translate them to concrete activities in the classroom.

6.4.14.8 *Interventions*

The network initiators are responsible for the invitations and facilitation of the meetings and workshops. They prepare the meetings and make sure all the necessary equipment is ready to use. During meetings, the facilitators pay attention that the dominant individuals, who often talk a lot, do not take up all the time. Members of the network mention that this resulted in more interaction. The initiators prepare the meetings so that all relevant questions from network participants have the chance to be answered or explored.

6.4.14.9 *Stimulating and inhibiting factors of the network*

The media and education network has a strong informal character with many connections across departments and organizations. This leads to directed searches in the network for specific knowledge or expertise in the domain of media and educational questions within the network. Also, the network consists of experts with a shared vocabulary. Initiators of the network have strongly developed themselves as facilitators and are visible within the organizations as frontrunners in networking.

Table 6.28 Within-site display of case 14: ROCMN network Education and interactive media		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	Two initiators are very active in using interactive media in educational activities and have the ambition to stimulate this with their colleagues. The initiators invite a small group of colleagues to experiment with interactive media in educational settings.	++++
Urgent work-related question	How can we increase the awareness by teachers to use interactive media and tempt them to experiment with it?	+++
Structural dimension	Bonding, bridging connections and linking connections.	Bo, Br, L
Relational dimension	Meetings mainly focused on the content. Strong ambition to experiment with new media software. Meetings have lively discussions between members. Network participants are proud of achieved success when experimenting with interactive media.	+++
Cognitive dimension	The network participants adopt specific abbreviations and ICT vocabulary during the discussions. Members mention a collective ambition to increase the use of multimedia when working with students.	+++
Social learning processes	The network is very active in organizing workshops. The workshop gives input for new activities. The network invited experts from within and outside the organization. Some members work together in subgroups and are very curious about interactive media developments.	+++
KP: improvements and innovation	Several new video instructions were made together with students. An increasing number of teachers use interactive media to support their classroom activities.	++++
KP: sustainable capability to innovate	Teachers have adopted interactive media as a new vehicle to reach students. Adoption of a new capability to recognize these ICT developments and experiment with them together with students.	+++
Interventions	Initiators are responsible for organizing the meetings, the workshops and facilitating the process. The initiators invite participants by using multimedia (e.g., video or podcasts) and mention the importance to stimulate fun, innovative and interesting workshops.	+++

6.4.15 Case 15: ROCMN network Learning in career development

Table 6.29		Brief description of the ROCM network Learning in career development
<i>Background of the network</i>	<i>Description</i>	
Number of participants	Group of around 100 members including teachers of different departments of the ROCMN, policy makers of the ROCMN and the sub-organization STAP that supports student in career development.	
Invitation process of the participants	The facilitators of the network organized an informal conference at which the network was formed.	
Objective of the network	To determine the interaction between learning and career developments in curricula of the ROCMN.	
Main activity of the network	Workshops and presentations.	
Timeframe of the research activities and members of the research team	December 2007 – January 2009 Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong	

6.4.15.1 *Identification of network initiators and the urgent work-related question*

Stimulating learning in career development is a strategic objective of the ROCMN. Based on this strategic objective two colleagues were approached to initiate a network on this topic. The initiators are interested in increasing career development activities. In the beginning the initiators invited participants of STAP, a sub organization of the ROCMN, to participate and to support them to design several activities.

6.4.15.2 *Structural dimension of the network Learning in career development*

The structure of the network consisted of members of STAP, a sub organization of the ROCMN, policy makers of different departments and teachers from different departments in the ROCMN. In total, 100 colleagues were connected through the electronic learning system blackboard (bonding, bridging connections; STAP is considered as a linking connection).

6.4.15.3 *Relational dimension of the network Learning in career development*

The network participants struggled with designing learning activities for career development. Participants desire to exchange specific products or examples, but the problem was that such did not yet exist. Experts that participate in the network make it an attractive network to participate in for other network participants. The sub organization STAP already was several

steps ahead. When within the meetings the process slowed down, they would easily complain about the ROCMN. This sometimes led to a disruptive climate.

6.4.15.4 *Cognitive dimension of the network Learning in career development*

Complaining about the organization plays an important role in the network. It leads to diminished energy and participants stop attending the network activities. It also results in a shared perspective that it was necessary to make the criteria and vision of career development explicit before working on specific cases.

6.4.15.5 *Social learning processes*

Most of the time, the network organizes presentations or workshops. People take notes and ask questions. Based on the input, subgroups would work on translating the insight into their own work environment.

6.4.15.6 *Knowledge productivity: improvements and innovations*

In several learning activities, career development has become part of the curriculum. The network activities are responsible for the design of these curriculum activities.

6.4.15.7 *Knowledge productivity: development of sustainable capabilities*

Could not be observed in this case study.

6.4.15.8 *Interventions*

Frequently, the initiators of the network invited an external guest or expert. In these situations the interventions by the facilitator aimed at stimulating the process and interaction between the network participants. Besides this, the facilitator organizes and plans the meetings, is responsible for the structure of the meetings and asks questions or challenges participants to ask questions.

6.4.15.9 *Stimulating and inhibiting factors of the network*

The network participants mention that during the activities it was not clear who the initiator of the network was and who will benefit when the network creates valuable knowledge and insight.

Table 6.30 Within-site display of case 15: Supporting Learning in career development		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	Stimulating learning in career development is a strategic objective of the ROCMN. Two initiators were approached to organize and facilitate the network activities.	+
Urgent work-related question	The urgent question originates from management. Focus on exchanging relevant products that are used within the ROCMN. The question of the network is: What can we learn from the products we provide in order to provide a clear portfolio of suitable activities?	+
Structural dimension	Bonding, bridging connections and linking connections. Linking connections are represented in this case by the sub-organization STAP that supports students in career development.	Bo, Br, L
Relational dimension	Initiators experienced difficulty in designing learning due to the lack of consensus on the shared goal of the network activities. There are no products or services to exchange in order to work on the work-related questions. The ambition to create something together is high. This led to frustration and discussion on the expectation of management. Discussion sometimes led to complaining about management of the ROCMN.	+
Cognitive dimension	Network participants showed a strong desire to complain about the management of the ROCMN. This led to less energy during activities. A shared perspective on the objective of the network is lacking, leading to different interpretations of network participants.	+
Social learning processes	The network activities had specific room for interaction and discussion. This often led to complaining about the strategic direction of the ROCMN. On the other hand, participants would ask questions, interact and design small experiments when workshops or presentations were given.	++
KP: improvements and innovation	In several learning activities at level 2, VMBO experiments on learning and career development are initiated in formal curriculum activities.	++
KP: sustainable capability to innovate	The network case study offers no suggestions of an increased sustainable capability to innovate.	0
Interventions	The initiators organized the meetings. Every meeting started with informal exchange on sharing experiences. The facilitators stimulated to ask questions, wrote down insights and sent a summary by e-mail to the participants.	++

6.4.16 Case 16: ROCMN network Creating awareness to work with ICT

Table 6.31 Brief description of the ROCMN network Creating awareness to work with ICT	
<i>Background of the network</i>	<i>Outcome</i>
Number of participants	Group of around 120 members including teachers, ICT staff from different departments from the ROCMN and external teachers and ICT staff members from other schools.
Invitation process of the participants	Through the informal network of the initiators and after some time through an online network.
Objective of the network	Improve ICT software to use in educational activities.
Main activity of the network	Workshops, open space meetings, presentations and visiting other schools.
Timeframe of the research activities and members of the research team	December 2007 – January 2009 Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

6.4.16.1 Identification of network participants and the urgent work-related questions

The objective of the network is to identify and improve ICT supporting software to use in educational activities. The start of the network was when the ROCMN was founded, following a merger. The initiator changed his working location and saw a big difference in expertise and experience in working with ICT (for instance in regards to working with the online learning system blackboard) between different colleagues. For the initiator this was the reason to organize meetings to exchange experiences and knowledge. After some months, a subgroup started informal meetings to create more depth in the interaction. The network consisted of teachers from different departments and external organizations.

6.4.16.2 Structural dimension of the network Creating awareness to work with ICT

The network started with members from different departments, often in support staffs or in the role of project manager. After some time the network also had external participants (bonding, bridging and linking connections). There was no relevant difference in hierarchy.

6.4.16.3 Relational dimension of the network Creating awareness to work with ICT

The participants of the network have a shared passion for ICT. Colleagues within the ROCMN refer to them as ‘webbies.’ The affinity to explore new

possibilities in ICT is strongly developed within the network participants. Some of the members for instance attend conferences to learn from others. The network participants are also proud of the achieved success of the network.

6.4.16.4 *Cognitive dimension of the network Creating awareness to work with ICT*

The network participants developed a common language together, combined with specific abbreviations, words but also gadgets, such as PDAs. Members also regularly meet at conferences and external events. The network participants call themselves 'webbies.' The network has existed for more than three years and members are very familiar with each other.

6.4.16.5 *Social learning processes*

Besides formal meetings, network participants are very active online. They share tools and insights through e-mail, blackboard and social network media such as Hives. The formal meetings mostly consist of workshops and presentations. Based on new insights and ideas the network develops, a discussion is facilitated. During open space meetings, subgroups work jointly on new ICT programs.

6.4.16.6 *Knowledge productivity: improvements and innovations*

The successful implementation of the online learning system blackboard and support to other colleagues largely depended on this network. The network was active in supporting teachers how to work with it and by answering questions online. Network participants and surrounding colleagues mention the importance of the network because of their successful troubleshooting.

6.4.16.7 *Knowledge productivity: development of sustainable capabilities*

Colleagues of the ROCMN who are not part of the network mention the increased awareness of network participants to use ICT interventions to support learning activities for students. The network has a strong capability to invite innovative external guests and to adopt these insights in schooling activities.

6.4.16.8 *Interventions*

A facilitator is appointed for each meeting. The facilitator is responsible for coordinating the plenary discussion and structuring the meeting.

6.4.16.9 *Stimulating and inhibiting factors in the network*

The network has a strong informal network across departments. At the same time, the network likes to maintain an informal (invisible) position within the ROCMN. The members have adopted a shared language concerning ICT.

Table 6.32		Within-site display of case 16: ROCMN network Creating awareness to work with ICT
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	Initiator organized the first network meetings when the ROCMN merged in 2006. This group continued to organize activities to stimulate informal exchange and work on the implementation of new ICT functions in educational activities.	+++
Urgent work-related question	The initiators saw a big difference in relevant expertise and experience across different organizations. The question they asked is: How can we learn from each other and identify problems in ICT within the ROCMN at an early stage?	++
Structural dimension	Bonding, bridging and linking connections.	Bo, Br, L
Relational dimension	Shared passion for ICT (they call themselves webbies). Affinity to develop new ICT interventions to support educational activities. Network participants are proud of the success of the network. During the activities the network members develop a shared language with specific abbreviations and terminology.	++++
Cognitive dimension	Network participants use common abbreviations and gadgets and tools (such as PDAs or wikis). Members meet each other at international conferences or exchange initiatives with other schools.	+++
Social learning processes	New ICT developments are shared in network meetings. High level of curiosity during meetings and members ask a lot of questions of each other. Activities vary from working together based on a workshop or by organizing a discussion meeting. Members are very active online where they share relevant information and experiences.	+++
KP: improvements and innovation	Successful implementation of the online learning system (blackboard) and the support to colleagues.	+++
KP: sustainable capability to innovate	Members have developed a strong informal network and mention the importance of inviting external perspectives when dealing with innovative questions.	+
Interventions	The initiator organizes the network meetings and facilitates an online digital platform to exchange information and experiences. The initiator stimulates circulating the role of facilitator	+

6.4.17 Case 17: ROCMN network Design of curriculum activities and student citizenship

Table 6.33 Brief description of the ROCMN network Design of curriculum activities and student citizenship	
<i>Background of the network</i>	<i>Outcome</i>
Number of participants	Group of around 50 members including teachers from the same department but different teams. Also the network works with an NGO and policy makers from the municipality.
Invitation process of the participants	The initiator invites the network participants through the informal network.
Objective of the network	Intertwine citizenship-schooling activities in formal curricula.
Main activity of the network	Workshops and presentations.
Timeframe of the research activities and members of the research team	December 2007 – January 2009 Studied by M. Rondeel, P. Pillen, P. van Wijngaarden & T. de Jong

6.4.17.1 Identification of network participants and the urgent work-related question

This network had a high external urgency. The government urged schools to work on promoting and stimulating citizenship in all curriculum activities. The Ministry of Education designed a policy document with their expectations towards the ROCMN. Previous initiatives by management to implement citizenship in schooling activities failed. Based on this urgency, a teacher of the ROCMN was invited by the management team as an initiator of a network. She was already active in organizing several activities on citizenship and schooling in the ROCMN. The planning of the activities started within one department of the ROCMN. The initiator invited participants from this department. The ambition was to design the content and examination of citizenship in curriculum activities.

6.4.17.2 Structural dimension of the network Design of curriculum activities and student citizenship

Fifty network participants are active in this network, half of which come from the same department, but from different teams. Most of the network participants are teachers. The other network participants come from different departments (bonding and bridging connections).

6.4.17.3 *Relational dimension of the network Design of curriculum activities and student citizenship*

Within the network there was a strong drive to create a product that would support their individual curriculum activities. Most of the network participants experienced a sense of urgency to work towards concrete results. Previous initiatives by management did not lead to desired results. During network activities subgroups would start to design the content. The network explicitly did not want to invite managers (quote: ‘Managers always argue and discuss, we wanted to get things done’).

6.4.17.4 *Cognitive dimension of the network Design of curriculum activities and student citizenship*

Network participants collectively felt that the management of the ROCMN could not design the content and criteria of citizenship schooling activities; rather, teachers should do it. There was a strong belief that management only argues about the content and is unable to design it. For this reason the network did not include managers.

6.4.17.5 *Social learning processes*

During the first network meetings the focus was to exchange ideas and perceptions on citizenship. The initiator paid specific attention how teachers perceive citizenship and the way it is organized within the ROCMN. A lot of time was spent on sharing examples how citizenship is organized in specific professions. This discussion led to a shared belief about the desired outcome and the urgency to design a citizenship framework for students. Based on this urgency the network has organized several design meetings to create a conceptual framework. This conceptual framework was presented to an advisory committee of the ROCMN.

6.4.17.6 *Knowledge productivity: improvements and innovations*

The network designed a conceptual framework of citizenship curriculum activities that is applicable to all departments of the ROCMN. The framework is very specific and designed by teachers. For instance it includes specific examples for teachers to work with. The activities within the network also attracted several organizations concerned with citizenship. Several presentations about alcohol and drug use were given in departments. Also, a NGO started a joint cooperation with the ROCMN. The citizenship design of the ROCMN also received a honorable statement by the committee of the Dutch Kienhuis price.

6.4.17.7 *Knowledge productivity: development of sustainable capabilities*

The network activities have resulted in several new initiatives within the ROCMN. Network participants actively cooperate with external parties. Members mention the added value of working with NGOs or municipalities. Also, the designed framework offers an attractive starting point for teachers to include citizenship interventions in educational activities.

6.4.17.8 *Interventions*

One of the important interventions the initiator of the network mentions is taking time to exchange perceptions about previous activities concerning citizenship in their work practice. The discussions create a common sense of urgency and a collective ambition to create value together. Also, the network hired an external consultant to facilitate and prepare the network meetings. Because the initiator felt the network participants might see her role as conflicting (she is also seen as an informal expert within the ROCMN), the facilitator was responsible for the process of the meetings.

6.4.17.9 *Stimulating and inhibiting factors in the network*

The network curriculum activities to increase student citizenship are prioritized as a high urgency within the ROCMN. This is due to legislation from the Ministry of Education and secondly due to the strategic objective of the ROCMN to initiate citizenship as a formal activity within curricula. The initiator of the network is very passionate about citizenship and is successful in inviting relevant stakeholders within the network. Also the initiator spent time getting to know each of the members in the network in order to create a comfortable environment.

Table 6.34 Within-site display of case 17: ROCMN network Design of curriculum activities and student citizenship		
<i>Variables</i>	<i>Observed indicators in the case study</i>	<i>Rating</i>
Initiator(s)	Stimulating student citizenship is considered as having a high urgency within the ROCMN. The initiator is very active in the field of citizenship. The initiator is appointed by the management of ROCMN and organizes the network within her own department. The management proposed the specific urgent work-related question and it was further explored in the first network meeting.	++++
Urgent work-related question	How can we design the content and examination in curriculum activities in order to increase student citizenship?	++++
Structural dimension	Bonding and bridging connections.	Bo, Br, L
Relational dimension	Strong drive to create a product that would support curriculum activities. Network participants have a strong ambition to work with teachers and without managers. Members strongly identify with the topic of the network.	+++
Cognitive dimension	Collective feeling that management is failing to work on student citizenship. Shared ambition within the network to work with teachers and without managers. Shared belief within the network that educational innovation does not need managers with specific objectives and agendas.	+++
Social learning processes	The initiator paid specific attention to personal beliefs about the role of citizenship in curriculum activities. A lot of time was spent on exchanging perceptions and ideas. Based on these insights, design meetings were organized where the group would work together on designing activities in specific curriculum activities.	+++
KP: improvements and innovation	Design of a conceptual framework of citizenship curriculum activities that is applicable for all ROCMN departments.	++++
KP: sustainable capability to innovate	A number of experiments within the ROCMN are initiated, in cooperation with external parties.	++
Interventions	Activities focused on exchanging perceptions and ideas about citizenship. The facilitator sent invitations and worked out the results. Also, the facilitator invited relevant parties for the network activities, inside and outside the organization.	+++

7

Cross case analysis: Relating the empirical findings

7.1 Introduction

Chapter 7 compares the 17 case studies in a cross-site analysis. The within-site analyses of Chapter 6 provide material for comparison of cross-site analyses as it enables to compare the main research variables of this study. The last cross-case analysis of this chapter presents the cases ranked according to their effect variable: knowledge productivity. The effect variable consists of two components: the results of the improvements, innovations and secondly the increased sustainable capability to innovate. In the process of drawing conclusions the qualitative findings have been transformed to Likert scales so that additional statistical computation can be performed. The findings in the cross-case display are rated on a five-point scale (1 = absent; 5 very strongly represented). Based on the numeric data a correlation matrix is constructed, that offers additional insight to what extent the different variables of the study relate to each other. The findings are presented in this chapter. Table 7.3 is used to discuss the patterns from the cross-case analysis. The results of a consultation session with representatives of the case studies are included in this chapter in order to better understand the meaning of the various findings and to share interpretations of the participants that took part in the research.

7.2 Main variables of the study

Leading in the cross-case analysis are the main variables of this study as introduced in Chapter 4. The next overview summarizes these variables. See table 7.1.

Table 7.1	Main variables of the study
Initiator(s)	Person who starts a network based on a relevant question
Urgent work-related question	Description of an urgent work-related question with a shared sense of direction for a possible outcome, a general goal or objective
Structural dimension of social capital:	Social structure of a network consisting out of bonding, bridging and linking connections
Relational dimension of social capital:	The quality of relations within the network identified by the indicators trust and trustworthiness, norms and sanctions, obligations and expectations, identity and identification
Cognitive dimension of social capital:	The shared meaning and interpretations within a network based on shared language, codes and shared narratives
Social learning processes:	The ability to learn from each other based on meaningful interactions in the network leading to the development of shared capabilities
Knowledge productivity: Improvements and innovations:	Improvements and innovations in products, services and operating procedures
Knowledge productivity: Sustainable capability to innovate	Development of the sustainable capability of the network participants to successful work on future innovative work-related questions
Interventions	Deliberate activities in the network focussing on specific effects

7.3 Ranking of the networks

The findings in the cross-site display in Table 7.2 give an overview of the 17 networks and the ratings of the main variables of this study. The variables of the preceding cross-case display are transferred into a new display, by ranking the 17 networks on the dependent variable of this study: knowledge productivity. This is presented in Table 7.3.

Table 7.2	Cross-site display of the networks and the main variables																
	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9	Case 10	Case 11	Case 12	Case 13	Case 14	Case 15	Case 16	Case 17
Initiator(s)	++++	++++	O	++++	O	+++	+	++	+	+	++	+++	+	++++	+	+++	++++
Urgent work-related question	++++	++++	O	+++	O	+++	O	+	+	+	+	++	O	+++	+	++	++++
Structural dimension	Bo, Br, L	Bo, Br, L	Bo, Br	Br, L	Bo, Br	Br, L	Bo, Br, L	Bo, Br, L	Bo	Bo	Bo, Br	Bo, Br, L	Bo, Br, L	Bo, Br, L	Bo, Br, L	Bo, Br, L	Bo, Br, L
Relational dimension	++++	+++	O	++	+	++++	+	+++	+	+	++	+++	++	+++	+	++++	+++
Cognitive dimension	+++	+++	O	+++	+	+++	+	++	O	+	++	++	+	+++	+	+++	+++
Social learning processes	++++	++++	O	+++	+	+++	O	+	+	+	+	++	+	+++	++	+++	+++
Knowledge productivity: improvements and innovations	++++	++++	O	++++	O	+++	+	+	O	O	O	+++	++	++++	++	+++	++++
Knowledge productivity: Sustainable capabilities	++++	++++	O	+++	O	+++	O	O	O	O	O	++	O	+++	O	+	++
Interventions	++++	+++	++	++	++	+++	+	+	+	++	+++	+++	++	+++	++	+	+++

The symbols O, +, ++, +++ and ++++ stem from the within-case displays indicating: O indicates absent, to ++++ indicates very strongly represented. The symbols Bo, Br, L are abbreviations that refer to bonding, bridging and linking connections.

