

SOCIAL STRUCTURES FOR LEARNING
IRMA BOGENRIEDER AND BART NOOTEBOOM

ERIM REPORT SERIES <i>RESEARCH IN MANAGEMENT</i>	
ERIM Report Series reference number	ERS-2001-23-ORG
Publication	November 2001
Number of pages	24
Email address corresponding author	ibogenrieder@fbk.eur.nl
Address	Erasmus Research Institute of Management (ERIM) Rotterdam School of Management / Faculteit Bedrijfskunde Erasmus Universiteit Rotterdam P.O.Box 1738 3000 DR Rotterdam, The Netherlands Phone: +31 10 408 1182 Fax: +31 10 408 9640 Email: info@erim.eur.nl Internet: www.erim.eur.nl

Bibliographic data and classifications of all the ERIM reports are also available on the ERIM website:
www.erim.eur.nl

ERASMUS RESEARCH INSTITUTE OF MANAGEMENT

REPORT SERIES *RESEARCH IN MANAGEMENT*

BIBLIOGRAPHIC DATA AND CLASSIFICATIONS		
Abstract	This article investigates what learning groups there are in organizations, other than the familiar 'communities of practice'. It first develops an interdisciplinary theoretical framework for identifying, categorizing and understanding learning groups. For this, it employs a constructivist, interactionist theory of knowledge and learning. It employs elements of transaction cost theory and of social theory of trust. Transaction cost economics neglects learning and trust, but elements of the theory are still useful. The framework is used in an empirical study in a consultancy company, to explore what learning groups there are, and to see if our theory can explain their functioning and their success or failure.	
Library of Congress Classification (LCC)	5001-6182	Business
	5546-5548.6	Office Organization and Management
	5548.7-5548.85	Industrial Psychology
	58.82	Organizational Learning
Journal of Economic Literature (JEL)	M	Business Administration and Business Economics
	M 10	Business Administration: general
	L 2	Firm Objectives, Organization and Behaviour
	D 83	Searching, Learning and Information
European Business Schools Library Group (EBSLG)	85 A	Business General
	100B	Organization Theory (general)
	240 B	Information Systems Management
	100 S	Organizational learning
Gemeenschappelijke Onderwerpsontsluiting (GOO)		
Classification GOO	85.00	Bedrijfskunde, Organisatiekunde: algemeen
	85.05	Management organisatie: algemeen
	85.08	Organisatiesociologie, organisatiepsychologie
	85.08	Organisatiesociologie, organisatiepsychologie : Lerende organisatie
Keywords GOO	Bedrijfskunde / Bedrijfseconomie	
	Organisatieleer, informatietechnologie, prestatiebeoordeling	
	Lerende organisatie	
Free keywords	learning groups, theory of knowledge and learning, transaction cost theory, social theory of trust	

SOCIAL STRUCTURES FOR LEARNING

Irma Bogenrieder and Bart Nooteboom

Rotterdam School of Management, Erasmus University Rotterdam

Abstract

This article investigates what learning groups there are in organizations, other than the familiar ‘communities of practice’. It first develops an interdisciplinary theoretical framework for identifying, categorizing and understanding learning groups. For this, it employs a constructivist, interactionist theory of knowledge and learning. It employs elements of transaction cost theory and of social theory of trust. Transaction cost economics neglects learning and trust, but elements of the theory are still useful. The framework is used in an empirical study in a consultancy company, to explore what learning groups there are, and to see if our theory can explain their functioning and their success or failure.

Correspondence to:

Bart Nooteboom, Rotterdam School of Management, P.O. Box 1738, 3000 DR Rotterdam, e-mail: bnooteboom@fbk.eur.nl, tel. +31-104081934, fax +31-104089015.

SOCIAL STRUCTURES FOR LEARNING

Abstract

This article investigates what learning groups there are in organizations, other than the familiar 'communities of practice'. It first develops an interdisciplinary theoretical framework for identifying, categorizing and understanding learning groups. For this, it employs a constructivist, interactionist theory of knowledge and learning. It employs elements of transaction cost theory and of social theory of trust. Transaction cost economics neglects learning and trust, but elements of the theory are still useful. The framework is used in an empirical study in a consultancy company, to explore what learning groups there are, and to see if our theory can explain their functioning and their success or failure.

Introduction

An important issue in the theory of organizational learning is the relation between learning by people and learning on the level of the organization (Cook and Yanow 1996, Weick and Westley 1996). Between the level of the organization and the level of individuals, there is an intermediate level of teams or groups. The question addressed in this paper is whether there are other types of groups than the 'communities of practice' proposed by Brown and Duguid (1996).