Table 7.3		Cross-site display of the main variables in the cases ranked according the effect variable knowledge productivity (KP)										
Position	Case	Dependent variable in the study				Independent variables in the study						Interventions
		KP 1: Improvements & innovations	KP 2: Sustainable capabilities	Initiator(s)	Urgent work-related question	Structural dimension	Relational dimension	Cognitive dimension	Social learning processes			
1	Case 1	++++	++++	++++	++++	Bo, Br, L	++++	+++	++++	++++	++++	
2	Case 2	++++	++++	++++	++++	Bo, Br, L	+++	+++	++++	+++	+++	
3	Case 14	++++	+++	++++	+++	Bo, Br, L	+++	+++	+++	+++	+++	
4	Case 4	++++	+++	++++	+++	Br, L	++	+++	+++	+++	++	
5	Case 6	+++	+++	+++	+++	Br, L	++++	+++	+++	+++	+++	
6	Case 17	++++	++	++++	++++	Bo, Br, L	+++	+++	+++	+++	+++	
7	Case 12	+++	++	+++	++	Bo, Br, L	+++	++	+++	+++	+++	
8	Case 16	+++	+	+++	++	Bo, Br, L	++++	+++	+++	+++	+	
9	Case 13	++	O	+	O	Bo, Br, L	++	+	+	+	++	
10	Case 15	++	O	+	+	Bo, Br, L	+	+	++	++	++	
11	Case 8	+	O	++	+	Bo, Br, L	+++	++	+	+	+	

Position	Case	Dependent variable in the study			Independent variables in the study						
		KP 1: Improvements & innovations	KP 2: Sustainable capabilities	Initiator(s)	Urgent work-related question	Social capital			Social learning processes	Interventions	
						Structural dimension	Relational dimension	Cognitive dimension			
13	Case 11	O	O	++	+	Bo, Br	++	++	+	+++	
14	Case 10	O	O	+	+	Bo	+	+	+	++	
15	Case 9	O	O	+	+	Bo	+	O	+	+	
16	Case 5	O	O	O	O	Bo, Br	+	+	+	++	
17	Case 3	O	O	O	O	Bo, Br	O	O	O	++	

The symbols O, +, ++, +++ and ++++ stem from the within-case displays indicating: O indicates absent, to ++++ indicates very strongly represented. The symbols Bo, Br, L are abbreviations that refer to bonding, bridging and linking connections.

7.4 Identifying emerging patterns

It is now relevant to study the kinds of relations between the variables in the study and to determine emerging patterns. To support this analysis the qualitative judgements have been translated into a five point Likert scale. The quantitative transformation of the variables is realized by ranking the items as follows: 0 = 1, + = 2, ++ = 3, +++ = 4, ++++ = 5. Allowing for the interpretation between the main variables to take place, the findings are presented in Table 7.5. The research variables are abbreviated in Table 7.4.

Tabel 7.4 Abbreviations of the central research variables	
Improvements and innovations	KP 1
Sustainable capability to innovate	KP 2
Initiator(s)	Ini
Urgent work-related question	Urg work
Relational dimension	Rel
Cognitive dimension	Cogn
Social learning processes	Soc le
Interventions	Interv

7.4.1 Categories within the 17 case studies

In Table 7.6 three categories can be identified. The cases in the range of 1 to 8 show concrete improvement, innovations and an increased sustainable capability. The cases that are ranked as 9 to 12 only show concrete improvements and innovations. Finally, the cases that are ranked as 13 to 17 show neither signs of concrete improvements, innovations nor signs of increased sustainable capability.

7.4.2 Sustainable capabilities to innovate

Group I is successful in achieving improvements, innovations and developing sustainable capabilities. The networks that show development of sustainable capabilities are also successful in realizing improvements and innovations. It seems that without realizing specific improvements and innovations networks do not develop sustainable capabilities. This could entail that improving or innovating a product, service, or operating procedure is a necessary prerequisite in order to build new capabilities to improve and innovate future products, services and operating procedures.

Table 7.5		Correlations between improvements and innovations and the independent variables						
	1. KP 1	2. KP 2	2. Ini	3. Urg work	4. Rel	5. Cogn	6. Soc le	7. Interv
1. KP 1	1							
2. KP 2	,871(**)	1						
2. Ini	,901(**)	,882(**)	1					
3. Urg work	,862(**)	,918(**)	,940(**)	1				
4. Rel	,738(**)	,693(**)	,812(**)	,740(**)	1			
5. Cogn	,843(**)	,808(**)	,930(**)	,856(**)	,875(**)	1		
6. Soc le	,893(**)	,898(**)	,886(**)	,936(**)	,779(**)	,862(**)	1	
7. Interv	,527(*)	,696(**)	,564(*)	,652(**)	,445	,527(*)	,599(*)	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 7.6		Categories within the 17 case studies		
Group	Improvements and innovations	Sustainable capabilities	Cases	
I	+	+	1, 2, 14, 4, 6, 17, 12, 16	
II	+	-	13, 15, 8, 7	
III	-	-	11, 10, 9, 5, 3	

7.4.3 The initiator

The networks in group I that are successful in achieving improvements, innovations and developing sustainable capabilities show high scores on the role of the initiator (minimum of +++). When studying the role of the initiator of the networks in Group I it becomes visible that the initiator has a strong role in taking initiative to bring relevant participants together. The networks that are both successful in realizing improvements and innovations and developing sustainable capabilities have a visible and passionate initiator. In addition the initiators show enthusiasm and drive to work towards a specific goal. The initiator also feels responsible for inviting specific participants to join the network and is granted authority in the specific domain. These findings are supported when studying the correlation matrix: the highest correlation

between the dependent variables improvements and innovation is the variable initiator with a correlation of $r\ 0.901$. Networks that include members that have been invited personally by the initiator show signs of knowledge productivity. This suggests that networks operate by means of personal motive and passion for a specific topic. Open, impersonal invitations mostly by means of a general e-mail do not lead to networks that show knowledge productivity. Apparently, creating an attractive invitation is an important process to attract specific members with expertise.

7.4.4 Urgent work-related question

The cross-site analysis reveals that the presence of an urgent work-related question is very relevant for networks in Group I of Table 7.5. The results of the networks in Group I show that the network participants share this sense of urgency. The urgent work-related question and specific improvements and innovations correlate with $r\ 0.862$. The development of sustainable capabilities and an urgent work-related question correlates very high: $r\ 0.918$. Networks that are both successful in realizing specific improvements and innovations and develop sustainable capabilities show high ratings (either +++ or ++++) for the urgent work-related question.

7.4.5 Structural dimension of social capital: linking connections

Bonding connections are visible within all the network case studies except for the Cases 4 and 6. Bridging connections are visible within all the cases except Case 9 and 10. The cross case analysis reveals that networks that are successful in realizing improvements and innovations also show a network structure that includes linking connections (Group I and Group II). Apparently linking connections serve as a necessary aspect in the structural dimension of social capital in enabling improvements and innovations to occur within networks.

7.4.6 Social learning processes and social capital

Within networks in Group I social learning processes occur that lead to improvement, innovations and the development of sustainable capabilities to innovate. Social learning processes can be described as meaningful interactions between network participants. The correlation Table 7.4 with regard to the social learning processes and improved sustainable capability knowledge show a high correlation ($r\ 0.898$). These findings support the notion that social learning processes address the characteristics of the relational and cognitive dimension and enable sustainable knowledge productivity within the networks. The relational and cognitive dimension can be described as the building blocks of social capital when looking at strong learning processes that lead to the development of sustainable capabilities in a network. A network with a strong developed relational and cognitive dimension in itself does not enable knowledge productivity. It also requires the structural dimension of linking connections. Figure 7.1 presents the relation between the dimensions of social capital, social learning processes and knowledge productivity.

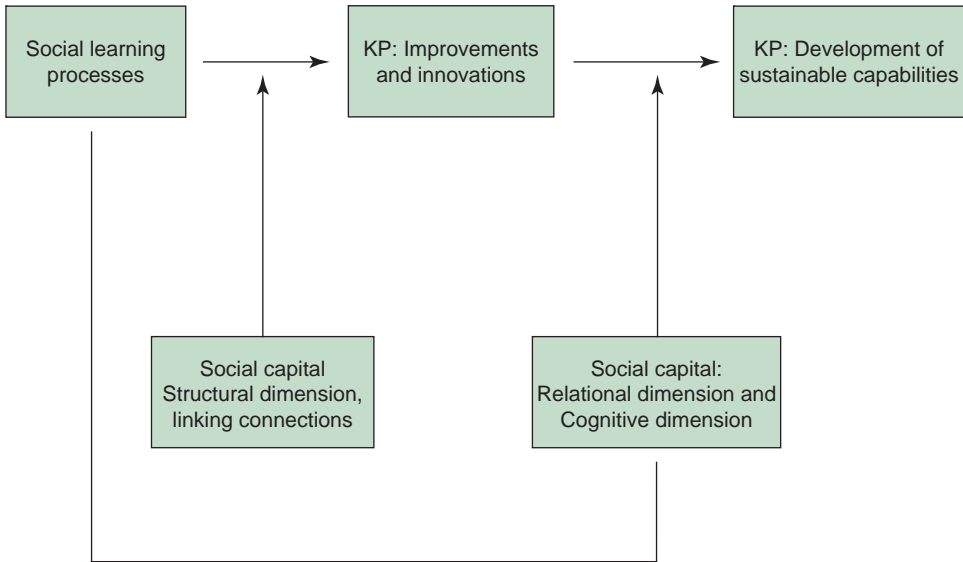


Figure 7.1

Interrelating social capital with learning and knowledge productivity

7.4.7 Interventions

In all 17 case studies, the network participants appointed a facilitator who took responsibility in structuring the interaction, ensuring that members received invitations, working out the results on paper, and by arranging suitable locations. Unlike the other variables the intervention show a far less clear picture. In Group I the ratings of interventions seem to be reasonably high, but in Group II and III ratings do not deviate from each other. The general picture of interventions in the networks provides a blurred image; it is difficult to abstract a general pattern out of these intervention findings. Close inspection of the databases of the individual cases reveals that interventions mainly focus at facilitating group interaction. The findings suggest that these interventions are necessary to structure the network activities and to ensure that meetings are organized and facilitated. Networks operate on the basis of passion and personal motivation. Often the interaction needs necessary structure in order to work towards specific results. It is necessary to keep the network going. Less attention is focused on the initiator, or on exploring the urgent work-related question. Also the facilitator does not pay specific attention to connecting with relevant parties inside and outside the organization. The interventions are mainly focused on stimulating bonding characteristics such as collective decision-making, plenary activities and collectively sharing relevant information. Combining these insights with the blurred overall pattern of the interventions rating further investigation of the role of interventions in networks seems to be necessary.

7.5 Dissident case and additional analysis

Initially Cases 17 showed slight deviation from the current pattern of the cross-case analysis in Table 7.3. In the next paragraphs the dissident case is briefly discussed followed by an explanation how additional data was collected and the results of the extra analysis.

7.5.1 Case 17: ROCMN network Design curriculum activities and student citizenship

Initially the findings of the case study of the ROCMN network Design curriculum activities and student citizenship did not show any increase in sustainable capabilities. When the researchers studied the findings, Case 17 was categorized in Group II of Table 7.4. The researchers found this case deviating due to the high ranking of the other dependent variables. Also the urgent work-related questions and initiator are rated ++++ and the other independent variables are rated at least +++. This specific case seems to act as a Group I case, but due to the low values of sustainable knowledge productivity in the network it is placed in Group II. This provided argumentation to advice the researcher to again study the complete case study report. Based on this additional analysis the researcher identified gaps in the initial analysis of the sustainable capability findings. The initiator was interviewed again to check if the findings as reported in the case study database concurred with her perception. It became clear that after closing the initial data collection the network was indeed successful in increasing the sustainable capability to innovate. Based on the activities of the network, several experiments within the ROCMN are initiated, in which network participants play a crucial role. Also the network was awarded an innovation prize in vocational training. The increased sustainable capabilities were visible in the new activities network participants initiated and successfully organized within the ROCMN. The researchers reached agreement to change the within-case display on increased sustainable capabilities from O to ++.

7.6 Consultation session

An important characteristic of this study is that network participants actively engage in the research process. Of all the 17 networks case descriptions were made and the network participants had the opportunity to comment on the findings in a workshop. The validated case descriptions served as input for Chapter 6, which presents the findings in each case. Some of the network participants became interested in other networks that participated in the research activities. They expressed a strong desire to learn from each other and exchange meaningful experiences. For this reason an additional workshop was organized. The goal of the workshop is to share important experiences and to reflect on the findings in the cross-case analyses. It is the expectation that the workshop offers material for further interpretation of

the findings and can serve as input for the conclusion and discussion chapter. The next paragraph briefly describes the aim and method that was used in the workshop. The final paragraph presents the findings.

7.6.1 Method

It is the aim of the workshop to exchange interpretations of the findings in the different networks in order to develop a shared interpretation. The workshop focuses on exploring relevant interventions that support learning in networks. 23 participants attended the consultation session. Seven participants had the role as researcher in one of the network case studies. The remaining participants are initiators of networks or participants. An overview of the participants is presented in Table 7.7. The main research questions in this phase were:

- What central success factors do the network participants identify when reflecting on the experiences in the different networks?
- What interventions in networks can support social learning that leads to knowledge productivity?

<i>Background during the research</i>	<i>Participants</i>
Researcher	7
Initiators of networks	9
Network participants	5
Facilitators of the consultation session	2

The session lasted approximately 3,5 hours. In the room information about the network studies was present. The walls were covered with posters of the network findings (see Appendix C). At the start the members were invited to read the posters. The meeting had the following structure:

- Invitation to read the posters;
- Getting to know each other and sharing some first reflections on the findings (what is your first impression?);
- Collectively exploring the context of learning and knowledge productivity in networks and the role of social capital;
- Working in small groups on exchanging key findings of the network study
- Collectively sharing the central findings;
- Working in small groups on exchanging productive interventions that support knowledge productive learning processes;
- Collectively sharing the central findings.

7.6.2 Findings

The first part of the consultation session focused on reaching alignment between the members on the interpretation of the findings. The question that is addressed in this part was: what central success factors do the network participants identify when reflecting on the experiences in the different networks? After four subgroups exchanged key findings of the research in the networks central success factors were identified at the individual level, the network level and the level of the supportive organization.

7.6.2.1 *Success factors at the individual level*

- Network participants have a strong personal drive for the network topic and participate voluntarily. Network participants that are sent by management or supervisors offer little added value and often drop out soon;
- Network participants feel responsible for the objective of the network and share ownership to reach it;
- Network participants show a strong engagement in finding answers to the work-related question and are actively involved in the network topic.

7.6.2.2 *Success factors at the network level*

- In the network a small group of core members take responsibility for a productive process;
- The network invests in a collective ambition to learn from each other by creating an environment where everybody can speak and think freely;
- The network gradually builds on trust and actively supports a safe learning environment;
- The network seeks dialogue and deeper meaning instead of discussion and superficial interaction;
- The network invests in a facilitator who organizes the process during the network meetings.

7.6.2.3 *Success factors at the organizational level*

- Management shows trust in the network by giving freedom to design the content and solution of the work-related question;
- Management provides network participants with time to participate during office hours;
- Management actively participates in the network when difficulties or challenges arise;
- Management seeks for mutual attractiveness and actively supports the network;
- When there is no facilitator available in the network, management offers the possibility to invite an external facilitator to guide the networks activities.

7.6.2.4 *Successful interventions in networks*

In the second part of the consultation session the following research question was explored: what interventions in networks can support learning that leads to knowledge productivity? The consultation session resulted in seven drivers that need to be ensured in order to successfully facilitate interaction in network meetings.

- Offer the network a variety of activities that are aligned with the work-related question and offer a supportive process in order to realize the network's main objective;
- Invite participants to connect with each other on ambition and passion. Often this requires facilitation techniques that reach deeper meaning and motives of participants;
- Entice participants to frequently reflect on the process and progress of the network in order to make challenges and successes explicit;
- Ensure that ownership of the network objective remains with the participants and not with the facilitator;
- Support the facilitator with professionalization training. Often the facilitators are colleagues from the same organization. It is suggested to occasionally organize reflection and exchange meetings between the facilitators;
- Sharing the results of the networks by the facilitator by working with posters, flyers or a pod cast as they offer an attractive way to keep up to date with visible results;
- Frequently address issues on ownership, encouraging collective agreement and decision taking of network participants. A lack of collective agreement inhibits the social learning process and hampers trust and a safe learning environment.

7.7 **Key findings**

This chapter compares the 17 case studies in a cross-site analysis. Three categories emerge: the cases ranked as positions 1 to 8 in Group I show concrete improvement, innovations and an increased sustainable capability. The cases that are ranked as 9 to 12 in Group II only show concrete improvements and innovations. The cases that are ranked as 13 to 17 in Group III show neither signs of concrete improvements, innovations nor signs of increased sustainable capability.

The networks that show development of sustainable capabilities are also successful in realizing improvements and innovations. It seems that without realizing specific improvements and innovations networks do not develop sustainable capabilities. This suggests that improving or innovating a product, service, or operating procedure is a necessary prerequisite in order to build new capabilities to improve and innovate future products, services and operating procedures.

When studying the role of the initiator of the networks it becomes visible that the initiator has a strong role in bringing relevant participants together,

is visible within his or her organization and is passionate about the topic at hand. In addition, the initiator shows enthusiasm and drive to work towards a specific goal.

The presence of an urgent work-related question is very relevant for knowledge productive networks. The findings of the networks in Group I show that the network participants share this sense of urgency. Networks that are both successful in realizing specific improvements and innovations and develop sustainable capabilities are ranked high for the urgent work-related question.

Linking connections serve as a necessary aspect in enabling improvements and innovations to occur within networks. Group II shows improvements and innovations but no development of sustainable capabilities, although linking connections can be observed. This suggests that linking connections are necessary as a structural condition to innovate, but are not decisive for the development of sustainable capabilities to innovate.

Networks that are successful in developing a sustainable capability to innovate show social learning processes that lead to stronger ties between network participants in regards to the relational and cognitive dimension of social capital. Social learning processes address the characteristics of the relational and cognitive dimension and appear to enable knowledge productivity within the networks. The relational and cognitive dimension can be described as the building blocks of social capital when looking at strong learning processes that lead to the development of sustainable capabilities in a network. However, a network with a developed relational and cognitive dimension in itself does not enable knowledge productivity. It also requires the structural dimension of linking connections.

It is difficult to see a general pattern in the interventions as depicted in the cross-site display Table 7.2. It seems that the interventions mainly focus at facilitating group interaction. The findings suggest that these interventions are necessary to structure the network activities and to ensure that meetings are organized and facilitated. Often, the interaction needs structure in order to work towards specific results. It is necessary to keep the network going. Less attention is given to the exploration of the urgent work-related question. Moreover, the facilitator does not pay specific attention to inviting relevant parties inside and outside the organization. The interventions are mainly focussed on stimulating bonding characteristics such as collective decision-making, plenary activities and collectively sharing relevant information.

8.1 Introduction

This chapter presents the conclusions of this study, its possible limitations and exploration of new directions for further research. The first section of this chapter recapitulates the objective of this study and the research questions. The next section presents the main conclusions by elaborating on the main research variables, their constituting elements and relationships. These insights and the main conclusions serve as a starting point to explore two conceptual frameworks. The first framework elaborates on the relation between social learning processes and the cognitive and relational dimension of social capital. The second framework focuses on specific phases in the development of knowledge productive networks. Henceforth, the scientific, practical and societal relevance of this study is reflected upon. In addition, the research design and its limitations are discussed. Observations are made on the internal validity, external validity and reliability of the case study research. The last paragraph explores possible directions for further research and study.

8.2 Objective and research questions

Despite the increased attention for the concept of social capital in the academic discourse, only recently, social capital theory is linked to implications for Human Resource Development (Kessels & Poell, 2004) and knowledge productivity (De Jong & Kessels, 2007; Melvin, 2004; Van Der Sluis & De Jong, 2009). Although some progress has been made in the field of social network development and learning (Cross, Parker, Prusak, & Borgatti, 2001) and social capital and lifelong learning (Field, 2005, 2008; Osborne, Sankey & Wilson, 2007), we still know very little about the way social networks affect learning and professional development. Therefore, the goal of this study is to develop a theoretical framework that describes how characteristics of social capital and social learning processes relate to knowledge productivity. The research objectives are threefold:

- To develop a theoretical framework to study characteristics of social capital in networks and their relation with social learning processes and knowledge productivity.
- To develop a research design to observe and analyze social capital and social networks that stimulate knowledge productivity.
- To provide tools for practitioners to facilitate knowledge productivity from a social capital perspective.

In order to achieve these objectives, an exploration of relevant literature and five exploratory case studies resulted in a conceptual framework (Chapter 4) leading to the following research question:

How do characteristics of social capital influence knowledge productivity in social networks?

This research question is decomposed in three specific sub questions:

- 1 How do the structural, relational and cognitive dimensions of social capital influence knowledge productivity in networks?
- 2 How do social learning processes in networks lead to improvements, innovations and the development of sustainable knowledge productive capabilities?
- 3 What kind of interventions in networks impact knowledge productivity from a social capital perspective?

8.3 Main conclusions: conceptual framework – version 3

This section presents the main conclusions of this study. Chapter 2 of this thesis presented relevant theories to explore the dynamics between social capital, social learning and knowledge productivity. Following an initial theoretical exploration, Chapter 3 examined five exploratory case studies to investigate how the theoretical propositions operate in practice. This led to a revised conceptual framework presented in Chapter 4. Chapter 5 elaborated on the research design of this study and Chapter 6 presented the within-site findings of a multiple case study research of 17 networks. The findings of the cross-case analysis in Chapter 7 are used to answer the central research questions of this study. The main variables that are examined were:

- The initiator(s) of a network
- The urgent work-related question
- The structural, relational and cognitive dimension of social capital
- Social learning processes within the network
- Interventions focusing on specific effects
- Knowledge productivity split into:
 - Improvements and innovations of work processes, products and services
 - The development of sustainable capabilities to innovate

Figure 8.1 presents a revised conceptual framework and depicts how the main variables relate according to the results of this study. The revised conceptual framework based on the cross-case analysis serves as input to answer the three research questions if this study.

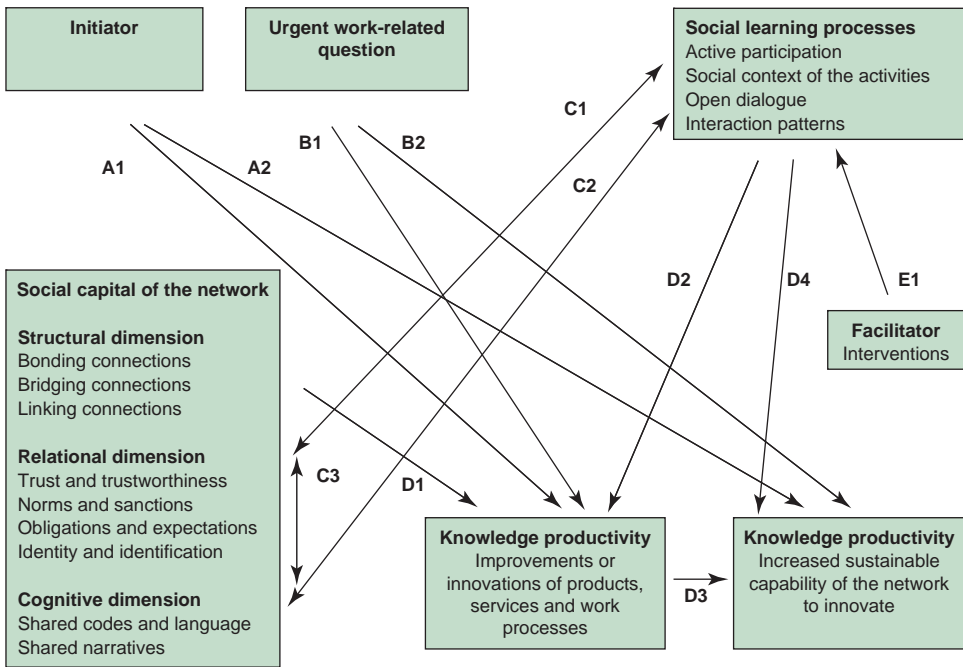


Figure 8.1

Conceptual framework to study social capital and knowledge productivity – Version 3

Legend: The boxes represent the main variables of this study. The arrows represent relations between the variables based on the cross-case analysis. The relationships are numbered (e.g. C3 or D1) and are referred to in the conclusions.

8.3.1 First research question: Relevant connections

How do the structural, relational and cognitive dimensions of social capital influence knowledge productivity in networks?

The findings reveal that linking connections are an important condition for realizing improvements and innovations. Bonding and bridging connections do not appear to enable specific forms of knowledge productivity. The relational and cognitive dimension of social capital is strongly developed in Group I networks that show improvement, innovations and the development of sustainable capabilities. In the next paragraph the relevance of linking connections is described. Then, the interaction between the relational and cognitive dimension, and the sustainable development of capabilities within a network is highlighted.

8.3.1.1 *Conclusion I: Relevance of linking connections in the structural dimension*

Bonding, bridging and linking connections describe the structural dimension of social capital. Networks with strong developed linking connections are a necessary condition for enabling improvements and innovations. D1 in Figure 8.1 visualizes the relationship between linking connections and improvements and innovations. Previous research on civic engagement and societal development (Putnam, 1993, 1995) and lifelong learning (Field, 2005, 2008) support this finding. Also studies into communities of practice (Wenger McDermott & Snyder, 2002) and open innovation (Chesbrough, 2006) support the importance of linking connections in social networks. Network participants from different organizational backgrounds bring in new knowledge and have different perspectives than network participants of the same organization. Field (2005, 2008) adopts the perspective of bonding, bridging and linking connections as a means of understanding different type of connections in regional communities. Van Der Sluis and De Jong (2009) explore this concept further, investigating whether certain types of connections enable specific learning processes. In this study, we do not focus on specific power positions in the network and therefore the hierarchical dimensions of linking connections (or so-called vertical connections) are not taken into account in this study (Woolcock, 2001; Woolcock & Sweetser, 2002).

Linking connections of a network are a necessary structural condition for enabling improvements and innovations. At the same time, a majority of the networks of this study does not include linking connections or experiences difficulty inviting external parties. These networks do not show signs of knowledge productivity. It appears that linking connections are often difficult to include within networks that aim to innovate. Structural hole theory (Burt, 1992) supports this finding, mainly because linking actors will not easily give up their network position because it gives them the opportunity to exploit their social network in terms of getting and passing through specific knowledge or expertise. If linking connections are present in the network, in the beginning of the network activities they often do not share the same vocabulary or perspective. Within the knowledge productive networks, the facilitator starts to focus on realizing the exchange of individual perspectives, ideas and objectives. Otherwise there is a risk that the potential of this added external perspective is not adopted and external parties stop participating.

The findings do not suggest that linking connections are a necessary structural dimension to develop sustainable capabilities in the network. Linking connections enable to connection of relevant parties or stakeholders with the innovation practice of the network. This stimulates learning that leads to improvement and innovation. The case study findings show that only networks that include linking connections are successful in realizing improvements and innovations. Including external relationships as input for innovation is also recognized in studies on informal learning (Doornbos, 2006), innovation (Tsai & Ghoshal, 1998) and networked learning (De Laat, 2006).

8.3.1.2 *Conclusion II: The relational and cognitive dimension and the development of sustainable capabilities*

Social learning processes impact the relational and cognitive dimension of social capital (C1 in Figure 8.1) and enable the development of sustainable capabilities (D4 in Figure 8.1). The networks in Group I of the cross-case analysis show high ratings of the relational dimension and cognitive dimension as well as highly rated social learning processes. Group II networks are not successful in developing sustainable capabilities and are ranked low on the relational and cognitive dimension. Networks in Group III do not show any knowledge productive results and equally have very low values of the relational and cognitive dimension. It appears that the relational and cognitive dimension are closely related to each other based on the rankings of the cross-case analysis. The cross-case analysis does not reveal in what way social learning processes and the relational and cognitive dimension of social capital interrelate. This is further explored in Paragraph 8.4.

8.3.2 *Second research question: Sustainable capabilities to innovate*

How do social learning processes in networks lead to knowledge productivity in terms of improvements, innovations and the development of sustainable capabilities?

The cross-case analyses reveals that Group I networks are not only successful in improving or innovating work processes, products or services, but also in developing sustainable capabilities to innovate. Apparently the creation process that leads to improvements, innovations is also a crucial condition for the development of sustainable capabilities. This is further elaborated on in the next paragraph.

8.3.2.1 *Conclusion III: Create something together*

Successful improvement or innovation of work processes, products or services is a prerequisite for networks to develop sustainable capabilities to innovate (D3 in Figure 8.1). The findings suggest that the process of collectively ‘creating something’ is a necessary condition for members to develop sustainable capabilities to innovate in the future. This entails that organizations that aim to stimulate the development of capabilities of employees to innovate and improve, should focus on directly working on urgent work-related questions. This conclusion is supported by the research by Verdonchot (2009) who described the importance of creating something together as a design principle for enabling innovation.

8.3.3 Third research question: Supportive interventions

What kind of interventions in networks impact knowledge productivity from a social capital perspective?

Although interventions are relevant for structuring meetings, inviting guests and sharing results, the study does not show a direct relation between interventions of a facilitator and knowledge productivity. However, two elements strongly impact knowledge productivity within networks. Namely the role of the initiator (A1 and A2 in Figure 8.1) accompanied by the urgent work-related question (B1 and B2 in Figure 7.1). To successfully answer this research question and identify specific interventions that support knowledge productivity the last paragraph presents an exploratory framework that proposes the development of networks according to five phases. The framework is built around the two elements that are discussed in this section: the role of the initiator and the urgent work-related question. It is suggested to adopt these two elements as a basis to further explore knowledge productive interventions in networks.

8.3.3.1 Conclusion IV: The role of the initiator

The initiator that first identifies an urgent work-related question and brings members together plays a crucial role in the success of a network. The initiator is critical both for the successful improvement and innovations as for developing sustainable capabilities in the network (A1 and A2 in Figure 8.1). Initiators are personally involved in the urgent work-related question, have a strong passion to develop new insight and have the capability to invite relevant members to participate.

Networks are fuelled by meaningful interaction between its members. This already starts when the initiator invites relevant members to participate. The invitation process is built around identifying relevant partners and expertise within and outside the organization. An important aspect of knowledge productive networks is that initiators invite relevant partners personally to join the network activities. Creating an attractive invitation process directly influences the development of the relational and cognitive dimension of social capital. Inviting members to participate is a process of exchanging expectations, specific ideas or vision about an urgent work-related question and is an important facet in networks or communities of practices (Wenger, McDermott, & Snyder, 2002). This can be described as a process of connecting interests and has also been identified as a crucial aspect in successful organizational change projects (Pillen, 2007). Members that are appointed by managers or supervisors drop out easily from the network. Inviting members in a personal way decreases the chance that supervisors or managers appoint members to participate in a network. According to recent research in innovation practices attention should be based on appealing to personal motivation instead of an organization urgency because curiosity, interest and passion for the subject matter plays a vital role in successful innovation practices (Verdonschot, 2009).

8.3.3.2 Conclusion V: The urgent work-related question

The urgent work-related question is critical for the successful improvement and innovations as well as for developing sustainable capabilities in the network (B1 and B2 in Figure 8.1). Especially networks that show signs of development of sustainable capabilities have a well developed urgent work-related question. External urgency support this, for instance by means of changing legislation that demands radical changes in work processes. Urgency refers not only to a rational urge that the relevant organization needs to change or develop due to external circumstances, but also to the personal feeling of network members who feel drive and ambition to tackle the problem or relevant issue (Verdonschot, 2009). Knowledge productive networks actively pay attention to creating a shared sense of urgency with a collective sense of direction and outcome.

8.4 Further exploration

In the next two sections the main conclusions are further explored by proposing two conceptual frameworks that may shed another light on the central research questions.

8.4.1 Relationship between social learning processes and social capital

This study shows that social learning processes and characteristics of social capital are strongly interrelated. However, based on the cross-case analysis, it is not clear in what way social learning processes and the relational and cognitive dimension of social capital interrelate. This is further explored in the next four paragraphs by proposing a framework of their interaction building on the revised conceptual framework in Figure 8.1. The framework is visualized in Figure 8.2. The findings suggest that social learning processes specifically address the combination and exchange of the relational and cognitive dimensions. In turn this leads to improvements and innovations (D2 in Figure 8.1) and eventually to the development of sustainable capabilities. The specific development of sustainable capabilities can be regarded as building of social capital as it strengthens ties within the network (Van Der Sluis & De Jong, 2009). Specifically, building long-term relationships is associated with aspects of trust and trustworthiness between network participants (Kogut, 1997).

8.4.1.1 Past experiences

Figure 8.2 proposes that sharing past experiences and creating shared interpretations is an important first step for exchanging knowledge and participating in knowing activities. This exchange process is fundamentally social as it relies on the quality of interaction between the network participants. Nahapiet & Ghoshal (1998) state that in this phase, the network structure is

an important enabler of the exchange process. Dense networks with affective relationships (such as bonding connections) influence individuals' motivation to engage in social interaction and thereby exchange knowledge (Lawler & Yoon, 1996 in: Nahapiet & Ghoshal, 1998). Often exchanging past experiences takes place by using narratives. Narratives – stories are thematic, and are seen as a powerful way of meaningful discourse as they explain why people behave in particular ways (Quinn & Dutton, 2005).

8.4.1.2 Shared vision

Besides reflecting on the urgency of the work-related question and past experiences within the relevant organization, an important step in the development of the network is to explore the shared ambition and objective of the network. Although scholars widely recognize that innovation generally occurs through combining different knowledge and experience, meaningful communication requires at least some sharing of context between parties to such exchange (Nahapiet & Ghoshal, 1998). This study argues that taking time to explore the shared language, vocabulary and narratives of network participants impact the combination capability of networks to successfully innovate. This process of combination and exchange within the network is fundamentally social and affects the cognitive dimension of social capital (see Figure 8.2).

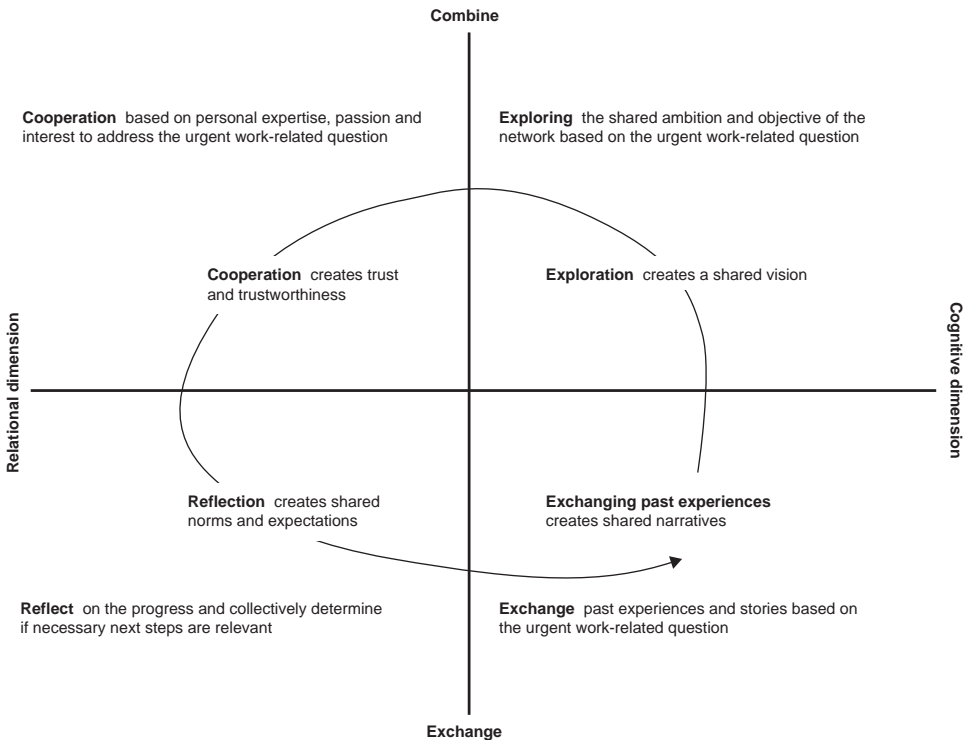


Figure 8.2

The relation between social learning and the relational and cognitive dimension

8.4.1.3 *Trust and trustworthiness*

Much of the evidence for the relationship between social capital and knowledge productivity highlights the relevance of the relational dimension of social capital. This study supports the proposition of Nahapiet & Ghoshal (1998) that the structural dimension has its primary impact on the conditions of accessibility and directly influences successful improvements and innovations within the network. Cooperation in a network based on personal expertise, passion and interest to address the urgent work-related question builds trust. Trust enables the willingness to participate in the network and creates an environment where participants are comfortable to be vulnerable to another party (Mishra, 1996). Trust is a crucial element in cooperation as it opens up access to individual's valuable knowledge, enables exchange and increases the anticipation of network participants to see value in such exchange processes. Trust and cooperation is a two-way interaction: trust lubricates cooperation, and cooperation itself breeds trust (Nahapiet & Ghoshal, 1998). Over time, this can lead to the development of a socially defined norm or value that represents a degree of consensus in the social system of the network (Coleman, 1990). This development is visualized in Figure 8.2.

8.4.1.4 *Norms and expectations*

Reflection is an important vehicle in a network to collectively discuss the progress and process in relation to the urgent work-related question. Reflection leads to new insights within the network, often by looking ahead and making new appointments or specific goals in relation to the urgent work-related question. Reflection enables the growth of obligations and expectations within the network. Obligations represent a commitment of duty to undertake an activity in the future (Nahapiet & Ghoshal, 1998) and are an important network driver. Reflection in a network enables to discuss progress and collectively determine necessary steps. This is a process of identification; it enhances concern for collective processes and outcomes. Nahapiet & Ghoshal (1998) state that it also serves as a resource influencing both anticipation and motivation to combine and exchange knowledge. Reflection also opens up discussion about personal or shared norms and even sanctions in the network. The norms and values that exist within the network establish a strong foundation for the (successful) creation of innovation. For instance the importance of social norms of openness and importance of cooperation rather than competition underpins the success of specific networks. In this study, norms and values can equally have a dark side: values that used to be valuable can lead to pathological rigidity (Nahapiet & Ghoshal, 1998). Examples can be read in Chapter 6, specifically the inhibiting and stimulating factors focus on these (un) productive norms and values.

8.4.2 Impact of the interventions

The findings of the case study do not suggest that specific interventions support forms of knowledge productivity in networks. Moreover, the role of the initiator and the urgent work-related question have a strong impact on knowledge productivity. These elements offer insight to what kind of interventions support knowledge productivity from a social capital perspective. In order to successfully answer the research question and identify specific interventions that support knowledge productivity the last paragraph adopts a framework that explains the development of networks according to five phases (see Figure 8.3). The various phases have been identified by a selection of network participants during the consultation session but where not part of the research framework during the research activities.

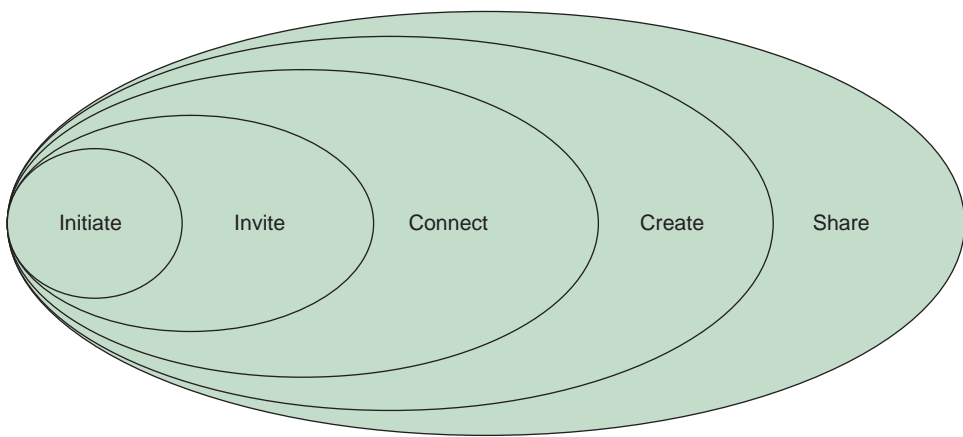


Figure 8.3

The development of a network in five phases

8.4.2.1 Initiating a network

The findings of the cross-case analysis show that the initiator plays a crucial role in the start of a network. The initiator is the first organizational member who identifies an urgent work-related question in his or her organization. Cases in Group I that show both signs of knowledge productivity are initiated by professionals with strong passion towards the topic. Also, the initiator feels responsible for inviting specific participants to join the network and is granted authority in the specific domain. In the initiation phase the initiator focuses on the exploration the urgent work-related question.

8.4.2.2 Inviting participants to participate

The initiators of the networks aim to improve or radically innovate products, services and work processes. This can be described as a social learning process. Social learning is not so much about inviting a relevant fraction of the

management team. A network approach requires community participation in order to leverage more learning potential due to different perspectives and expertise (Wenger, McDermott & Snyder, 2002). In order to create a network, colleagues and external experts are invited to participate in the network. Without participants there is no network. The findings indicate that initiators who locate and invite relevant members on a personal basis are more successful in enabling knowledge productivity than initiators who invite participants via group e-mails or a general invitation during existing team meetings. Table 8.1 gives an overview of the invitation processes of the case study networks and shows that personal invitations are connected to realizing improvements and innovations, but not decisively to the development of sustainable capabilities.

Table 8.1 Knowledge productivity and the invitation process of the initiator			
<i>Group</i>	<i>Invitation process of network participants</i>	<i>Improvements and innovations</i>	<i>Developing sustainable capabilities</i>
I	Personal invitation of the initiator focusing on the informal network	Successful	Successful
II	Personal invitation of the initiator focusing on the informal network	Successful	Unsuccessful
III	General invitation of the initiator focusing on specific hierarchical functions	Unsuccessful	Unsuccessful

The initiators of the networks reflected on these findings in a consultation session. A number of elements seem to be vital in the invitation process of members to participate in a network:

- Locate members through an informal network.
- Investigate if members have a passion, curiosity and personal connections related to the urgent work-related question.
- Invite (all the) relevant members to participate in the network, inside and outside the organization.
- Use a personal and attractive approach when inviting members.

8.4.2.3 *Connecting interests*

The networks that are knowledge productive paid attention to exchanging personal beliefs, motivation and drive to participate in the network. The networks that develop sustainable capabilities focus on exchanging these personal ambitions in the beginning of the network activity. By briefly exchanging these personal opinions, beliefs and ambitions the members implicitly create a shared sense of urgency and an objective to work on. Often a facilitator structures this kind of interaction stimulating the identification

of a shared ambition. Connecting interests is a form of getting to know each other on a professional level. This is also referred to as relationship building events (Gustavsen, 2001) with the objective to create a joint vision that on the one hand pursues individual learning needs while on the other creates a joint vision (Pillen, 2007). Network participants mention the importance of this process in order to gain better understanding of personal motivation and shared ambition in the network. In the consultation session three aspects are mentioned as important elements to focus on in this phase:

- Frequently pay attention to stimulating the exchange of personal motivation and the ambition to participate in the network.
- Ensure that members can connect their personal urgent work-related question with the ambition and direction of the network.
- Organize support of a facilitator if necessary to structure the interaction and work towards a shared goal and objective.

8.4.2.4 *The creation process in networks*

Connecting interests in the network is the starting point of the design of specific activities. Based on the objective and ambition of network participants an important design step needs to be made: what kind of activities will the network organize in order to tackle the urgent work-related question? All of the 17 networks in the case study organized network meetings over a longer period of time, with a minimum of six months. When comparing the meetings, a variety of procedures are visible. It has already been established in the cross-case analysis that interventions by a facilitator within a network in itself do not enable knowledge productivity. Interventions are necessary to keep the network going, for instance by organizing the meetings, facilitating discussion and by offering attractive procedures to work on the urgent work-related question. During the consultation session the network initiators identified four building blocks that are relevant in the creation process in the network:

- 1 Design activities based on a rough timeframe in order to monitor the progress
- 2 Choose a procedure for the meetings and stimulate network participants to facilitate the meetings.
- 3 Regularly reflect on the process and the content, but avoid a reflection overkill that inhibits motivation of network participants.
- 4 Ensure the ownership within the network and avoid external interference of not participating colleagues or external experts.

8.4.2.5 *Sharing the findings within and outside the network*

Networks that are identified as being knowledge productive combine the role of a strong initiator with an internal and external urgency on the work-related question. The networks that are successful in realizing improvements and innovations presented their findings in a final network meeting within relevant organizations of the network participants. This resulted in diffusion

and sharing of relevant knowledge and insight. Often the findings are a starting point for new initiatives or activities. Here, the network can spawn a new initiator who is curious to setting next steps in relation to the work-related question. In this phase it is also important for the network participants to be visible in their organization, connect the findings to management objectives in order to keep them connected to the realized results and to celebrate success.

8.5 Contributions of this research

Chapter 1 presented the intended relevance of the present research for theory building, practice and society. The main findings may offer contributions which this section reflects on.

8.5.1 Scientific relevance

This study aims to contribute to existing theory by better understanding how characteristics of social capital influence social learning processes that lead to knowledge productivity in networks. The objective of this study is to explore the social context in which learning takes place; this is considered an important future task of HRD research (Berings, 2006; Berings, Poell, & Gelissen, 2008). By developing and validating a conceptual framework that offers insight in what way characteristics of social capital relate to knowledge productive learning processes this ambition has been realized. The multiple case study research has revealed that linking connections within networks are a necessary structural condition to gradually improve and radically innovate work processes, products and services. Furthermore, the study reveals that social learning processes within networks directly address the relational and cognitive dimension of social capital. Moreover, social learning processes are enablers of building social capital through the exchange, exploration, cooperation and reflection in a network. The interaction of social learning and social capital is a prerequisite for successful innovation. The research findings shows that the role of the initiator of a network who feels strong ownership and personal commitment to an urgent work-related question is crucial to realize knowledge productivity.