In knowledge, there is an old distinction, going back to the ancient Greeks, between 'episteme' (explanatory knowledge, understanding) and 'techne' (know-how, ability to perform). Studies of memory yield a distinction between 'declarative' memory (knowledge of facts, explanations) and 'procedural' memory (Cohen and Bacdayan 1996). Procedural knowledge is, like techne, ability to perform. It is non-canonical, and embedded in practice, or practice-bound (Wenger 1998). A third distinction, going back to the work of Michael Polanyi, is that between tacit knowledge, which is locked in the mind, and codified knowledge, which can be documented. The connection between these concepts is that techne/procedural knowledge, being practice-bound, is highly but not necessarily entirely tacit.

There is no problem in recognizing that on the organizational level there is an ability ('techne') for collective performance (Cohen and Bacdayan 1996), in standard operating procedures, performance programs (March and Simon 1958), routines (Nelson and Winter 1982), or organizational scripts (Gioia and Poole 1984, Nooteboom 2000). There, people mutually adapt and combine skills and knowledge, and knowledge is distributed. Generally, no single person is able to grasp the procedure in its entirety. So, here we have knowledge that obtains on the organizational and not on the individual level.

Does an organization also have knowledge in the sense of 'episteme'? Clearly, it can have documented knowledge, in blueprints, formulae, standard operating procedures, and the like. It can have knowledge embodied in a machine, prototype or organizational structure. However, it does not literally have a mind, and can at best dispose of a collection of minds of people. That collection of minds may have structural or procedural similarities to individual minds, but at most the mind serves as a metaphor or a model.

On the organizational level there cannot be tacit knowledge other than that embodied in its people. However, people are able, with complications that will be discussed later, to exchange and share tacit knowledge. Of course, when individual knowledge is codified and documented, it can become part of organizational memory in the form of documents that are stored electronically or in hardcopy. However, it can never do so completely. No formally documented procedure can be complete in practice, including all the relevant procedural knowledge. In fact, one way to obstruct work processes, is to 'work to rule'. Practice is always context dependent, and requires context-specific knowledge to 'fill the holes' in formal procedures, or 'work around' specifications that do not fit specific, local conditions (Brown and Duguid, 1996). As a result, supplementary uncoded, context-specific knowledge held by people is generally needed.

It may be, however, that people can share such partly non-codified, procedural or non-canonical knowledge, in a team or community of practice (Brown and Duguid 1996). The latter has been defined as a 'group of people informally bound together by shared expertise and passion for a joint enterprise' (Wenger and Snyder 2000: 139). This suggests that between the level of the organization and the level of individuals, there is an intermediate level of teams or groups. They go beyond the individual level because they share the organizational property of a collective practice with distributed knowledge. However, on the level of a team more tacit, procedural knowledge may be shared than would be possible on the level of the organization.

The question we address in this paper is whether in the context of organizational learning there are other types of groups than the communities of practice proposed by Brown and Duguid. In what ways do people in organizations get together to learn what knowledge?

In our approach we combine competence and governance perspectives (cf. Williamson 1999). The governance perspective, as proposed in transaction cost economics, neglects learning, innovation and the development of competencies. The competence perspective tends to neglect issues of dependence, power, and relational risks of hold-up and spillover. We want to include both competence formation and governance of relational risk.

We proceed as follows. First, we specify the theory of knowledge and learning that we use, and the implications of ‘cognitive distance’ for learning by interaction. Next, we analyze aspects of governance. On the basis of those theoretical analyses we explore the relevant dimensions of social structures for learning. Subsequently, we turn to the empirical analysis, which consists of an exploration of social structures for learning in a consultancy firm, to see to what extent our theoretical analysis helps to explain how and why they work or fail to work.

Theory of knowledge

It is a truism to say that information is not the same as knowledge: to become knowledge, information needs to be interpreted in a cognitive framework. We employ a theory of knowledge and language derived from ‘symbolic interactionism’ in sociology (G.H. Mead), and the view, taken from cognitive psychology, that intelligence is internalized action (Piaget 1970, 1974, Vygotsky 1962, Bruner 1962). In contrast with the dominant ‘computational representational’ view in cognitive science, this leads to the view of knowledge in terms of ‘situated action’. Knowledge and the meaning of words are not independent from context. They lie partly in the context of use, and they shift from one context to another. This connects with the notion of procedural knowledge indicated before. For a more detailed analysis, see Nooteboom (2000).

The theory states that cognition takes place on the basis of mental categories (or models or schemata) that are partly developed in interaction with one’s physical and social environment. Those categories constitute our absorptive capacity (Cohen and Levinthal 1990), i.e. our ability to perceive, interpret and evaluate phenomena. Interpretation, in the transformation of information into knowledge, entails integration with existing knowledge. This may yield novel combinations (associations), yielding new insight into logical or causal relations. Those provide the basis for evaluation of utility or value, on the basis of means-end relations.