8.5.1.1 *Reflecting on the research design*

Finally, the study led to a revised conceptual framework to examine the relationship between social capital and social learning processes within networks with the intention to innovate. An important foundation in this study is the research design. It uses a developmental approach (Van Den Akker et al., 1999), in which ‘real-life’ urgent work-related questions are the starting point of the research activities. The research design shows overlap with characteristics of action research. Action research is an interactive process that balances problem-solving actions implemented in a collaborative context

with data-drive analysis or research (Reason & Bradbury, 2006). Aim is to understand underlying causes enabling future prediction about personal and organizational change. This type of research design aims to provide suggestions for closing the gap between applied use and advanced fundamental understanding of academic research (Van De Ven & Johnson, 2006). In HRD research, the lack of practical usability is seen as a fundamental problem and a future challenge (Sanders, 2005). The design of this research offers suggestions to close this gap between theory and practice. In hindsight, the added value for organizations to participate in this kind of research activities lies in the attractive principles of organizational change connected to participative action research (Reason & McArdle, 2008). During the research activities, the network participants are invited to participate as co-researchers to reflect on the observations and to explore the meaning of the results. The research design in this study also investigates if the network participants are successful in improving and innovating work processes, products and services. In this way, the research design focuses more on the actual design and implementation process of the network. Four criteria especially are relevant when applying the research design of this study:

- 1 Combine practical knowing (e.g. solving an urgent work-related question) with sound academic methodology. Examples are the combination of multi-rating techniques and the consultation session with network participants.
- 2 When performing action research in networks it is hardly possible to do participative research *on* persons. Network participants are hesitant to cooperate in these kinds of activities. In stead focus on doing research *with* network participants is more fruitful (Reason, 2001; Heron & Reason, 2006). A relevant example is the design meeting (Paragraph 5.3.3) in which initiators of networks have the possibility to explore the urgent work-related question and make objectives explicit.
- 3 Keep close to the actual problem or challenge of the network. The research design should be created in such a way that its primary focus lies on the urgent work-related question and that the findings are supportive to solving the question at hand. Network participants mention that working with a research design that combines close observations and group interviews is supportive to successfully work on the urgent work-related question.
- 4 Studying knowledge productivity requires researchers who are able to identify practical knowledge that is visible in behavior and actions by studying the improvement or radically change of work processes, products or services. An important activity of identifying improvements and innovations is whether managers or peers that are not participants of network observe visible results in work processes, products and services.

8.5.2 Practical relevance

This study aims to contribute to practice by providing HRD practitioners with a scientific basis for their interventions in order to facilitate knowledge productivity in networks. The results of the research are useful in several ways. One of the sub questions of this research is: Which interventions influence specific dimension of social capital with the objective to increase knowledge productivity? The findings suggest that the HRD practitioner should aim at developing specific capabilities that support the initiator to explore the urgent work-related question and to bring together relevant participants to form a network. The phases in the development of a network, presented in Paragraph 8.4.2, offer such practical guidelines and capabilities. Instead of facilitating and structuring meetings it is important to support initiators, identify relevant partners and fuel passion and curiosity (Sprenger, Pillen & De Jong, 2007).

Second, the research activities specifically aimed at inviting network participants as co-researchers. Most of the network participants took part in sessions such as reflection meetings, validation meetings or exchange meetings between different networks. A significant part of the members actively supported the research activities by participating as co-researcher, interviewing each other or by reviewing preliminary reports. In this way the network participants have developed capabilities to reflect on their own innovation practice and have experimented in day-to-day work how to use research as a vehicle for innovation in the work context. In total, more than 550 participants took part in the research activities in 22 case studies. In this way, the research project also aimed to contribute directly to practice.

8.5.3 Relevance for society

This study aims to contribute to society by gaining insight into how characteristics of social capital influence knowledge productivity within networks. The cases that are part of the study consisted of networks with members from different organizations, across sectors that engaged with each other. Some networks included students, external experts, family members of patients in psychiatric clinics or even the patients themselves. The research results indicate that participants who show personal ambition and passion to the subject for a large part determine successful innovation in networks, thus networks that enable sustainable knowledge productivity within society should search for personal drive and passion. In addition, a majority of the work-related questions had significant societal relevance. Sexuality in health care, prevention of dropouts in vocational training, designing a new school for leisure; these are examples of relevant question at a societal level. This might indicate that a societal perspective is more fruitful when dealing with innovation than a traditional organizational perspective as it focuses on the process of interaction between professionals rather than on the organization as a static entity wherein innovation takes place.

8.6 Critical reflections on the research activities

Each study deals with limitations, either caused by imperfections in design or by rational choices. This section reflects on the criteria for assessing the quality of this study and discusses possible limitations. Against three criteria this research project is evaluated (Cooper & Schindler, 2003; Yin, 2002):

- Internal validity
- External validity
- Reliability

An additional form of validity which is referred to as ecological validity (Brewer, 2000) is explored as well. Finally the criteria for evaluating the quality of the research results are addressed in the last paragraph.

8.6.1 Internal validity

Validity in general refers to the extent of establishing correct operational measures for the concepts being studied (Cooper & Schindler, 2003; Yin, 2002). In case study research an accepted classification of internal validation consists of two major forms: construct validity and content validity.

8.6.1.1 Construct validity

In order to achieve construct validity, observable phenomena need to be identified that cover the theoretical concepts adequately (indexing) (Cooper & Schindler, 2003), and the right measurement instrument needs to be developed to determine these phenomena (operationalization) (Boer, 2005). In this research, the exploratory case study of five networks in conjunction with a literature search determine the specific variables that are considered to indicate the theoretical concepts social capital, social learning processes and knowledge productivity.

A way to strengthen the operationalization of data collection is through triangulation. In general triangulation is the application of several research methodologies to study the same phenomenon (Denzin, 1978). It is a form of crosschecking data. Especially, data triangulation, investigator triangulation and methodological triangulation are well employed in this study. This study involves a research design that includes studying phenomena over time and in different settings and purpose. In this light, the study used a large set of case studies ($n = 17$) that offer an opportunity to validate the stability of constructs across different organizational contexts. In addition, the networks are studied over a period of time, with a minimum of six months for each case study. Investigator triangulation involves using multiple researchers. In this study the principal researcher worked with a team of nine researchers that are all trained to use the research methods in the 17 case studies. Besides this, three researchers independently rated the within-site displays in order to enable a cross-case analysis on the basis of quantitative data. The methodological triangulation focuses on using at least three methods. This study used

different research techniques, such as interviews, observations, group meetings, document study, reflection meetings as multiple sources of evidence in the case studies.

8.6.1.2 *Content validity*

In this study, the main concepts like social capital, social learning processes and knowledge productivity are carefully defined. This is done by a first literature review in Chapter 2 and an exploratory case study phase in Chapter 3. The choice in defining the central variables of the study is based on experiences in previous research activities (Van der Sluis & De Jong, 2006). Secondly, the research concepts were presented in a refereed conference paper during an international conference on social network analysis in 2007 (De Jong, 2007). Furthermore, the research concepts were presented to a group of social capital experts and based on their feedback the research design was further developed.

8.6.2 *External validity*

External validity may be conceptualized as a problem of representativeness between sample and population. Multiple case study research is more representative of the population of interest than single case study research. This study is based on a multiple case study of an exploratory case study phase of 5 networks and a multiple case study of 17 networks. Case study research does not primarily aim to generalize to a larger universe. The cases should not be regarded as elements of a random sample or a population (Kessels, 1993). The findings will not lead to generalization to a wider universe nor to prescriptive theory. However, the large number of cases that have been investigated allows for theoretical replication (Yin, 2003), enabling future quantitative testing.

8.6.3 *Ecological validity*

For a research study to possess ecological validity the research methods, materials and setting must approximate the real life situation that is under investigation (Brewer, 2000). This study emphasizes exploring characteristics of social capital within networks in such real-life settings. This is done by longitudinally observing networks and by working with the network participants as co-researchers. In doing so, the network can actively reflect and validate the findings of the study and adopt them for their direct benefit. This approach increases the ecological validity. However, the ecological validity should not be mistaken with the external validity, which deals with the quality of a study to generalize its findings to a wider population.

8.6.4 *Reliability*

Various measures have been taken to increase the robustness of the research design. The principal researcher carefully documented the procedures in the

exploratory case study phase and multiple case study phase. This led to a case study protocol depicted in Chapter 4 and Appendix C. The co-researchers were trained to use the research method and worked according to a set of specific guidelines (see Appendix C). Biases could occur as network participants may tend to report what they believe the researcher expects them to see (Verdonschot, 2009). This has been overcome by using multiple sources of evidence. When interview findings or observations of network meetings identified forms of knowledge productivity, these were checked within the relevant organization. For instance, in several cases managers or colleagues of network participants were interviewed to gain additional insight in what way the improvement or innovation of work processes, products and services were visible in the day-to-day work environment.

8.6.5 Limitations of this study

The next four paragraphs discuss potential weaknesses in this study when confronting the research framework with the criteria for evaluating a research design.

8.6.5.1 *High representation of educational institutes*

The organizational settings of the networks do not include product-related industries. The participating organizations are all service-based, with a majority focusing on educational activities. The networks of the Public Information and Communication Office, the ROC Midden Nederland and Limburg Leisure Academy all focus their core activities on education and training. This imbalance in the selection of cases leads to two relevant reflections:

- 1 Educational institutes are more comfortable in collaborating with external partners to innovate. Especially the development in Dutch curriculum design to include the actual work field and future students in the design process is relevant in this perspective. For this kind of organizations inviting external parties has become a natural process. This could critically impact the relevance of the linking connections within the case studies.
- 2 Organizations in the field of education lack the fierce competition that commercial organizations are faced with. For educational institutes, collaboration with external partners is not seen as a potential risk.

This imbalance in the selection of cases also leads to an additional reflection. The nature of case study research requires being modest about making generalization to other organizations or networks. The aim of this study was to develop a conceptual framework that sheds light on the interaction between social capital and social learning processes within networks. As this is a relatively new field in HRD research, the nature of this study demands an exploratory design of the research activities. Applying the findings of this research to a wide variety of organizational contexts will lead to imprudent views.

8.6.5.2 *Interrelatedness between the initiator and the urgent work-related question*

The case study findings show a strong relationship between the initiator (A1, A2 in Figure 8.1) and improvements, innovations and the development of sustainable capabilities. Also the link between the urgent work-related question (B1, B2 in Figure 8.1) and improvements, innovations and the development of sustainable capabilities is strong. One could argue that the initiator and the urgent work-related question are inherently related and cannot exist without each other. The initiator first identifies the urgent work-related question and is often very motivated and ambitious to organize activities to tackle this. In the network case studies, the initiator is the first to feel a sense of urgency and to come up with an innovative solution. Based on this sense of urgency the initiator tries to find relevant partners to join him or her in a network. For the role of the initiator, the process of inviting relevant network participants and exploring the urgent work-related question are therefore inherently interrelated. In the research activities these two concepts are separated in order to conceptually being able to differentiate between the content (the urgent work-related question) and the relations between the initiator and other actors, as well as the process of inviting network participants.

8.6.5.3 *The role of the different co-researchers*

In total nine co-researchers studied the 17 network case studies. The researchers are trained in using the research method. In the research design of this study, the network participants are also considered as active researchers who participate in reflection meetings and validate the findings. This requires the co-researchers to be able to meet the demands and expectations of the knowledge stream (objective of the research) as well as the practice stream (objective of the network). This suggests that the co-researcher is moving back and forth between the two worlds of solving problems in the network and collecting research data. To separate these different roles the research design included the criteria to work with independent co-researchers who carried out the majority of the activities. Moreover, the research findings were discussed during validation sessions within the network and also later on during the cross-case consultation session.

8.6.5.4 *Data reduction of the 17 case studies*

Due to the vast amount of data, data reduction is a critical component in the research design when dealing with 17 longitudinal case studies. Without considerable data reduction it is not possible to compare the findings to the conceptual framework. For this reason the observations are reduced in the within-site displays. There is a potential risk of making possible errors in this analysis by losing essential information. This has been tried to overcome by inviting the network participants to validate the observations. This enabled the principal researcher to better describe the variables and observed indica-

tors in relation to the conceptual framework. These within-site displays were then rated and compared to each other. To improve the quality and reliability of the rating process, three researchers independently rated the observations and critically discussed their results with the principal researcher, hereby reducing the threat of bias through data reduction. One dissident case (Case 17, Chapter 6) was identified and the researcher studied the complete case history again. The procedure of the data reduction activities is described in Chapter 6.

8.7 Directions for further research

In addition to looking back on the research activities, this thesis concludes with looking into the future by providing some directions for further research. These directions are partly based on the shortcomings of this research, and partly on the findings, which suggest further exploration and quantitative testing.

8.7.1 Exploring different types of organizations

This study composed mainly out of service oriented organizations, predominantly active in educational settings. It is relevant to investigate other types of organizations, like industries (what are the consequences of product-oriented innovation on the conceptual framework?) or Internet based communities (how does the conceptual framework relate to innovation that emphasizes online interaction?).

8.7.2 Exploring tipping points

Some of the networks that took part in the case study research show clear signs of increased sustainable capabilities to innovate. It could be argued that the development of sustainable capabilities occurs during specific learning processes in the network: so called tipping points. The nature of this study does not explore these possible explanations. It is interesting to study the database in retro-perspective and identify characteristics of these tipping points. Such findings could lead to research activities to identify qualities of the leaning environment that enable the development of sustainable capabilities to take place.

8.7.3 Working with design studios

The findings of the case study research suggest that specific interventions aimed at supporting the initiator and the exploration of the urgent work-related question enable promising network activities to successfully stimulate knowledge productivity in networks. It is worthwhile to study these interventions more in detail. For instance by designing a research methodology that enables the study of networks in design studios in which

participants can experiment with specific interventions (Van Den Akker et al., 1999; Verdonschot, 2009). The research design could include the five phases of developing a network, as explored in Paragraph 8.4. By creating these design studios the effect on knowledge productivity can be monitored more precisely.

8.7.4 Exploring social learning processes

There is not yet a clear body of knowledge on the characteristics of social learning processes in networks. In this study several elements of social learning have been explored. Future research should focus on these characteristics. For instance by combining the findings of this study with the work on communities of practices by Wenger, McDermott and Snyder (2002). Specifically, by combining network structures with learning processes, investigating what kind of learning processes constitute social learning processes and how they are related to specific social structures.

8.7.5 Including social network analysis

During the start of the study it was considered to include social network analysis (SNA) into the research methodology (Scott, 1991). The ambition to closely monitor and follow the network activities in order to validate the conceptual framework led to not following through on the SNA. Although SNA gives a precise picture of patterns of collaboration, it is difficult to achieve accurate views of the development of a network of time. In addition to the exploratory nature of the study and the aim to investigate the characteristics of social capital in relation to social learning processes (multiple variables), SNA did not appear to be a suitable methodology to include. Now the conceptual framework is validated it is interesting to repeat the research activities and over time mapping the social network of the group members. By applying SNA in this way the research activities can include reflections on changes in density, closeness and centrality (Burt, 1992; Scott, 1991), but also the quality and quantity of bonding, bridging and linking connections (Woolcock, 2001) within a relevant network.

Summary

Linking social capital to knowledge productivity An exploratory study on the relationship between social capital and learning in knowledge-productive networks

Chapter 1

Chapter 1 presents the starting point of this study, explores past research and etiology leading to the research objective of this study. Also the scientific, practical and societal relevance of the research is presented. In an environment where knowledge is the main organizational driver, the ability to learn fast, adapt regularly to new challenges and acquire technical and interactive capabilities to continuously improve and innovate is crucial (Harrison & Kessels, 2004). This ability is referred to as knowledge productivity (Kessels, 1995, 2001b). Knowledge productivity is the process of identifying, gathering and interpreting relevant information, using this information to develop new capabilities and applying these capabilities to improve and radically innovate work processes, products and services (Kessels, 1995, 2001b). Increasingly innovation is studied by examining network structures and social capital theory (Adler & Kwon, 2002). Within the field of HRD there is a sense of urgency to clarify the way social capital and social networks impact learning that leads to innovation (Kessels & Poell, 2004). It is the aim of this study to develop a theoretical framework on how characteristics of social capital explain knowledge-productive processes within networks. Second aim is to develop a research design to observe and analyze social networks and social capital that supports knowledge productivity. Final aim is to provide tools for practitioners to intervene and thereby improve the quality of social capital to facilitate social learning.

Chapter 2

Chapter 2 explores relevant literature describing the interaction between knowledge productivity and social capital theory. The objective of this chapter is to create a first conceptual framework of how social capital and knowledge productivity interrelate. In the field of HRD, several scholars have made helpful descriptions of social capital by focusing on a typology of different relations and ties between people (Woolcock 1999, 2001; Field, 2008; De Jong & Van Der Sluis, 2009):

- Bonding connections, which closely tie together people from a very similar background, such as family and close friends.
- Bridging connections, which bring together people from fairly similar backgrounds but more loosely, such as people with a shared interest.
- Linking connections, which brings together people from dissimilar backgrounds.

The perspective of social learning, argues that people adopt very particular abilities through their social connections. Such abilities are derived from practices of cooperation, whether formalized or through looser connections (Field, 2005). This association in groups, organizations and communities that enable learning are simultaneously the places where people experience the role of reciprocity and trust that shape their attitudes and behavior (Field, 2005). This value is described as social capital. This study adopts the dimensions of social capital defined by Nahapiet and Ghoshal (1998): the structural, relational and cognitive dimension. The structural dimension is based on the fundamental proposition that network ties provide access to resources (whom you know affects what you know). It describes ties and actors in a network. The structural dimension of social capital can be made operational through bonding, bridging and linking connections. The relational dimension describes the quality of relations, such as trust and trustworthiness, social norms and sanctions, obligations and expectations and identification. The cognitive dimension concerns the shared meaning and interpretation of network participants. This can be described through shared language and codes (Kogut & Zander, 1996), and shared narratives (Putnam & Feldstein, 2003). Knowledge productivity is split into two areas: visible improvements and innovations and the learning processes that lead to such improvements and innovations.

Chapter 3

It is the objective of this chapter to explore real-life settings in which different types of social networks within and across organizations are able to realize forms of knowledge productivity. The first empirical encounter serves as input for the conceptual framework of this study in Chapter 4. The first set of case studies focuses on three intra-organizational networks. These networks consist mainly of bonding and bridging connections. The second two case studies focus on inter-organizational networks with mainly linking connections. The findings reveal that the presence of linking connections is associated within forms of knowledge productivity. Based on the case study findings it is difficult to abstract a general pattern on the relational dimension of social capital. This suggests additional research to explore the factors within this dimension. The cognitive dimension of social capital appears strongly developed in all the networks of the exploratory case study. Mainly aspects such as a shared language, specific stories and the awareness of certain codes and or agreements are dominant. Based on these findings it is difficult to abstract

general conclusions on the cognitive dimension. Therefore, it is necessary to reinvestigate the cognitive dimension in further empirical research. Personal learning objectives are rated low in the cross-case analysis. It appears that deliberate learning objectives are difficult to combine with encounters of unclear, puzzling problems. It appears that networks that frequently explore personal motivation of the network participants are successful in realizing knowledge-productive results. Four of the five networks that are studied in this exploratory case study are successful in achieving knowledge-productive results in terms of improvements or radical innovation in work processes, products or services. It is not quite clear what type of learning processes result in specific forms of knowledge productivity based on this exploratory case study research. The five case studies also provide room to identify unexpected results. Six supportive factors are identified that stimulate knowledge productivity in networks:

- 1 Ensure a sustainable connection with the day-to-day work.
- 2 Increase the visibility of the networks within the organization and actively communicate results.
- 3 Foster formal and informal appreciation.
- 4 Promote active process facilitation of meetings.
- 5 Facilitate a congruent vision upon learning within the organization.
- 6 Stimulate the active support and participation of management.

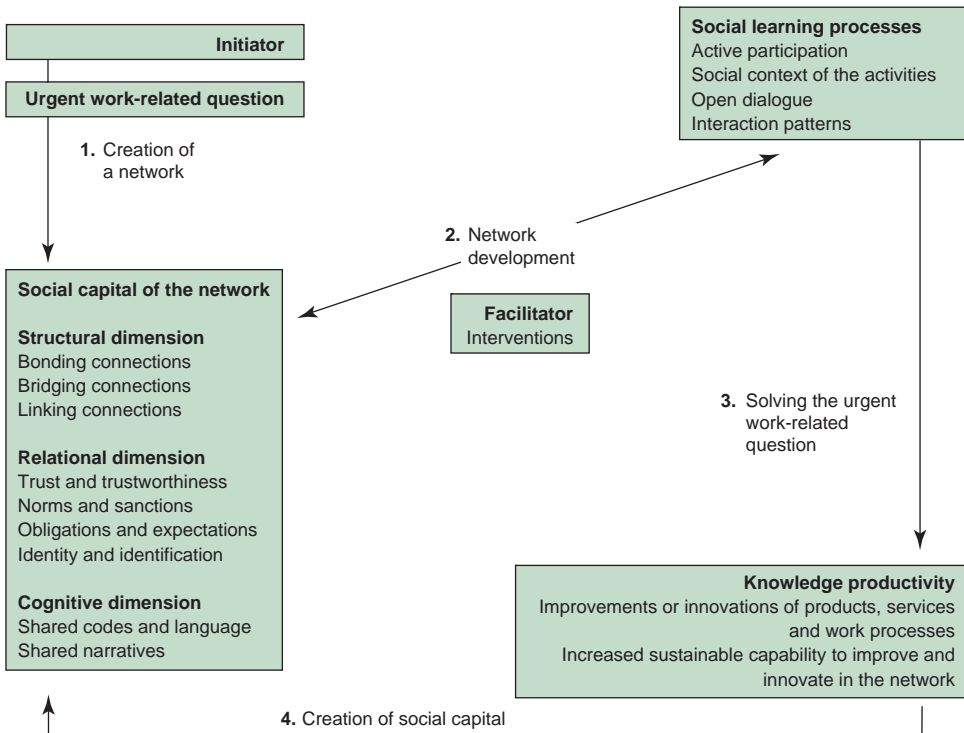


Figure 1
Conceptual framework to study social capital and knowledge productivity in networks

Networks that do not have bridging or linking connections create knowledge that often is not absorbed by other organizational parties such as relevant colleagues, teams or managers. This suggests that bridging and linking connections are important to share relevant knowledge within the organization. Network participants experience difficulty in describing a radical change in operating procedures. In addition, knowledge productivity in terms of radical changes in operating procedures, products and services can take some time before they are clearly developed and implemented. This also suggests further exploring the concept of learning and making it operational in such a way that participants are comfortable with it. Based on the expected and unexpected findings of the five case studies, several reflections on the research process are identified that serve as input for a revised research design in Chapter 5.

Chapter 4

Based on the insights presented in the previous chapter, Chapter 4 studies in depth the following main research concepts:

- Initiator(s): person(s) who starts a network based on a relevant question.
- Urgent work-related question: description of an urgent work-related question with a shared sense of direction for a possible outcome, a general goal or objective.
- Structural dimension: social structure of a network consisting out of bonding, bridging and linking connections.
- Relational dimension: the quality of relations within the network identified by the indicators trust and trustworthiness, norms and values, sanctions, obligations and expectations, identity and identification.
- Cognitive dimension: interpretations and shared meaning in the network based on shared codes and language and shared narratives within the network.
- Social learning processes: the ability to learn from each other based on meaningful interactions in the network leading to the development of shared capabilities.
- Knowledge productivity split into:
 - Improvements and innovations in products, services and operating procedures.
 - Development of sustainable capabilities of network participants to successfully work on future innovative work-related questions.
- Interventions: deliberate activities in the network focusing on specific effects.

Based on this elaboration a conceptual framework is presented in Figure 1, followed by the research questions of this study.

The following objectives are leading the second series of studies:

- To develop a theoretical framework to study characteristics of social capital in networks and their relation with social learning processes and knowledge productivity.
- To develop a research design to observe and analyze social capital and social networks that stimulate knowledge productivity.
- To provide tools for practitioners to facilitate knowledge productivity from a social capital perspective.

In order to reach the above objectives, the following central research question needs further investigation:

How do characteristics of social capital influence knowledge productivity in social networks?

An important conjecture in this study is that learning processes that lead to knowledge productivity are seen as a social process. This social process can be studied in networks. Social learning processes should be analyzed in the context of networks where individuals work together to solve work-related questions. Consequently the conceptual framework in this chapter needs to be tested. The following set of questions are relevant in order to study the specific characteristics of social capital, the related learning processes in social networks and the resulting knowledge productivity:

Question I: How do the structural, relational and cognitive dimensions of social capital influence knowledge productivity in networks?

Question II: How do social learning processes in networks lead to improvements, innovations and the development of sustainable knowledge-productive capabilities?

Question III: What kind of interventions in networks impact knowledge productivity from a social capital perspective?

The next chapter will present the research design based on the conceptual framework presented in this chapter and its research questions.

Chapter 5

This chapter describes the design of the case study research. A multiple case study is chosen with a longitudinal character that studies each network between a timeframe of 6 to 12 months. During this time, the researcher observes network activities, follows participants during interaction at the workplace and interviews the participants. Based on the data collection, several reflection meetings are organized by the researcher to reflect on the findings and validate outcomes. The research is carried out in 17 case studies. The unit of analysis in this research are networks of individuals based on urgent work-related questions. The research design is created in such a way that it facilita-

tes reflection and validation of the findings within and across the networks. Seven steps can be identified that each network goes through:

- 1 Design meeting: together with the initiator(s) of the network, the urgent work-related question is clarified and connections with the research objectives are explored.
- 2 Design of an activity plan: bases on the exploration in the design meeting, specific activities and future steps are identified. This is translated into a plan.
- 3 Creating organizational support for the research: the network organizes support from management or other relevant stakeholders in order to organize the network activities.
- 4 Carrying out the research: within the network, the progress, activities and outcome are monitored and relevant data is collected and analyzed.
- 5 Validation of research findings: the findings and results of the research activities are validated in the network by their members. First conclusions are presented, and then several meetings offer time to reflect upon these findings.
- 6 Reflecting on the findings: in this phase also the organizational benefits of the network activities are explored. It is determined if the findings support knowledge productivity on the organizational level and in what way it answers the initial work-related question.
- 7 Sharing the results: the obtained results and future activities of the network are shared within the organization and with relevant external partners.

The conceptual framework as presented in Chapter 4 offers the starting point of investigating the research variables. The empirical data consist of observation reports, interview transcripts, diaries of participants and field notes. Also, several reflection meetings were organized with network participants to validate the findings of the case study. For each network study two researchers carried out the research activities. The researchers are trained to use the conceptual framework and methodology.

Chapter 6

Chapter 6 presents the findings of the second series of case studies. The second series of case studies consisted of 17 networks. The research activities focus on these 17 networks across 14 organizations geographically dispersed in the Netherlands. The research activities took place between December 2007 and May 2009. The study of these networks serves as an input to validate and possibly extend the conceptual framework presented in Chapter 4. Each within-site case consists of a case description resulting in a presentation of the findings. The framework of Chapter 4 serves as a structure for analyzing the findings of the case studies. To reduce the vast amount of data of the 17 case studies within-site cases are created. The within-analyses provide material for comparison in a cross-site analysis in Chapter 7. The data reduc-

tion described in the case displays is realized by rating the main variables of the study. To improve the reliability of the rating, three researchers individually assessed the findings of each network.

Chapter 7

Chapter 7 compares the 17 case studies in a cross-site analysis. The cross-case analysis ranks the cases according to their dependent variable: knowledge productivity. The effect variable consists of two components: the results of the improvements, innovations and secondly the increased sustainable capability to innovate. When observing the cross-site analysis, three categories of cases emerge: the cases ranked as positions 1 to 8 show concrete improvement, innovations and an increased sustainable capability. The cases that are ranked as 9 to 12 only show concrete improvements and innovations. The cases that are ranked as 13 to 17 show neither signs of concrete improvements, innovations nor signs of increased sustainable capability.

The networks that show development of sustainable capabilities are also successful in realizing improvements and innovations. It seems that without realizing specific improvements and innovations networks do not develop sustainable capabilities. This suggests that improving or innovating a product, service, or operating procedure is a necessary prerequisite in order to build new capabilities to improve and innovate future products, services and operating procedures. When studying the role of the initiator of the networks there is evidence that the initiator has a strong role in bringing relevant participants together, is visible within his or her organization and is passionate about the topic at hand. In addition, the initiator shows enthusiasm and drive to work towards a specific goal. The presence of an urgent work-related question is very relevant for knowledge productive networks. Networks that are both successful in realizing specific improvements and innovations and develop sustainable capabilities are ranked high for the urgent work-related question.

Linking connections are necessary for enabling improvements and innovations to occur within networks. Although linking connections are necessary as a structural condition to innovate, they are not decisive for the development of sustainable capabilities to innovate. Networks that are successful in developing a sustainable capability to innovate show social learning processes that lead to stronger ties between network participants in regards to the relational and cognitive dimension of social capital. Social learning processes influence the characteristics of the relational and cognitive dimension in a network and appear to enable knowledge productivity. The relational and cognitive dimension can be described as the building blocks of social capital when looking at strong learning processes that lead to the development of sustainable capabilities in a network. However, a network with a developed relational and cognitive dimension in itself does not enable knowledge productivity. It also requires the structural dimension of linking connections. This is visualized in Figure 2.

As far as the observed interventions concern, it seems that they mainly focus at facilitating group interaction. The findings suggest that these interventions are necessary to structure the network activities and to ensure that meetings are organized and facilitated. Often, the interaction needs structure in order to work towards specific results. It is necessary to keep the network going. The observed intervention focus less on the exploration of the urgent work-related question. Moreover, the facilitator does not pay specific attention to inviting relevant parties inside and outside the organization. The interventions mainly focus on stimulating bonding characteristics such as collective decision-making, stimulating plenary activities and collectively sharing relevant information.

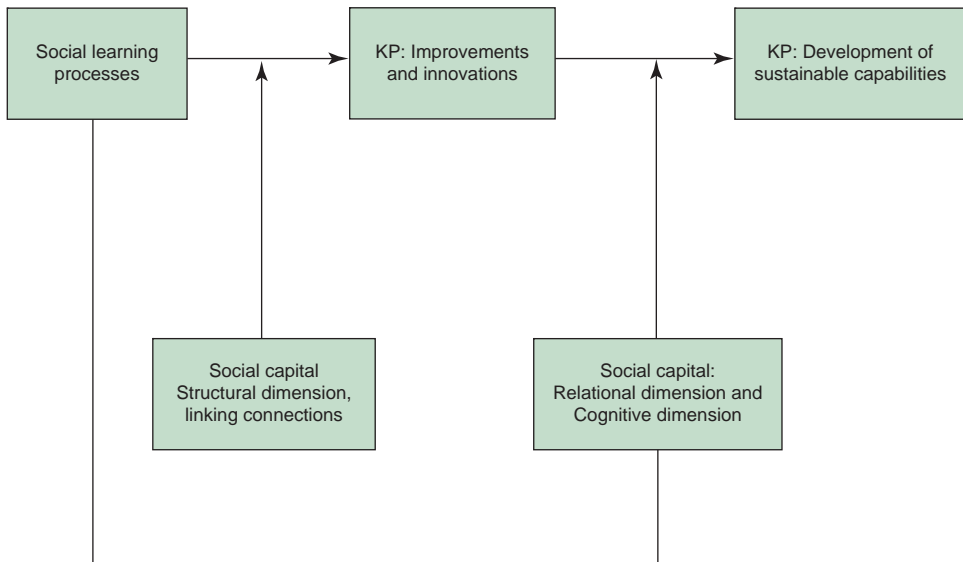


Figure 2

Interrelating social capital with learning and knowledge productivity

Chapter 8

Chapter 8 presents the conclusions of this study, its limitations and an exploration of new directions for further research. It also reflects on the chosen methodology and its findings. The following research question is answered:

How do characteristics of social capital influence knowledge productivity in social networks?

Figure 3 presents a revised conceptual framework and depicts how the central variables relate in view of the results of this study. The cross analysis based on the empirical findings serves as input to answer the three research questions of this study.

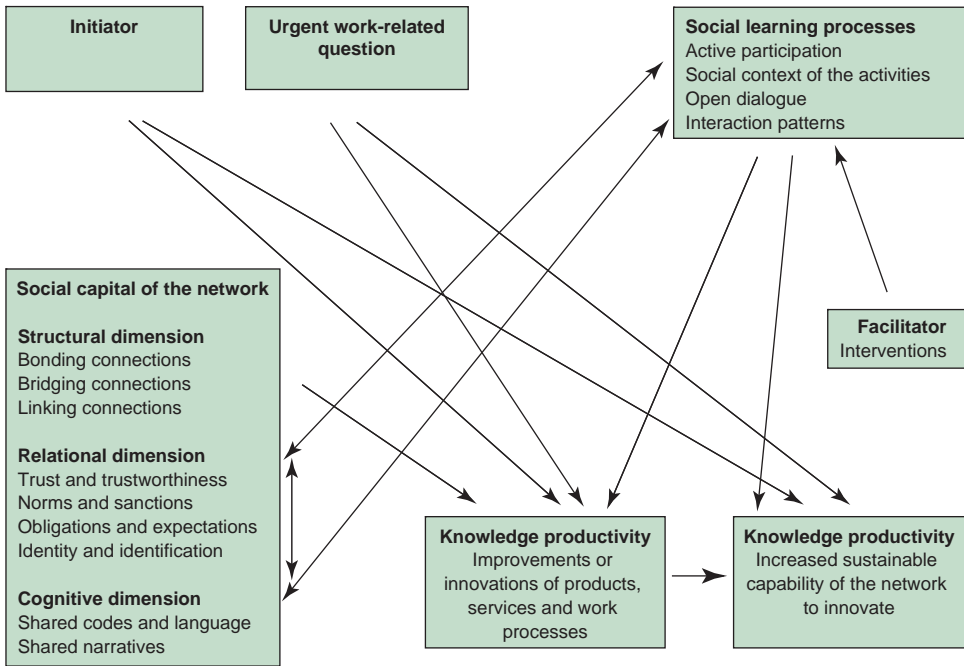


Figure 3

Revised conceptual framework to study knowledge productivity and social capital in networks

Legend: The boxes represent the main variables of this study. The arrows represent relations between the variables as observed in the cross-case analysis.

First research question: How do the structural, relational and cognitive dimensions of social capital influence knowledge productivity in networks?

The findings reveal that linking connections are an important condition for realizing improvements and innovations. Bonding and bridging connections do not appear to enable specific forms of knowledge productivity. The relational and cognitive dimension of social capital is strongly developed in networks that show improvement, innovations and the development of sustainable capabilities. The findings show that only the network that include linking connections are successful in realizing improvements and innovations. Networks that improve, innovate and build sustainable capabilities show high rankings of the relational dimension and cognitive dimension as well as highly ranked social learning processes. Networks that are not successful in developing sustainable capabilities are ranked low on the relational and cognitive dimension. Networks that do not show any knowledge productive results have very low values of the relational and cognitive dimension. The cross-case analysis does not clearly reveal in what way social learning processes and the relational and cognitive dimension of social capital interrelate.

Second research question: How do social learning processes in networks lead to improvements, innovations and the development of sustainable knowledge productive capabilities?

The cross-case analyses reveals that networks that are successful in developing sustainable capabilities to innovate are also successful in improving or innovating work processes, products or services. Apparently the creation process within a network is a crucial condition to lead to improvements, innovations and the development of sustainable capabilities. The findings suggest that the process of collectively 'creating something' is a necessary condition for members to develop sustainable capabilities to innovate in the future. This entails that organizations that aim to stimulate the development of capabilities of employees to innovate and improve, should focus on directly working on urgent work-related questions.

Third research question: What kind of interventions in networks impact knowledge productivity from a social capital perspective?

This study shows no direct relation between the interventions of a facilitator and specific forms of knowledge productivity, although interventions are relevant to for instance structuring meetings, inviting guests and presenting results. In order to successfully answer this research question and identify specific interventions that support knowledge productivity an exploratory framework presents the development of networks according to five phases. The framework is built around the two elements: the role of the initiator and the urgent work-related question. It is suggested to adopt these two elements as a basis for exploring knowledge productive interventions in networks. The framework is visualized in Figure 4.

The initiator plays a crucial role in the start of the network. The initiator feels responsible for inviting participants to join the network and is often granted authority in the specific domain. In the initiation phase the initiator focuses to explore the urgent work-related question. In order to create a network, colleagues and external experts are invited to participate in the network. Personal (one-to-one) invitations are more successful in enabling knowledge productivity than initiators who invite participants via general invitations (such as email or during existing team meetings). The networks that are knowledge productive paid explicit attention to exchanging personal beliefs, motivation and drive to participate. This is the third phase of the network: connecting interests. Connecting interests is a form of getting to know each other on a professional level. The creation process is the starting point of the design of specific activities. Successful creation processes in networks demand attention to four building blocks:

- 1 Design activities based on a rough timeframe in order to monitor the progress
- 2 Choose a procedure for the meetings and stimulate network participants to facilitate the meetings.
- 3 Regularly reflect on the process and the content, but avoid reflection overkill that inhibits motivation of network participants.
- 4 Ensure the ownership within the network and avoid external interference of not participating colleagues or external experts.

Sharing the findings within and outside the network is the fifth phase. Often the activities in this phase lead to new initiatives or initiators who is curious in making next steps in relation to the urgent work-related question. Sharing the findings to colleagues, peers and external parties is important for the network participants in order to be visible in their own organization, connect the findings with management objectives and to celebrate success.

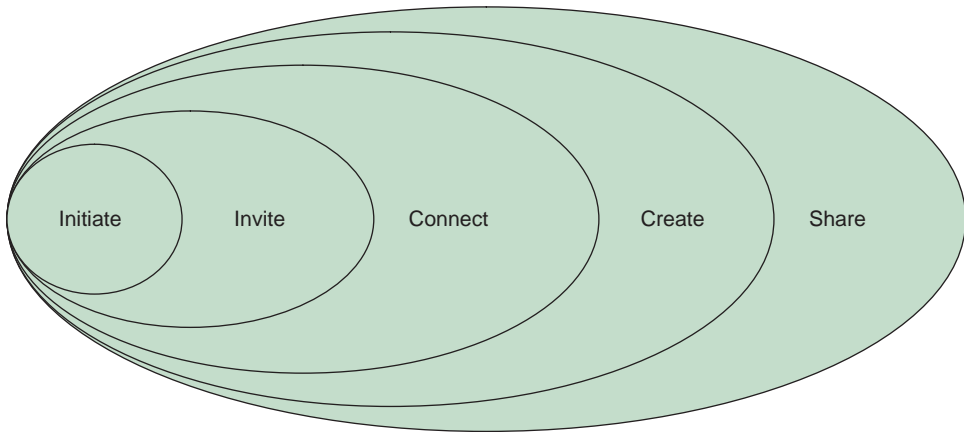


Figure 4

The development of a network in five phases.

Methodological remarks

The quality of the research design is discussed according to the internal validity, external validity, ecological validity and reliability. The exploratory case study of five networks determined the specific variables that are considered to indicate the theoretical concepts social capital, social learning processes and knowledge productivity. Besides this, especially data triangulation, investigator triangulation and methodological triangulation are well employed in this study. The research variables are studied in a relative large set of case studies ($n = 17$) and the networks are studies over a period of time. Besides this the principal researcher worked with a team of nine researchers that are all trained to use the research methods. The nature of this study does not aim to develop prescriptive theory, however the large number of cases that have been investigated allows for theoretical replication (Yin, 2003), enabling further quantitative testing. Biases could occur because network participants tend to report what they believe the researcher expects them to see (Verdonschot, 2009). This has been overcome by using multiple sources of evidence, by regularly validating the findings with network participants and finally by checking within the relevant organization if forms of knowledge productivity were visible and actually implemented.

Despite the methodological endeavors to create a sound research design four limitations can be identified. First of all, the organizational settings do

not include product-related industries. A majority of the networks focus their core activities at education and training. It could be that these educational institutes are more comfortable in collaborating with external partners to innovate. This could critically impact the relevance of linking connections. Secondly, the case study findings show a strong relation between the initiator and the urgent work-related question. In the research activities these two concepts are separated in order to conceptually being able to differentiate between the content and the relations and actors within the network. Thirdly, in the research design, the network participants are also considered as active researchers who participate in reflection meetings and validate the findings. The nine co-researchers supervised this process. This requires the co-researchers to be able to meet the demands and expectation of both the knowledge stream (objective of the research) and the practice stream (objective of the network). To separate these different roles the findings were discussed during validation meetings within the network and also later during cross-case consultation sessions. Final limitation is the data reduction process of the 17 case studies. There is a risk of making possible errors in this analysis. To improve the quality and reliability three researchers independently rated the observations and critically discussed their results with the principal researcher. One dissident case (Case 17, Chapter 6) was identified and studied again by the researcher.

Directions for further research

In addition to looking back on the research five suggestions provide suggestions for further exploration or testing:

- 1 Exploring the research framework within different types of organizations.
- 2 Exploring tipping points leading to the development of sustainable capabilities to innovate within a network.
- 3 Working with design studios to study the impact of interventions in a controlled environment.
- 4 Exploring the specific dynamics of social learning processes within networks.
- 5 Including social network analysis during the research activities to map the development of the social structure in the network.

Summary in Dutch (samenvatting)

De link tussen sociaal kapitaal en kennisproductiviteit Een verkennende studie naar de relatie tussen sociaal kapitaal en leren in kennisproductieve netwerken

Hoofdstuk 1

Hoofdstuk 1 beschrijft het startpunt van deze studie en verkent eerder onderzoek naar sociaal kapitaal en kennisproductiviteit. Dit leidt tot de onderzoeksdoelstellingen van deze studie. Ook wordt de relevantie van het onderzoek voor wetenschap, praktijk en samenleving beschreven. In een omgeving waar het concurrentievoordeel van organisaties wordt bepaald door de mate waarin zij kennisbronnen benutten en ontwikkelen is het vermogen om snel te leren, zich aan te passen aan veranderende omstandigheden en zowel technische als interactieve vaardigheden te ontwikkelen om te innoveren cruciaal (Harrison & Kessels, 2004). Dit vermogen wordt omschreven als kennisproductiviteit (Kessels, 1995, 2001b). Kennisproductiviteit omvat het proces van signaleren, verzamelen en interpreteren van relevante informatie, het ontwikkelen van nieuwe bekwaamheden met behulp van deze informatie en het stapsgewijs toepassen van deze bekwaamheden op het stapsgewijs verbeteren of radicaal vernieuwen van werkprocessen, producten of diensten (Kessels, 1995, 2001b). Leren met de intentie om te innoveren vraagt om samenwerking. Samenwerking is een fundamenteel sociale activiteit. In het vakgebied van Human Resource Development (HRD) bestaat er een groeiende belangstelling om dit soort samenwerkingsrelaties te bestuderen in plaats van individuele leerprocessen in kaart te brengen (Sanders, 2005). Primair omdat als mensen aan het werk zijn, relaties met anderen grotendeels hun dagelijkse beleving bepalen (Dutton & Heaphy, 2003). Sociaal kapitaal lijkt hierin relevante aanknopingspunten te bieden (Field, 2005). Inzicht in op welke wijze sociaal kapitaal leerprocessen beïnvloedt die leiden tot innovatie is een belangrijke uitdaging in het vakgebied van HRD (Harrison & Kessels, 2004). Het doel van dit onderzoek is om een theoretisch raamwerk te ontwikkelen dat inzicht geeft in hoe eigenschappen van sociaal kapitaal kennisproductieve processen in netwerken beïnvloeden. Tweede doelstelling is om een onderzoeksapproach te ontwikkelen om netwerken die kennisproductiviteit ondersteunen te observeren en te analyseren. Laatste doelstelling is om te verkennen wat voor soort interventies sociaal kapitaal beïnvloeden om zo leerprocessen op gang te brengen die leiden tot verbetering en innovatie van werkprocessen, producten of diensten.

Hoofdstuk 2

Hoofdstuk 2 verkent relevante literatuur op het gebied van sociaal kapitaal en kennisproductiviteit. Doel van dit hoofdstuk is om een eerste conceptueel raamwerk te ontwikkelen hoe sociaal kapitaal en kennisproductiviteit met elkaar in relatie staan. In het vakgebied van HRD zijn enkele bruikbare beschrijvingen van sociaal kapitaal ontwikkeld die een typologie bieden van verschillende soorten relaties tussen mensen (Woolcock, 1999, 2001, Field, 2008; Van der Sluis & De Jong, 2009):

- Bonding verbindingen: deze relaties verbinden mensen van dezelfde achtergrond, zoals familie, goede vrienden, een afdeling of een team;
- Bridging verbindingen: deze relaties verbinden mensen van dezelfde achtergrond, maar lossier, zoals mensen met dezelfde interesse of van verschillende afdelingen;
- Linking verbindingen: deze relaties verbinden mensen met verschillende achtergronden, zoals mensen van verschillende culturele achtergronden of verschillende organisaties.

Het perspectief van situationeel leren (Lave & Wenger, 1991) beargumenteert dat individuen verschillende leerprocessen ervaren op basis van hun sociale relaties en de context waarin dit plaatsvindt. Binnen deze zienswijze wordt kennis opgebouwd in praktijken van samenwerken, hetzij geformaliseerd, hetzij lossier in informele contacten (Field, 2005). Deze sociale leerplekken in groepen, organisaties of gemeenschappen maken leren mogelijk en zijn tegelijkertijd de plek waar wederkerigheid en vertrouwen ervaren dat vervolgens individueel gedrag en attitude vormgeeft (Field, 2005). Sociale relaties vertegenwoordigen daarom een waarde omdat zij leren mogelijk maken, samenwerkingsverbanden creëren en vanuit deze relaties innovatie tot stand brengen. Deze waarde kan worden omschreven als sociaal kapitaal. Deze studie neemt als vertrekpunt de omschrijving van Nahapiet en Ghoshal (1998) die drie dimensies van sociaal kapitaal beschrijft: de structurele, relationele en cognitieve dimensie. De structurele dimensie is gebaseerd op de propositie dat netwerkstructuren toegang geven tot kennis en relevante informatie (wie je kent bepaalt wat je weet). De structurele dimensie wordt beschreven door relaties en actoren in kaart te brengen. Een manier om de structurele dimensie inzichtelijk te maken is om bonding, bridging en linking verbindingen in kaart te brengen. De relationele dimensie beschrijft de kwaliteit van relaties. Aspecten die hier een belangrijke rol spelen zijn vertrouwen, sociale normen, afspraken, verwachtingen en een gedeelde identiteit. De cognitieve dimensie vertegenwoordigt gedeelde betekenisgeving en interpretatie van netwerken. Dit kan worden omschreven door gedeelde taal, codes en gedeelde verhalen.

Hoofdstuk 3

Hoofdstuk 3 heeft als doel om de inzichten uit de literatuurverkenning van Hoofdstuk 2 te bestuderen in de praktijk. Het eerste empirische onderzoek van deze studie is bedoeld als input voor het conceptueel raamwerk in Hoofdstuk 4. In totaal worden er vijf case studies uitgevoerd. De eerste drie netwerken zijn intra-organisatieel (netwerken binnen één organisatie). De volgende twee netwerken zijn inter-organisatieel (tussen organisaties met voornamelijk linking verbindingen).

De bevindingen bevestigen dat de aanwezigheid van linking verbindingen wordt gerelateerd aan vormen van kennisproductiviteit (Van der Sluis & De Jong, 2009). Op basis van de case studie bevindingen is het niet mogelijk een patroon in de relationele dimensie van sociaal kapitaal te onderscheiden. Hiervoor is additioneel onderzoek nodig. De cognitieve dimensie is sterk vertegenwoordigd in de vijf case studies. Vooral de aspecten van een gedeelde taal en specifiek gedeelde verhalen zijn zichtbaar. Vanwege deze generieke zichtbaarheid is het relevant de cognitieve dimensie verder te operationaliseren voor de tweede fase van empirisch onderzoek in Hoofdstuk 6. De resultaten laten zien dat de aanwezigheid van persoonlijke leerdoelen van netwerkdeelnemers niet kan worden gekoppeld aan vormen van kennisproductiviteit. Blijkbaar zijn leerdoelen in een netwerk niet makkelijk te koppelen aan complexe, onduidelijke vragen waarop niet vooraf een helder antwoord kan worden gevonden. Het blijkt dat de netwerken waarin de leden regelmatig onderling hun persoonlijke motivatie uitwisselen kennisproductief zijn. Passie en motivatie om te participeren zijn blijkbaar belangrijke ingrediënten wanneer formele aansturing ontbreekt. Vier van de vijf netwerken zijn kennisproductief (in verschillende gradaties). Op basis van deze eerste studie is het niet duidelijk wat voor soort leerprocessen ten grondslag liggen aan deze verbeteringen en vernieuwingen. Behalve de resultaten op basis van het eerste conceptueel raamwerk zijn er zes additionele inzichten die bruikbaar zijn voor de volgende fase van het onderzoek:

- 1 Netwerken vragen om een sterke verbinding met het uiteindelijke dagelijks werk.
- 2 Netwerken die werken aan verbeteringen en vernieuwingen dienen zichtbaar te zijn in de organisatie en actief hun resultaten te communiceren.
- 3 Formele en informele waardering zijn belangrijk om deelnemers betrokken te houden.
- 4 Netwerkbijeenkomsten vragen om actieve procesbegeleiding.
- 5 Netwerken hebben een specifieke leerdynamiek die in lijn dient te zijn met de strategie van de relevante organisatie.
- 6 Actieve ondersteuning en participatie van het management is cruciaal.

Netwerken zonder bridging of linking verbindingen creëren kennis die lastig wordt geabsorbeerd door externe partijen binnen en buiten de organisatie, zoals relevante collega's, managers, klanten, samenwerkingspartners of teams. Netwerkdeelnemers vinden het moeilijk om een radicale verandering in een werkproces, product of dienst te omschrijven. Daarbij kan er flink wat tijd verstrijken voordat een netwerk succesvol is in het daadwerkelijk ver-

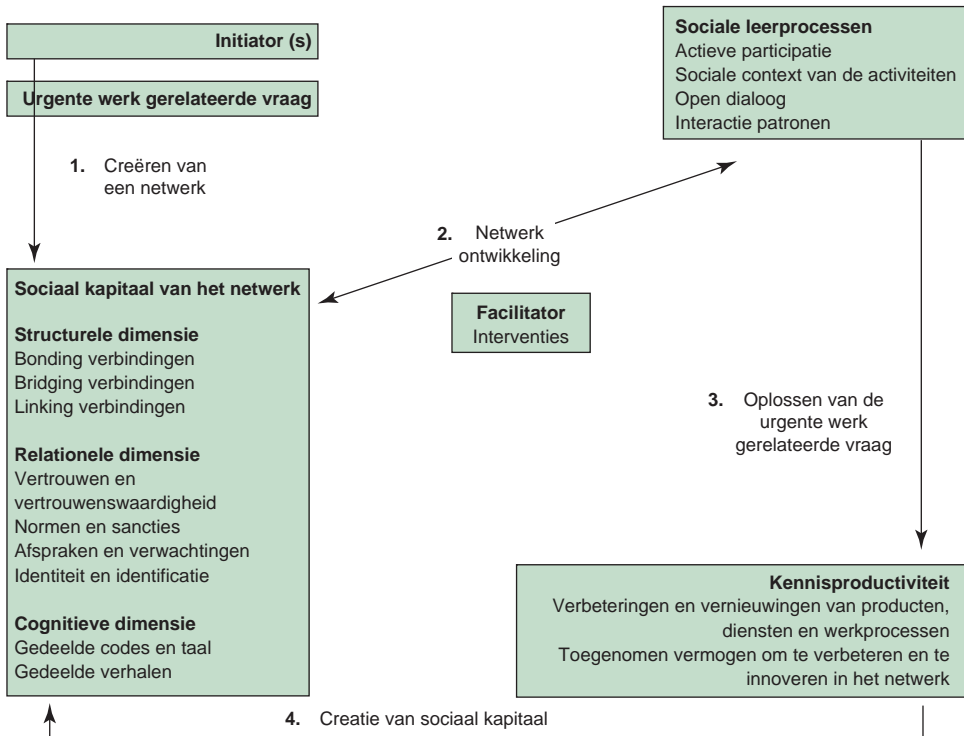
beteren of innoveren van een werkproces, product of dienst. Deze inzichten nodigen uit om het begrip kennisproductiviteit op zo'n manier verder te operationaliseren dat het voor netwerk deelnemers begrijpelijk is om ermee aan de slag te gaan. Daarbij is een longitudinaal onderzoek wellicht het meest geschikt vanwege het opgedane inzicht dat innovatie vaak meer tijd kost dan dat de onderzoeker aanwezig kan zijn binnen het netwerk (en de organisatie). De bevindingen van deze eerste onderzoeksfase bieden aanknopingspunten voor de uiteindelijke onderzoeksaanpak in Hoofdstuk 5.

Hoofdstuk 4

Op basis van de inzichten uit Hoofdstuk 3, presenteert dit hoofdstuk het conceptueel raamwerk waarin de volgende onderzoeksbegrippen centraal staan:

- De initiator van een netwerk: Persoon die start met het oprichten van een netwerk gebaseerd op een relevante urgente vraag.
- Een urgente werk gerelateerde vraag: Een omschrijving van een urgente werk gerelateerde vraag met een richting voor een mogelijke oplossing en een afgebakend doel.
- Structurele dimensie van sociaal kapitaal: De sociale structuur van een netwerk gebaseerd op bonding, bridging en linking verbindingen.
- Relationale dimensie van sociaal kapitaal: De kwaliteit van relaties in het netwerk gebaseerd op vertrouwen, normen en waarden, sancties, afspraken, verwachtingen en identificatie.
- Cognitieve dimensie van sociaal kapitaal: Gedeelde taal, codes en verhalen van netwerkdeelnemers. Interpretaties en gedeelde opvattingen in het netwerk.
- Sociale leerprocessen: Het proces van leren van en met elkaar gebaseerd op betekenisvolle interactie in het netwerk leidend tot een toename van bekwaamheden.
- Kennisproductiviteit onderverdeeld in:
 - Verbeteringen en vernieuwingen van producten, diensten en werkprocessen.
 - Toegenomen vermogen van netwerk deelnemers om te verbeteren en te vernieuwen in de toekomst.
- Interventies: Bewuste activiteiten in het netwerk uitgevoerd door een facilitator of initiatiefnemer gericht op een beoogd effect.

Op basis van de beschrijving van de centrale onderzoeksbegrippen in deze studie presenteert Figuur 1 het conceptueel raamwerk. Op basis hiervan worden de centrale onderzoeksvragen gesteld.



Figuur 1

Conceptueel raamwerk om kennisproductiviteit en sociaal kapitaal in netwerken te bestuderen

De volgende doelstellingen zijn leidend in de tweede fase van het empirische onderzoek:

- Het ontwikkelen van een theoretisch raamwerk om eigenschappen van sociaal kapitaal te bestuderen in de relatie met sociale leerprocessen en kennisproductiviteit.
- Het ontwikkelen van een onderzoeksaanpak om eigenschappen van sociaal kapitaal in netwerken te bestuderen die kennisproductiviteit bevorderen.
- Het in kaart brengen van interventies vanuit het perspectief van sociaal kapitaal die kennisproductiviteit in netwerken bevorderen.

Om deze doelstellingen te bereiken is de volgende centrale onderzoeksvraag relevant:

Hoe beïnvloeden eigenschappen van sociaal kapitaal kennisproductiviteit in sociale netwerken?

Een belangrijk uitgangspunt in dit onderzoek is het perspectief van situationeel leren dat leidt tot kennisproductiviteit. Dit sociale proces van leren kan bestudeerd worden in netwerken. Het conceptueel raamwerk in dit hoofd-

stuk dient te worden getoetst en gevalideerd. De volgende subvragen zijn daarin relevant:

Vraag 1: Hoe beïnvloeden de structurele, relationele en cognitieve dimensie van sociaal kapitaal kennisproductiviteit in netwerken?

Vraag 2: Hoe leiden sociale leerprocessen in netwerken tot verbeteringen en vernieuwingen en de toename van het duurzame vermogen om te verbeteren en te vernieuwen?

Vraag 3: Wat voor soort interventies in netwerken beïnvloeden kennisproductiviteit vanuit het perspectief van sociaal kapitaal?

Hoofdstuk 5

Hoofdstuk 5 beschrijft de onderzoeksaanpak van het tweede deel van deze studie. Het onderzoek concentreert zich op een netwerk van deelnemers gebaseerd op een urgente werk gerelateerde vraag van een initiator. Het betreft een case studie aanpak uitgevoerd in 17 netwerken. Het onderzoek wordt uitgevoerd in een tijdsperiode van zes tot twaalf maanden per netwerk. Tijdens de onderzoeksperiode voeren twee onderzoekers per netwerk de onderzoeksactiviteiten uit. Ze observeren alle netwerkactiviteiten. Daarbij worden alle netwerk deelnemers gedurende het onderzoek regelmatig geïnterviewd. Sommige netwerk deelnemers houden email logboeken bij. De inzichten die deze activiteiten opleveren dienen als input voor minimaal drie reflectiebijeenkomsten om enerzijds met de netwerk deelnemers te reflecteren op de opbrengsten en anderzijds de bevindingen te valideren. De onderzoeksaanpak is op zo'n manier ontworpen dat het reflectie en validatie mogelijk maakt van de bevindingen zowel binnen elk netwerk als tussen de 17 netwerken. Er kunnen zeven onderzoeksfasen in elk netwerk worden geïdentificeerd:

- 1 Ontwerpbijsamenkomst: samen met de initiator(s) van het netwerk wordt de urgente werk gerelateerde vraag verder uitgewerkt en verbindingen met mogelijke deelnemers verkend.
- 2 Ontwerpen van activiteiten: op basis van de ontwerpbijsamenkomst ontwerpt het netwerk specifieke activiteiten en vervolgstappen die de urgente werk gerelateerde vraag aanpakken.
- 3 Het creëren van ondersteuning op organisatieniveau: het netwerk organiseert ondersteuning van relevant management of andere stakeholders om zo de te ondernemen activiteiten mogelijk te maken (bijvoorbeeld het benoemen van een facilitator om bijeenkomsten te structureren).
- 4 Uitvoeren van het onderzoek: binnen het netwerk wordt de voortgang, de activiteiten en de resultaten in kaart gebracht en er wordt relevante informatie verzameld.
- 5 Valideren van onderzoeksbevindingen: de netwerkdeelnemers valideren de bevindingen en resultaten samen met relevante omstanders. De eerste conclusies worden gepresenteerd en het netwerk organiseert minimaal twee bijeenkomsten om te reflecteren op de opbrengsten.

- 6 Reflectie op de bevindingen: in deze fase brengt het netwerk de resultaten op organisatieniveau in kaart. Vragen die centraal staan: ondersteunen de resultaten van het netwerk ook de relevante organisatie en op welke wijze is de urgente werk gerelateerde vraag beantwoord?
- 7 Analyseren van de resultaten: de gerealiseerde resultaten van het netwerk en de toekomstige activiteiten worden gedeeld binnen de relevante organisatie.

Het conceptueel raamwerk in Hoofdstuk 4 dient als startpunt van het onderzoek naar de centrale onderzoeksvariabelen. De onderzoeksgegevens bestaan uit: observatierapportages, interviewuitwerkingen, email logboeken en additionele aantekeningen op basis van bijeenkomsten. Ook zijn er meerdere reflectiebijeenkomsten georganiseerd om met netwerk deelnemers te reflecteren op de bevindingen. Elk netwerkonderzoek werd uitgevoerd door twee onderzoekers. De onderzoekers zijn getraind om te werken met het conceptueel raamwerk en de operationalisering daarvan.

Hoofdstuk 6

Hoofdstuk 6 presenteert de bevindingen van de 17 netwerk case studies. De bevindingen van het onderzoek dienen ter validering en mogelijke aanpassing van het conceptueel raamwerk van Hoofdstuk 4. Elke casus omschrijving bevat achtergrondinformatie van het netwerk en geeft een beschrijving van de resultaten. Het is de doelstelling om de informatie per casus te reduceren tot een case display per casus. Deze displays maken het mogelijk de casussen onderling te vergelijken in een crosscase analyse. Om de betrouwbaarheid van de data reductie te vergroten hebben drie onderzoekers onafhankelijk van elkaar de bevindingen per casus gewaardeerd.

Hoofdstuk 7

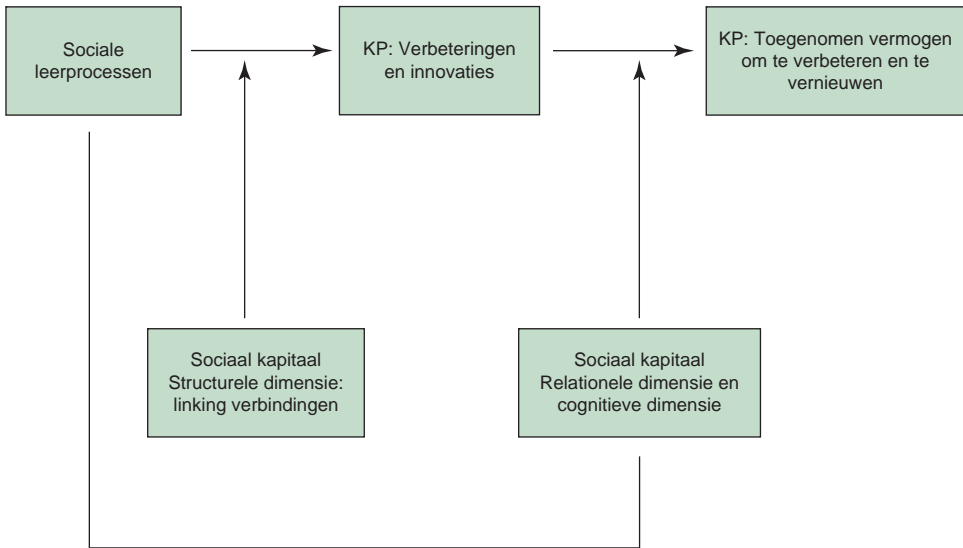
Hoofdstuk 7 vergelijkt de case displays in een crosscase analyse. De crosscase analyse groepeerde de casussen op basis van de toegekende waarde van de afhankelijke variabele: kennisproductiviteit. De effectvariabele bestaat uit twee componenten: de resultaten in termen van verbeteringen en innovaties, en het toegenomen vermogen van netwerk deelnemers om te verbeteren en te innoveren in de toekomst. Als de crosscase analyse op deze manier wordt ingedeeld ontstaan er drie categorieën. Als eerste de casussen met zichtbare verbeteringen en innovaties, en een toegenomen vermogen om te verbeteren en te innoveren in de toekomst. Daarna de casussen die alleen verbeteringen en innovaties laten zien. En tenslotte de casussen die geen verbeteringen en innovaties noch toegenomen vermogen om te verbeteren en te innoveren laten zien.

De netwerken die een toegenomen vermogen laten zien, zijn ook succesvol in het realiseren van verbeteringen en innovaties. Dit impliceert dat zonder te

werken aan specifieke verbeteringen en innovaties netwerken geen vermogen om in de toekomst te verbeteren en te innoveren ontwikkelen. Als de rol van de initiator nader wordt bestudeerd blijkt dat deze een belangrijke rol heeft in het bij elkaar brengen van relevante partijen. Ook is de succesvolle initiator zichtbaar binnen zijn organisatie en gepassioneerd voor het relevante onderwerp. De initiator laat enthousiasme en passie zien om aan de slag te gaan met de urgente werk gerelateerde vraag. De aanwezigheid van een urgente werk gerelateerde vraag is relevant voor de mate van kennisproductiviteit in het netwerk. Netwerken die zowel succesvol zijn in het realiseren van concrete verbeteringen en innovaties als een toegenomen bekwaamheid ontwikkelen om in de toekomst te verbeteren en te innoveren, laten hoge waarden zien van de urgente werk gerelateerde vraag. Linking verbindingen in de netwerken van dit onderzoek blijken noodzakelijk te zijn voor het realiseren van concrete verbeteringen en innovaties.

In de netwerken die verbeteringen en innovaties laten zien, maar geen toegenomen vermogen om in de toekomst te verbeteren of te innoveren zijn wel linking verbindingen aanwezig. Dit bevestigt de opvatting dat linking verbindingen een noodzakelijke, structurele conditie zijn om te innoveren, maar niet doorslaggevend voor de ontwikkeling van bekwaamheden die nodig zijn om te innoveren. Netwerken die succesvol zijn in het ontwikkelen van bekwaamheden om te verbeteren en te innoveren laten leerprocessen zien die leiden tot een sterkere ontwikkeling van de relationele en cognitieve dimensie. Blijkbaar beïnvloeden sociale leerprocessen de relationele en cognitieve dimensie van sociaal kapitaal waardoor ze kennisproductiviteit mogelijk maken binnen het netwerk. De relationele en cognitieve dimensie van sociaal kapitaal kunnen beschouwd worden als bouwstenen binnen een netwerk om tot verbetering en innovatie te komen. Tegelijkertijd betekent het niet dat een netwerk met sterk ontwikkelde relationele en cognitieve dimensies kennisproductief zal zijn. Het vraagt ook om de structurele dimensie van linking verbindingen, een weergave van deze relaties is te zien in Figuur 2.

De analyse van de interventies in de crosscase analyse laat geen patroon zien waaruit een overkoepelende conclusie kan worden getrokken. De interventies in de netwerken concentreren zich met name op het faciliteren van groepsinteractie. De bevindingen suggereren dat deze interventies nodig zijn om bijeenkomsten te structureren. Vaak is het belangrijk de interactie tijdens bijeenkomsten te faciliteren om zo naar afgebakende doelen te werken. Het is daarbij nodig om het netwerk op gang te houden en om daartoe bijeenkomsten te plannen. De waargenomen interventies grijpen minder in op het verkennen van de urgente werk gerelateerde vraag. Ook besteden de facilitators van de netwerken geen specifieke aandacht aan het uitnodigen van relevante partijen, zowel van binnen als buiten de organisatie. De interventies concentreren zich met name op het stimuleren van gemeenschappelijkheid zoals het gezamenlijk maken van afspraken, het plannen van activiteiten en het collectief delen van informatie.



Figuur 2

Relatie tussen sociaal kapitaal en kennisproductiviteit

Hoofdstuk 8

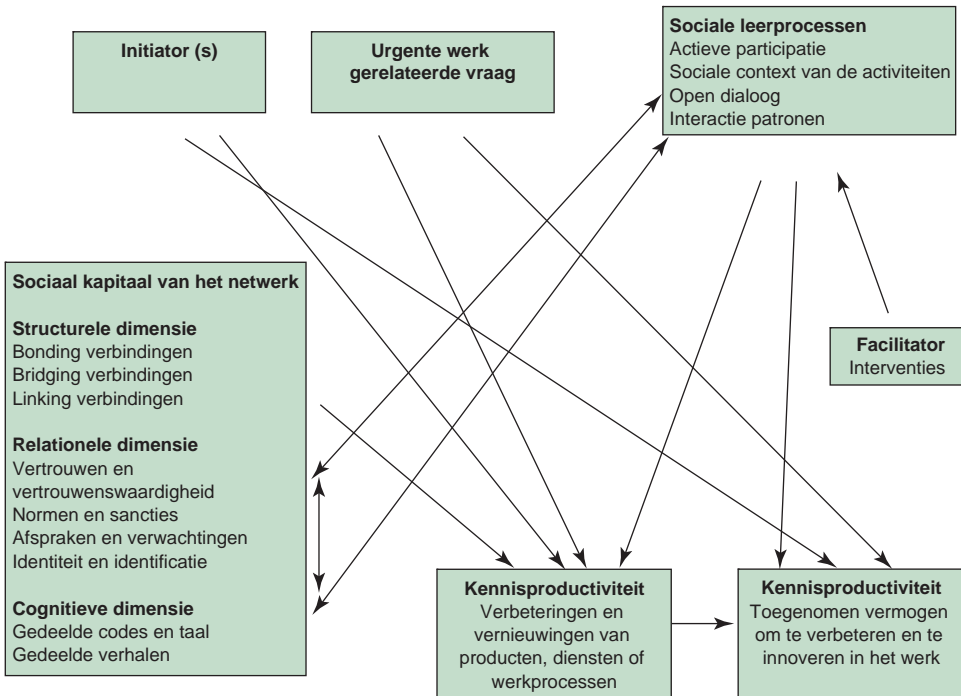
Hoofdstuk 8 presenteert de conclusies van deze studie en besteedt aandacht aan de reflectie op de opbrengsten en gekozen aanpak. Ook wordt er gekeken naar richtingen voor vervolgonderzoek. De volgende onderzoeksvraag wordt beantwoord:

Hoe beïnvloeden eigenschappen van sociaal kapitaal kennisproductiviteit in sociale netwerken?

Figuur 3 presenteert een herzien conceptueel raamwerk op basis van de crosscase analyse met een weergave van de wijze waarop de onderzoeksvariabelen zich tot elkaar verhouden. Op basis van dit raamwerk worden de drie subonderzoeksvragen beantwoord.

Vraag 1: Hoe beïnvloeden de structurele, relationele en cognitieve dimensie van sociaal kapitaal de kennisproductiviteit in netwerken?

De resultaten tonen aan dat linking verbindingen in netwerken een belangrijke conditie zijn om tot verbeteringen en innovaties van producten, diensten of werkprocessen te komen. Op basis van de resultaten kunnen bonding en bridging verbindingen niet in relatie worden gebracht met specifieke vormen van kennisproductiviteit. De relationele en cognitieve dimensie van sociaal kapitaal zijn sterk vertegenwoordigd in netwerken die zowel verbeteringen en innovaties realiseren als een toename in het vermogen om in de toekomst te verbeteren en te innoveren. Netwerken die niet succesvol zijn in het ontwikkelen van duurzame bekwaamheden om in de toekomst te



Figuur 3

Herzien conceptueel raamwerk om kennisproductiviteit en sociaal kapitaal in netwerken te bestuderen

Legenda: De vierkanten vertegenwoordigen de centrale variabelen in deze studie. De pijlen laten de relaties zien op basis van de crosscase analyse.

verbeteren en te innoveren vertonen tegelijkertijd lage waarden op zowel de relationele als cognitieve dimensie van sociaal kapitaal. Netwerken die geen enkele vorm van kennisproductiviteit vertonen, laten ook lage waarden in de relationele en cognitieve dimensie van sociaal kapitaal zien. De crosscase analyse geeft geen eenduidig inzicht in hoe sociale leerprocessen zich tot de relationele en cognitieve dimensie van sociaal kapitaal verhouden.

Vraag 2: Hoe leiden sociale leerprocessen in netwerken tot verbeteringen en vernieuwingen en de toename van het vermogen om te verbeteren en te vernieuwen?

De crosscase analyse laat zien dat netwerken die zowel succesvol zijn in verbeteringen en innovaties ook een toegenomen vermogen om te verbeteren en te innoveren tonen. De bevindingen suggereren dat het proces van collectief 'iets maken' een noodzakelijke conditie voor netwerk deelnemers is om duurzame bekwaamheden te ontwikkelen om met toekomstige innovatieve vraagstukken om te gaan. Dit betekent dat organisaties die beogen innovatie te stimuleren door medewerkers te ondersteunen om innovatieve bekwaamheden te ontwikkelen zich primair dienen te richten op urgente werk gere-

lateerde vragen waarbij ze toewerken naar een specifiek product, dienst of werkproces.

Vraag 3: Welke interventies in netwerken beïnvloeden kennisproductiviteit vanuit het perspectief van sociaal kapitaal?

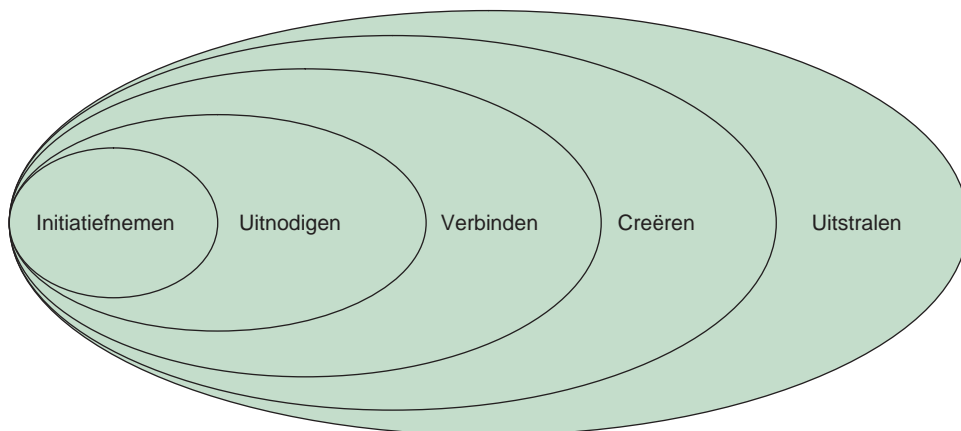
De studie bestudeerde de resultaten van interventies van een facilitator in alle 17 netwerken. De resultaten laten geen directe relatie zien tussen interventies van een facilitator en specifieke vormen van kennisproductiviteit. Ook al zijn interventies relevant om bijvoorbeeld bijeenkomsten te structureren, deelnemers uit te nodigen of voor het uitwerken van resultaten, toch laat de studie geen relatie zien tussen interventies en kennisproductiviteit. Hierop sluit aan dat twee variabelen wel een sterke invloed op kennisproductiviteit in een netwerk hebben: de rol van de initiator en de aanwezigheid van een urgente werk gerelateerde vraag. Op basis van deze onderzoeksresultaten is het mogelijk om in een exploratief raamwerk nieuwe interventies voor te stellen die betrekking hebben op de rol van de initiator en de urgente werk gerelateerde vraag. Dit raamwerk is weergegeven in Figuur 4.

De initiator speelt een belangrijke rol bij de start van een netwerk. De initiator nodigt deelnemers uit om te participeren in het netwerken. Daarbij wordt de initiator vaak als expert gezien in het specifieke domein door collega's. In deze initiatie fase verkent de initiator de urgente werkgerelateerde vraag. Om een netwerk te vormen nodigt de initiator collega's of externe relevante partners uit om te participeren in het netwerk. Het persoonlijk uitnodigen van deelnemers is succesvoller dan deelnemers uit te nodigen via algemene e-mails of tijdens bestaande team overleggen. Netwerken die kennisproductief zijn besteden expliciet tijd aan het uitwisselen van persoonlijke opvattingen, motivatie en drijfveren om te participeren. Dit is zichtbaar in de derde fase van het raamwerk: het verbinden van belangen. Het verbinden van belangen is een vorm van elkaar leren kennen op een professioneel niveau. Het creatieproces is het startpunt van het ontwerp van specifieke activiteiten om de urgente werkgerelateerde vraag te beantwoorden. Succesvolle creatieprocessen in netwerken besteden aandacht aan vier bouwstenen:

- 1 Het ontwerpen van activiteiten gebaseerd op een grof tijdschema om het mogelijk te maken de voortgang actief te monitoren.
- 2 Het creëren van een eenduidige structuur voor elke bijeenkomst en het bevorderen om netwerk deelnemers zelf de bijeenkomsten te laten faciliteren.
- 3 Regelmatig reflecteren op het proces en de ontwikkelde inhoud, terwijl tegelijkertijd actief voorkomen dat er een 'overkill' aan reflectie plaatsvindt dat de motivatie van deelnemers negatief beïnvloedt.
- 4 Hou het eigenaarschap binnen het netwerk en voorkom externe bemoeizucht van collega's en experts die niet wensen te participeren in het netwerk.

Het delen van de resultaten en opbrengsten binnen en buiten het netwerk is de vijfde en laatste fase van het raamwerk. Vaak leidt deze fase tot nieuwe activiteiten of initiatiefnemers die nieuwsgierig zijn naar volgende stappen

in relatie tot de urgente werkgerelateerde vraag. Het delen van de resultaten en opbrengsten met collega's, vakgenoten en externe partijen is belangrijk voor de netwerk deelnemers om zichtbaar te zijn binnen hun eigen organisatie. Bovendien geeft het de mogelijkheid de resultaten te verbinden met management doelstellingen. Daarbij is het een moment om positieve aandacht te geven aan behaalde successen en onderlinge samenwerking.



Figuur 4

De ontwikkeling van een netwerk in vijf fasen

Reflectie op de onderzoeksaanpak

De kwaliteit van de gekozen onderzoeksaanpak is besproken aan de hand van de interne validiteit, externe validiteit, ecologische validiteit en betrouwbaarheid. De verkennende case studies van vijf netwerken gaven inzicht in de specifieke variabelen die beschouwd kunnen worden als indicatoren van de theoretische concepten sociaal kapitaal, sociale leerprocessen en kennisproductiviteit. Buiten deze verkenning om tot een valide en betrouwbare methode te komen, spelen data triangulatie, werken met meerdere onderzoekers en methodologische triangulatie een belangrijke rol in de validiteit en betrouwbaarheid van het onderzoek. De onderzoeksvariabelen zijn bestudeerd in een relatief grote dataset van case studies ($n=17$) en bovendien zijn de netwerken over langere periode in tijd gevolgd. De onderzoeker werkte met een onderzoeksteam van negen onderzoekers die allemaal getraind waren in het gebruik van de onderzoeksmethode. Het onderzoeksontwerp doelt er niet op om voorschrijvende theorie op te leveren, daarentegen biedt de grote dataset de mogelijkheid tot datareplicatie (Yin, 2003) en toekomstige kwantitatieve toetsing. Onjuiste onderzoeksgegevens kunnen ontstaan doordat deelnemers van het onderzoek aan de onderzoekers rapporteren wat zij denken dat wenselijk is (Verdonschot, 2009). Dit is zoveel mogelijk voorkomen door meerdere bronnen van dataverzameling te gebruiken, door alle bevindingen terug te koppelen met de netwerk deelnemers en bovendien door te valideren

of vormen van kennisproductiviteit ook daadwerkelijk zichtbaar waren binnen de relevante organisatie.

Ondanks de methodologische inspanningen om tot een gedegen onderzoeksaanpak te komen zijn er

vier beperkingen te noemen. Ten eerste, de organisaties waaruit de netwerken ontstaan hebben geen productgerelateerde achtergrond. Het merendeel van de netwerken hebben hun primaire activiteit in het onderwijs. Het is een mogelijkheid dat deze onderwijsinstututen gewend zijn om met externe partners samen te werken om te innoveren. Dit gegeven kan de impact van linking verbindingen op kennisproductiviteit bekritisieren. Ten tweede laat het onderzoek een sterke relatie tussen de initiator en de urgente werkgerelateerde vraag zien. Dit kan betekenen dat het niet mogelijk is om hier een onderscheid tussen te maken. In de onderzoeksaanpak zijn deze twee begrippen bewust uit elkaar gehaald om zo een onderscheid te kunnen maken tussen de inhoud en de relevante relaties en actoren in een netwerk. Ten derde worden in de onderzoeksaanpak de netwerk deelnemers gezien als actieve onderzoekers die participeren in reflectiebijeenkomsten om de bevindingen te valideren. Het team van negen onderzoekers begeleidde dit proces. Dit vraagt van de onderzoekers een bekwaamheid om tussen de verwachtingen van het onderzoek en de praktijk en ambitie van het netwerk te schakelen. Daarom is bewust gekozen om onderscheid te creëren tussen deze rollen: alle bevindingen zijn bediscussieerd in reflectiebijeenkomsten en nogmaals gecheckt tijdens cross case bijeenkomsten. Laatste beperking is de data reductie van de 17 case studies om tot een cross case analyse te komen. Er bestaat een risico dat fouten zijn gemaakt. Om dit te voorkomen en de kwaliteit en betrouwbaarheid te vergroten hebben drie wetenschappers onafhankelijk van elkaar de observaties bekeken en een numerieke waarde toegekend. Vervolgens zijn deze bevindingen besproken met de onderzoeker. Dit heeft geleid tot een vervolg onderzoek bij één afwijkende casus (Casus 17, Hoofdstuk 6).

Richting voor vervolgonderzoek

Behalve terugkijken op de gekozen methode zijn er vijf richtingen voor vervolgonderzoek op basis van de conclusies:

- 1 Het toetsen van het conceptueel raamwerk bij verschillende type organisaties.
- 2 Het verkennen van kritische omslagpunten binnen netwerken die leiden tot toegenomen bekwaamheden om te innoveren.
- 3 Het werken in ontwerpstudio's om de impact van interventies in een gecontroleerde omgeving te kunnen bepalen.
- 4 Het in kaart brengen van de specifieke dynamiek en eigenschappen van social leerprocessen die plaatsvinden binnen kennisproductieve netwerken.
- 5 Het uitvoeren van uitgebreide sociale netwerkanalyse tijdens de onderzoeksactiviteiten om de ontwikkeling van de sociale structuur binnen het netwerk over langere tijd in kaart te brengen.

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Appendix A – Data collection protocol of the exploratory case studies

- 1 Observation protocol
- 2 Interview protocol
- 3 Field notes
- 4 Reflection meeting

1. Observation protocol of the network meeting [name network]

Description by [name of researcher]
[Date of observation]

Participants in this network meeting
[Enumeration of participants in the network meeting, including affiliation and background]

[Name of the facilitator and / or facilitator of the network]

History
[Description of the previous development that led to this network meeting]

General topic
[Description of the planned general topic in this network meeting]

Problem
[Description of the problem that emerges in the network meeting]

Learning objectives and motivation
[Description if network participants exchange personal learning objectives and motivation to participate in the network]

Breakthrough during the network meeting

[Description of breakthroughs during the network meeting: what happened, who were actively involved]

Effect of the breakthrough

[Description of the effect of the breakthrough: for the people involved, the process and the realized innovation]

Connection with future work activities

[Description if the results of the meeting are summarized and connected to specific future activities]

2. Interview protocol [name network]

Description by [name of researcher]

[Date of interview]

Name and role of the network participant

[Name of the network participant, including affiliation and background]

Personal learning objective of the network participants

- What result is important for you to realize?
- Do you have the idea the results of this network will have meaningful impact within you organization?

Personal motivation of network participants

- - What is your motivation to participate in this network?
- - What do you hope to gain from it?

The structural dimension of social capital

- Are the relevant partners present in this network?
- Who is missing? Why do you think they are not there?

The relational dimension of social capital

- Is there knowledge you explicitly withhold during the network meeting?
- Do you experience the network as a safe environment to speak your mind?
- Do you regard some of the network participants as personal friends?
- How long on average have you worked with the network participant in previous projects?

The cognitive dimension of social capital

- Do experience a shared awareness of interaction norms during the network meetings?
- Do you find the quality of interaction high or low? Why?

The cognitive dimension of social capital

- Are you familiar with the professional language that is used during the meetings?
- Are there typical examples of shared stories or experiences in the network?

Learning that leads to knowledge productivity

- Is there something in your day-to-day work that you differently and is related to activities within the network?
- What led to this breakthrough? (What happened? Who were involved?)
- What is the effect of the breakthrough in your work? (For the process, procedures, products or services?)
- Is the breakthrough visible for colleagues that do not participate in the network? What do they see?
- What are next steps?

3. Field notes [of the network]

Description by [name of researcher]

[Date of the informal encounter]

Name and role of the network participant

[Name of the network participant, including affiliation and background]

Topic that discussed during the encounter with the network participant

[Description of the topic during the encounter]

Main conclusion and reflection based on the informal encounter *

[Description of the conclusion and reflection based on the informal encounter]

* The findings of the field note were emailed to the network participant and they could comment on the findings.

4. Reflection meeting [name of network]

Description by [name of researcher]

[Date of the reflection meeting]

Participants in this network meeting

[Enumeration of participants in the network meeting, including affiliation and background]

[Name of the facilitator and / or facilitator of the network]

Learning that leads to knowledge productivity

- How would you describe the revenues of the network?
 - Which improvements have been realized
 - Which radical innovations are implemented?
 - Do these refer to operating procedures, products or services?
- What is valuable in this network for you?
 - What do you value in the network?
 - What kind of contributions of you network participants do you value?
 - What kind of connections within the network do you value?
- Stimulating and inhibiting factors of the network
 - What kind of interactions do you see in the network?
 - How would you describe the role of the facilitator?
 - How would you describe the role of the initiator?
 - What kind of interventions proved to be valuable in the network?
 - What kind of intervention proved not to be valuable in the network?
- Additional remarks

Appendix B – Protocol of the design meeting

Description by [name of researcher]

[Date of observation]

[Name of the initiator of the network]

History

[Description of the previous development that led to this network meeting]

General topic

[Description of the planned general topic in this network meeting]

Problem

[Description of the problem that emerges in the network meeting]

Objective

[Description of the objective of the initiator]

Participants

[Description of relevant parties that the initiator aims to invite to participate: names, affiliation, expertise]

Design of a plan

[Description of a plan of approach to work on the urgent work-related question]

Appendix C– Data collection protocol of the 17 case studies

- 1 Observation protocol of network meetings
- 2 Interview protocol of network participants
- 3 Field notes
- 4 Posters of preliminary findings
- 5 Email diaries
- 6 Reflection meeting with network participants

1. Observation protocol of the network meetings [name network]

Description by [name of researcher]
[Date of observation]

[Name of the facilitator and / or facilitator of the network]

Structural dimension of the network

[Enumeration of the participants in the network meeting, including affiliation and background]

Bonding [network participants]

Bridging [network participants]

Linking [network participants]

History

[Description of the previous development that led to this network meeting]

General topic

[Description of the planned general topic in this network meeting]

Problem

[Description of the problem that emerges in the network meeting]

Role of the initiator and the urgent work-related question

- Is the initiator able to make his or her work-related question explicit, visible in practice and concrete through examples? Y / N [description of the urgent work-related question]
- To what extent is the initiator able to identify members (internal and / or external) who are involved with the question and could add value? [description of the finding]
- Is the initiator successful to invite these members to explore the relevant urgent work-related question? Y / N [description of the finding]
- Are the relevant partners located within or outside the organization? [description of the finding]

Relational dimension of social capital in the network

- Do the network participants share their personal motivation to participate in the network? Y / N [relevant quotes]
- Do the network participants ask about other network participants' motivation to participate in the network? Y / N (relevant quotes)
- Do network participants arrive on time and leave when the network meeting is finished? Y / N [relevant quotes]
- Are the network participants active during network meeting or are they easily distracted? Y / N [relevant situation]
- Do the network participants actively listen to each other? Y / N [relevant quotes]
- Do the network participants share their personal worries in relation to the urgent work-related question? Y / N [relevant quotes]
- Are the network participants comfortable in sharing uncertainties or lack of knowledge or insight during the network meeting? Y / N [relevant quotes]
- Do the network participants force their personal norms upon the group in relation to solving the urgent work-related question? Y / N [relevant quotes]
- Do the network participants commit themselves to a specific task or objective and follow through? Y / N [relevant quotes]
- Do the network participants share their personal expectations about the ambition of the network? Y / N [relevant quotes]
- Do the network participants identify themselves as being a sustainable part of the network, at least until the urgent work-related question is answered? Y / N [relevant quotes]
- Are there other observations that you would like to connect to the relational dimension of social capital? [write down additional information]

The cognitive dimension of social capital in the network

- Do the network participants ask questions about abbreviations and professional codes that other network participants use? Y / N [relevant quotes]
- Are network participants familiar with abbreviations and professional codes of other network participants? Y / N [relevant quotes]
- Are there certain shared beliefs about the work environment that is difficult to discuss during the network meeting? Y / N [relevant quotes]

- Do the network participants recognize specific shared stories about the urgent work-related question during the network meeting? Y / N [relevant quotes]
- Do the network participants experience a shared objective concerning the urgent work-related question? Y / N [relevant quotes]

Social learning processes in the network

- Description of breakthroughs during the network meeting in relation to the urgent work-related question: what happened, who were actively involved? [relevant quotes]
- Description what activities are undertaken to address the relevant issue [relevant quotes]
- Determine which relevant network participants are involved around the breakthrough [name of the network participant]
- Determine the extent that network participants are active during the network meetings to work towards relevant outcomes [relevant quotes]
- Are there specific dominant interaction patterns during the network meetings? Y / N [relevant quotes]
- Does the breakthrough lead to specific future network activities? Y / N [relevant quotes]

Improvements and innovations

- Is the network successful in finding and using new information sources? Y / N [description of the finding]
- Is the network successful in developing new information sources? Y / N [description of the finding]
- Is the network successful in developing and using new activities to address the relevant work-related question? Y / N [description of the finding]
- Is the network successful in realizing gradual improvement of a work process related to the work-related question? Y \ N [description of the finding]
- Is the network successful in developing new services to address the work-related question? Y / N [description of the finding]
- Is the network successful in developing new products to address the work-related question? Y / N [description of the finding]
- Is the network successful in developing new operating procedures to address the work-related question? Y / N [description of the finding]

2. Interview protocol [name network]

Description by [name of researcher]

[Date of interview]

Name and role of the network participant

[Name of the network participant, including affiliation and background]

Personal motivation of network participants

- What is your motivation to participate in this network?
- What do you hope to gain from it?
- How were you invited to participate?

The structural dimension of social capital

- Are the relevant partners present in this network?
- Who is missing? Why do you think they are not there?

The relational dimension of social capital

- Is there knowledge you explicitly withhold during the network meeting?
- Do you experience the network as a safe environment to speak your mind?
- Are the other participants in your opinion the right persons to participate in the network?
- What do you expect from participating in the network?
- Do you see yourself as an intrinsic part of this network?

The cognitive dimension of social capital

- Are you familiar with the professional language and abbreviations that are used during the meetings?
- Do you sometimes do not know what is being talked about?
- Would you consider yourself to be at the same professional level as the other network participants?
- Are there typical examples of shared stories or experiences in the network?

Learning that leads to knowledge productivity

- Is there something in your day-to-day work that you now do differently than before you were a participant of this network and is this related to activities within the network?
- What led to this breakthrough? (What happened? Who were involved?)
- What is the effect of the breakthrough in your work? (For the process, procedures, products or services?)
- Is the breakthrough visible for colleagues that do not participate in the network? What do they see?
- What are in your opinion next steps?
- What do you have gained the most from by participating in this network?

3. Field notes [of the network]

Description by [name of researcher]

[Date of the informal encounter]

Name and role of the network participant (s) that you encounter

[Name of the network participant, including affiliation and background]

Topic that discussed during the encounter with the network participant(s)

[Description of the topic during the encounter]

Main conclusion and reflection based on the informal encounter *

[Description of the conclusion and reflection based on the informal encounter]

* The findings of the field note were emailed to the network participant and they could comment on the findings.

4. Examples of posters of preliminary findings based on observations of network meetings and interviews of network participants

Initiatief nemen

De Essentie

Initiatief nemen:

- Een netwerk begint bij één persoon
- Die persoon wil iets

Lourens van der Meulen
Netwerk Experimenten KSB



"Het Herontwerp moet klaar zijn in 2008. De experimenten worden dan afgesloten. Ik ben benieuwd naar de

ervaringen van anderen met de experimenten."

Urgentie
Nieuwsgierigheid

Wim Matthijsse
Netwerk ICT en Onderwijs



"Mijn passie is ICT en leren. Ik wil graag ICT inzetten voor en ondersteunend maken aan het onderwijs."

Passie
Persoonlijk belang

Waarom zou je een netwerk starten?

Omdat je....

- Tegen vragen aanloopt waar bestaande antwoorden niet langer blijken te werken
- iets persoonlijk belangrijk en/ of leuk vindt
- Een urgent thema onder de aandacht wilt brengen
- Mensen wilt verbinden die op verschillende plekken aan verwante vraagstukken werken

Initiatief nemen, hoe doe je dat?

- Contact maken met mensen; in gesprek gaan over wat jou boeit en onderzoeken of dat aantrekkelijk is voor hen
- Zeggen wat je wel wilt
- Tool 2 x 2 vragen

1. Waarom is wat ik wil belangrijk?
2. Wat zie ik als resultaat?

3. Wie of wat heb ik nodig en wat moet ik kunnen om dat resultaat te bereiken?
4. Wat ga ik als eerste doen?



Kliniek Warnsveld IZ

Continue samenwerken in het zoeken van nieuwe manieren om de patiënt te bedienen

Volop ertegenaan!

Samenwerken door verschillende expertise te betrekken

Ton
(zorgverpleegkundige)

Wat voor mij werkt is samenwerken met verschillende expertiseën. Dat gaat verder dan bijvoorbeeld de arts, ook verpleegkundigen hebben een belangrijke taak. Daar moet je gebruik van maken als je een patiënt verder wilt helpen. Door samen te werken met de andere disciplines kun je voordeel slaan en vooruitgang boeken op de werkvloer.

Annela
(zorgverpleegkundige)

Ik ben trots op het samenwerken met collega's om dingen beter te laten functioneren. Ook het met elkaar participeren van mensen na het helpen. Een succesfactor is dat we eerder het gesprek met collega's aanpakken om alternatieven te bedenken. Zoals een leersessie, of iemand naar buiten toe gaan. Een ander succes is het evalueren van resultaten met de patiënt, die vroeger mogelijk niet betrokken was bij de beslissingen van een behandelplan. Samen zit je prettier en ook wordt vroeger in de beslissing.

Xandra

Het succes ontstond dat samen te werken er wel eens voor kan zorgen dat je beter kunt met verlaten en daarmee zijn waarde verliezen. De dynamiek zorgt ervoor dat we samen zoeken naar andere oplossingen. Zodat heeft het plan IP samen met de afdeling betrokken en in kamputen eruit gehaald.

Kritisch kijken naar separeren

Nathalie
(zorgverpleegkundige)

Het is niet de afdeling patiënt gekikt om samen kritisch te kijken naar separeren en dat is de afdeling. We vragen ons af of het nu nodig is. De afdeling is te veel verantwoordelijk voor het zoeken van alternatieven. Het is daar op aanvullende manier: 1 op 1 met een collega verpleegkundige, in het dagelijkse werk zodat je nieuwe situaties kan bedenken. 2 Als dat tekort schiet ook de arts, psycholoog of ambulanceverpleegkundige op. Om ondersteuning te vragen. 3 Maakt ik blijven vasthouden en is op een andere manier buiten om de zwaai te brengen na de overdracht. 4 Afkondend hoe ik veel van het bijeen van gesprekken met de meest belangrijke verter en de patiënt.

Dianne
(zorgverpleegkundige)

Trots op het samenwerken met collega's om dingen beter te laten functioneren. Ook het met elkaar participeren van mensen na het helpen. Een succesfactor is dat we eerder het gesprek met collega's aanpakken om alternatieven te bedenken. Zoals een leersessie, of iemand naar buiten toe gaan. Een ander succes is het evalueren van resultaten met de patiënt, die vroeger mogelijk niet betrokken was bij de beslissingen van een behandelplan. Samen zit je prettier en ook wordt vroeger in de beslissing.

Samenwerken

Bespreken maken van tegengestelde situaties (verpleegkundige team, verpleegkundige team dat je niet durft te nemen).

Succes IP = samen (spreekuren), samen op site, informatie op aanvraag te helpen, betrouwbare in het zoeken in alternatieven, overdracht, vragen zoeken een ander perspectief, nu kijken we eerst naar andere mogelijkheden en daarnaast we veel sneller. Dat is een succes zijn verpleegkundigen en de kamer van nieuwe mensen.

Randvoorwaarden IP: goed kwalitatief behandeld en verpleegkundige team, vroeger omgeving maar dat je niet durft te nemen.

Trots op het team!

Thea
(verpleegkundige)

Trots op hoe het bij GGNet is samenwerken met mensen die een passie hebben voor de patiënt. Mensen die vroeger niet van handhaving op de juiste weg waren. De activiteiten die ik heb gedaan zijn daarvoor ondersteuning.

Wij zijn een jong team en zijn zo vroeg naar een idee. Samenwerking is daarom heel belangrijk, dat is een succes voor de patiënt en zijn familie.

Laten patiënten geven mij gemakkelijk feedback, met collega's werken we veel met elkaar samen, in overleggen, etc. Daar heb ik veel van geleerd en heb ik veel verschillende perspectieven naar een resultaat.

David
(psycholoog)

Daarom is het belangrijk dat we samen met de patiënt en de familie samenwerken. Dit is een succes voor de patiënt en zijn familie. Samenwerking met de patiënt en de familie is een succes voor de patiënt en zijn familie.

Gerrie
(ambulancier)

Ik werk er sinds '10 bij GGNet. Je wordt met mensen, voor mensen en je doet het een jaer plezier te doen. Je werkt in een team en dat vind ik geweldig. Het is belangrijk dat we samen met de patiënt en de familie samenwerken. Dit is een succes voor de patiënt en zijn familie.

IP bij IZ

- IP project gestart mei 2007, door de waa van de dag, verbouwing en door bewustwording van het belang door te pakken, trekken van het project gingen weg, maakte dozzanten laag, nu komt het op de agenda
- Succesfactor binnen IP hier zijn er al wel: werkdoelen krijgen, gestart met interview, bewust evalueren van separate en bewustwording gecorend anders over gesproken, mensen samen eerder risico, taal is anders!
- Het succes ontstond dat samen te werken er wel eens voor kan zorgen dat je beter kunt met verlaten en daarmee zijn waarde verliezen. De dynamiek zorgt ervoor dat we samen zoeken naar andere oplossingen. Zodat heeft het plan IP samen met de afdeling betrokken en in kamputen eruit gehaald.
- Randvoorwaarden die bewustwording stimuleren: oriëntatie op de waa, in zijn ook meer alternatieven (samenkomen kan op site)

Tips en suggesties

- We willen heel veel afdeling, maar we hebben de randvoorwaarden niet op orde. Daar moet alle aandacht naar uitgaan: personeel, verbouwing, ruimte op orde, rapportage, etc.
- Dat zijn de randvoorwaarden.
- Intervalle willen we wel, maar we hebben er gewoon geen tijd voor omdat we structureel onderbemand zijn.
- Wat wil GGNet met deze afdeling? Wij zijn van origine kortdurend, wat is het belang hier? Communicatie vanuit directie is belangrijk!
- Verpleegkundige aandacht geven aan de aansluiting van het team (fouleur is nu open en constructief, dat moet zo blijven)
- Focus houden op feedback geven en aanspreken op gedrag: openheid is belangrijk
- Meer personeel waardoor de druk afneemt! 1 jaar tijd 10 mensen weg
- Even Xandra worden dingen belooft die niet worden waargemaakt, dat voelt niet altijd goed.
- Meer 1 personeelskamer!
- Samenwerken stimuleren door vernieuwe werkwijzen te introduceren

Kenmerken van het werk

- Hollen of eilanden?
- Je weet nooit hoe de dag eruit gaat zien
- Samenwerking met ambulante zorg is belangrijk, maar niet altijd gemeengoed!
- Elke dag starten met het ochtendrapport
- Positieve houding om ondanks de druk te blijven kijken naar mogelijkheden!
- Steek gericht op oplossingen zoeken: patiënt verder helpen

Laakveld



Ochtendoverleg



Tip en Simon



Separereregels



Ochtendoverleg



MDO

- Patiënt wordt eruit gehaald
- Er is een concreet resultaat
- Verschiede partijen, zoals behandelbaar, psychiater, dokter denken mee en er wordt een behandelplan opgesteld
- EVV bereikt de case voor, soms worden er in totaal 3 casussen besproken

De feiten

- 18 - 20 cliënten
- Nachteld over 2 groepen (A enris B kortdurend)
- Gemiddelde leeftijd is ongeveer 35 jaar
- Verpleegkundigen worden over A en B (intra stroomt ook in de professionele)
- Door van verpleg ligt tussen paar weken en paar maanden
- Niet een verpleegkundige of verpleegkundige
- Soms noemen ze ons de dumpafdeling, wij vangen RCG op als het eruit is (we zijn er niet)
- Chirurgische patiënten komen bij ons

Visie op leren

- Patiënten worden a.d.h.v. een lijst doorgevoeren
- Overleg is moment om uit te zoeken over alternatieven en nieuwe ideeën om de patiënt te bedienen
- Er is geen formele opening, direct te komen in
- Psychiater loopt in lijst met patiënten af, perzoonlijk reflectie op de patiënt

Deze poster is ontwikkeld voor een gemeenschappelijk probleem met samenwerking, maar alleen in samenwerking. Het is de bedoeling dat de poster wordt gebruikt om de samenwerking te verbeteren en de samenwerking te verbeteren. Het is de bedoeling dat de poster wordt gebruikt om de samenwerking te verbeteren en de samenwerking te verbeteren.

Poster 2

De successen en uitdagingen van...

Actie Reflectie Groepen



Onderzoek naar leren bij ICCO

Deze poster is onderdeel van een onderzoek naar leren in netwerken in samenwerking met de Universiteit Twente en Kessels & Smit, *The Learning Company*



Vroeger, in Zeist, zaten we per land bij elkaar. Toen wisselden we veel uit, over aanpakken of ideeën om het beter te doen. Nu we hier in Utrecht zitten hebben we flex plekken en zijn we ook nog eens per thema ingericht. Dat maakt de uitwisseling een stuk lastiger. Ik kom veel van mijn directe peers niet vaak meer tegen.

Na de eerste bijeenkomst hebben we vooral vragen geïdentificeerd. Mensen waren blij 'dat er iets gedaan werd'. Tijdens de tweede bijeenkomst ontstond verwarring. Sommige mensen vonden het heel fijn om een casus te bespreken; anderen hadden verwacht dat het meer een training zou zijn. Ze hadden verwacht dat er theoretische input zou komen.



Het gaat vooral om het delen van ervaringen en kennis. Ik ben zelf ook met programma ontwikkeling bezig en loop daarin tegen allerlei vragen aan. Ik wil naar de juiste vorm en structuur zoeken om dit goed te doen en daarover met anderen uitwisselen. Want het is voor iedereen nog zoeken denk ik en er kan veel van elkaar worden geleerd.



Wat werkt? Eerste inzichten:

1

Het is voor een netwerk belangrijk dat je persoonlijk mensen uitnodigt. Een van de facilitators zei: 'ik heb iedereen wel gemild, maar het ging er vooral om dat ik bij de mensen die ik er graag wilde hebben langs ging en te benoemen dat ik ze er graag bij wilde hebben.' Je kunt lang niet iedereen uitnodigen en daar hoef je ook niet druk om te maken: wie echt wil komt vanzelf.

3

Een actie-reflectiegroep (ARG) werkt op het moment dat je door traditionele vormen van een bijeenkomst heen breekt. Door bijvoorbeeld een interview te gaan doen, of door elkaar tijdens de lunch te ontmoeten. Kies een vorm die past bij de groep. Het risico binnen de ARG is dat de vorm de inhoud bepaalt. Je hoeft niet perse te reflecteren over casussen, je kunt ook een wandeling maken, een interview houden of een expert uitnodigen. Waar het om draait is dat je met elkaar een volgende ontwikkel stap wil maken- op welke manier dan ook.

Houd het klein: dit gaat zowel over de vraag waar je het met elkaar over wilt hebben als de groep mensen met wie je deze vraag wilt verkennen. Het gaat niet om de grote vragen als 'wat is democratisering', maar om de dingen waar je dagelijks in je werk tegenaan loopt. Met een concrete vraag boek je makkelijker successen omdat je sneller acties hebt verzonnen die je meteen kan oppakken. En in een kleinere groep is het vaak gemakkelijker om eigenaarschap en veiligheid te voelen dan in een grotere groep.

4

ARG is ingezet om reflectie in het werk te bevorderen en direct toe te passen in de praktijk. Dat is belangrijk, maar de ARG zijn ook vooral een rustpunt: het is een plek voor vragen waar mensen nog niet de antwoorden op weten, om te spuien wat de organisatieverandering van je vraagt. Het is niet alleen op thema, maar ook om gewoon herkenning te vinden. Je vindt elkaar op thema, maar vooral ook op wat de veranderende organisatie met je doet.

5

Het is belangrijk om een actie-reflectiegroep zichtbaar te laten zijn in een organisatie. Als collega's weten wat er aan de gang is, kunnen aanhaken, vragen stellen, of gewoon gerustgesteld zijn dat iemand in de organisatie bezig is met dit thema. Dat maakt ook dat je weer kunt groeien. Door je te profileren maak je het thema ook belangrijk en neem je invloed in de ontwikkeling van ICCO.



Tot nu toe zijn we 3 keer bij elkaar gekomen. Op een gegeven moment bedacht ik samen met een collega om een aantal mensen binnen ICCO op het gebied van makelaren te interviewen. Dat idee ontstond tijdens de lunch. Dat leverde veel nieuwe inzichten: je ziet dat we veel kennis in huis hebben.



Belangrijk dat het wordt gestart, de ARGs. Goed dat het niet verplicht is, daardoor zitten echt de mensen er die er echt zelf willen zitten!

Ik zoek liefst mensen op met iets dat ik niet heb. Als ik in een ARG groep zit met allemaal mensen die hetzelfde hebben als ik... Er zijn een aantal mensen die een hele sterke visie hebben op programmaontwikkeling. Dat vind ik interessante mensen om mee te sparren. Mensen met een minder sterke visie, daar haal ik minder uit in deze fase van mijn programma-ontwikkeling. Namelijk: hoe wil ik het aanpakken.



Je ziet dat er erkenning is voor onze groep: als er ergens in de organisatie iets met landrechten gebeurt wordt er naar ons verwezen. Daardoor hebben we nu bijvoorbeeld weer een nieuw iemand die zich wil aansluiten.



Voor meer informatie kijk op <http://democracyandpeace.pbwiki.com/action-reflection%20groups>

Deze poster is gemaakt naar aanleiding van gesprekken in de Wandelgang. Voor vragen kunt u terecht bij Hettie Walters.

5. Email diaries

Participants in this network meeting

[Enumeration of participants in the network meeting, including affiliation and background]

[Date when filling in the email diary]

1 = totally disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = totally agree

<i>Statement</i>	<i>Rating</i>
The network participants challenge me to explore and discover in relation to the urgent work-related question	
The network participants complement each other in terms of relevant knowledge and create an attractive learning environment for me	
The collective images we have on how to solve the urgent work-related question are the same as my images	
I feel energy when I am working in the network	
The interest of the whole network and my personal interest are in line with each other	
I want to be part of the complete timeframe, until our questions are answered	
I share my knowledge with my network participants	
The network knows how to use the available time and resources	
I gain new capabilities by participating in this network	
The products and material the network makes are innovative in our domain	
The products and material the network makes will radically change our professional work environment	
The network is successful in locating relevant information and using this information	
Do you have questions or remarks? Please feel free to write them down	

6. Reflection meeting [name of network]

Description by [name of researcher]

[Date of the reflection meeting]

Participants in this network meeting

[Enumeration of participants in the network meeting, including affiliation and background]

[Name of the facilitator and / or facilitator of the network]

- 1 Introduction and objective of the reflection meeting by one of the researchers
- 2 First time frame of the reflection meeting

Focus on learning that leads to knowledge productivity in groups of three

- How would you describe the revenues of the network?
 - Which improvements have been realized
 - Which radical innovations are implemented?
 - Do these refer to operating procedures, products or services?
- What is valuable in this network for you?
 - What do you value in the network?
 - What kind of contributions of you network participants do you value?
 - What kind of connections within the network do you value?
- Second time frame of the reflection meeting

Focus on exchanging the findings of the first time frame in the whole group

- 1 Third time frame of the reflection meeting

Focus on stimulating and inhibiting factors of the network in groups of three

- Stimulating and inhibiting factors of the network
 - What kind of interactions do you see in the network?
 - How would you describe the role of the facilitator?
 - How would you describe the role of the initiator?
 - What kind of interventions proved to be valuable in the network?
 - What kind of intervention proved not to be valuable in the network?
- Additional remarks

- 1 Fourth time frame of the reflection meeting

Focus on exchanging the findings of the third time frame in the whole group and exchanging additional remarks

Curriculum Vitae

Tjip de Jong was born on April 13th 1980 in Leiden, The Netherlands. He grew up in Bussum where he completed his secondary schooling. He obtained a bachelors degree in Economics in 2001. After that he studied Business Administration at the *vrije* Universiteit Amsterdam. He specialized in the field of consultancy and in 2005 finished his study cum laude. During his Masters he did an internship at Kessels & Smit, *The Learning Company*. His Masters thesis was a case study research on the relation between social capital and learning within professional service firms. During his study, he worked as an Economics teacher at the Luzac College, a private high school in Utrecht. His experience as a teacher stimulated him to deepen his understanding in the field of Human Resource Development. After his graduation he started working at Kessels & Smit, *The Learning Company*. He combined his work at this consultancy firm with his PhD research. At Kessels & Smit, he is part of the Research Practice. The Research Practice works with action-based research that not only solves urgent work-related questions, but also aims to promote learning in practice. In 2008 he published a series of articles on his research in the Dutch management magazine *Intellectueel Kapitaal*. Tjip is connected to the Foundation of Corporate Education (FCE) in which he supports HRD-professionals in setting up and carrying out action-based research. Besides this, Tjip is a member of the board of editors of the Dutch HRD journal *Develop*.

Relevant publications

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- De Jong, T., & Kessels, J. W. M. (2007). Human Resource Development for social capital: an intricate process of knowing. International Congress on Social Capital and Networks of Trust. Jyväskylä, Finland.
- Van Der Sluis, L. E., & De Jong, T. (2006). Learning by connecting: Social capital as a learning landscape. Paper presented at the International Sunbelt Social Network Conference. Vancouver, Canada.

Epilogue in Dutch (nawoord)

Op deze plek wil ik diegenen bedanken die een belangrijke rol hebben gespeeld in het afronden van mijn promotieonderzoek.

Als eerste noem ik heel graag Suzanne Verdonshot en Joseph Kessels. Ik heb van jullie geleerd dat onderzoek doen niet alleen antwoorden oplevert, maar ook waarde toevoegt aan mensen en betrokken organisaties. Jullie lieten me al vanaf mijn afstuderen zien dat onderzoek doen leuk is. Zonder die ervaring was ik hier niet aan begonnen. Bedankt!

Ik wil ook mijn andere twee appelboomleden noemen: Cees Sprenger en Paul Keursten. Jullie steun en vertrouwen in mijn aanpak en keuzes hebben veel voor mij betekend.

De afgelopen jaren heb ik met plezier internationale conferenties bezocht. Tijdens deze reizen heb ik ontzettend veel plezier gehad. Johannes Boshuizen (weet je nog: die alligator?), Suzanne Verdonshot (kaas bij de burens), David Regeczi (sushi en nog meerr sushi), Ronald Visser (hoe maak je van een presentatie een workshop?), Nienke Molenaar (shoppen in Florida!), Frank Cornelissen (ein Stange bitte. Wat?) en Giel Kirkels (wat een roadtrip!); het waren geweldige reizen.

Kessels & Smit *The Learning Company* is voor mij een voorbeeld van een duurzaam kennisproductief netwerk. Er is geen collega die niet heeft meegedacht en waarde heeft toegevoegd aan dit onderzoek. Met name wil ik het *Good Office* team bedanken: zo vaak hebben jullie me geholpen met het maken van posters, websites, kaarten, offertes en plannetjes. Fantastisch!

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Tjip de Jong

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LINKING SOCIAL CAPITAL TO KNOWLEDGE PRODUCTIVITY

Why are some networks more successful in achieving innovation than others? Why do some groups within organizations manage to operate without hierarchical boundaries, and at the same time achieve extraordinary, innovative results? How do they learn? And what kinds of network characteristics do they cherish? This book presents the process and findings of a four-year PhD study on these questions. With empirical data of more than seventeen networks a theoretical framework is presented in which characteristics of social capital are linked to knowledge-productive learning processes. This book invites you to connect to the world of social capital, participative research and innovative learning and at the same time offers a practical guide to get started within your own social network.

About the author

Tjip de Jong is a member of *Kessels & Smit, The Learning Company*, an international network of consultants and researchers who support individuals, teams and organizations in learning and development issues. He has a particular interest in learning processes in communities and the relationship between social capital and knowledge productivity. In his consultancy practice he uses the concept of the playful organization as a basis for his work. He looks for opportunities to make things happen directly, to get going, and to bring pleasure, lightness and suspense: all of which to him is the essence of play. Tjip is the editor of the Dutch HRD journal *Develop* and lecturer at the *Foundation for Corporate Education*.