This process precludes objective knowledge (or at least any certain knowledge whether or to what extent knowledge is objective). We form perceptions, interpretations and evaluations according to cognitive or mental categories. This is called the ‘constructivist’, ‘interpretative’ or ‘hermeneutic view’ (cf. Weick 1979, 1995). However, to the extent that interaction between people is sustained and intensive, it will yield shared or similar mental categories.

Mental categories or schemata are more or less tacit. This applies, for example, to pattern recognition, as proposed long ago by Hayek. That arises in many areas, such as shapes of objects or drawings, physiognomy, practices, conditions and motives of behaviour. In discussions of tacit knowledge there is a tendency to see tacit and codified knowledge as substitutes, as when tacit knowledge is ‘externalized’ (Nonaka and Takeuchi 1995) into codified knowledge. However, there is also complementarity: underlying, tacit categories are needed to interpret and evaluate information (externalized knowledge) transmitted in communication. People properly understand and trust each other only if they sufficiently share underlying categories. When those are both tacit and incongruent, there is a problem. They may then first have to develop shared categories, by more or less ongoing and intense interaction, to establish shared tacit knowledge by ‘indwelling in the experiences, perspective, and concepts of other participants’ (Van Krogh 1998: 114), or what Lissoni (2001) called an ‘epistemic community’. The term ‘indwelling’ derives from Michael Polanyi. Outsiders will understand less what is going on in such a community. To become an effective member, one is first located at the periphery, to become socialized into the

categories shared in the community, before one can enter into 'full participation'. This process has been called 'legitimate peripheral participation' (Lave and Wenger, 1991).

Note that the view of cognition set out above is highly social, in two ways. First, knowledge is social because it is contingent upon interaction between people (see also Berger and Luckmann 1967, Elkjaer 1999). Second, it is social because rational and emotional aspects are intertwined. People develop categories of perception and of logical and causal inference, as well as judgement of value. This includes the attribution of competencies, values, goals and motives to other people, which are emotion-laden. In other words, cognition is closely related with social-psychological aspects of behaviour (Gherardi 1999, Edmondson 1999, Cook and Brown 1999, Lave and Wenger 1991).

Cognitive distance and its implications for learning

From our view of knowledge it follows that to the extent that people have developed their knowledge in different environments, and have not been in communication with each other, cognition will differ: there will be greater or lesser 'cognitive distance' (Nooteboom 1992, 1999a). Cognitive distance yields both an opportunity and a problem. The opportunity is that contact with others gives us a possibility to escape from the myopia of our personal cognitive construction, by profiting from the different insights of others, based on different experience. A problem, however, is that the greater the cognitive distance, the more difficult it is to cross it, i.e. to understand the actions and expressions of a partner. Thus there is something like an optimal cognitive distance: large enough for partners to tell each other something new, and small enough for comprehension. Absorptive capacity is part of our ability to cross cognitive distance. The other part is communicative capacity, or the ability to help others understand what we do or say, especially the tacit dimension.

In order to reduce cognitive distance, or to develop absorptive and communicative capacity to cross cognitive distance, one may need to engage in investments that are specific in the sense of transaction cost economics. That entails that in a different team one would have to make such investments again. This results from the condition that categories of thought and perceived meanings are to a greater or lesser extent context- and pathdependent, as was shown above. As a result, according to the logic of transaction cost economics, the relations involved have to have sufficient duration to recoup the investment. Summing up: one will invest in becoming member of an epistemic community only if one expects that membership will last sufficiently long to make the effort worth while.

Next to cognitive considerations in the narrow sense, there are also considerations from (social) psychology. We infer causes of behaviour and we attribute characteristics and motives to people according to mental categories or schemata. We can identify with people, and have empathy with them, to the extent that there is similarity of such behavioural schemata. These are generally based on shared experience in the process of indwelling indicated before. Empathy is highly relevant for trust, because it helps us to correctly attribute motives, sympathize with them and perhaps tolerate deviations from expectations. In other words, trust depends on the extent that people share cognitive categories (have limited cognitive distance).

Another aspect is cognitive dissonance: we may subconsciously resist information that is in conflict with established and cherished views or convictions, particularly if it would require the admission of mistaken choices in the past. Past acts have to be justified to oneself and to others, even at the cost of distorting facts or construing artificial arguments. Personal identities and social positions are at stake.

One definition of learning is the ability to respond differently to the same stimuli one had before. However, one might also learn to respond to new stimuli. There is learning in the sense of adopting existing knowledge from others, and there is learning in the sense of knowledge creation, i.e. developing or discovering new knowledge (Nonaka and Takeuchi 1995). There is a distinction between learning to do existing things better, and to do new things. The first has variously been called first order, single loop learning or learning for

exploitation, and the second has been called second order, double loop or exploratory learning (Argyris and Schön 1978, Hedberg, Nystrom and Starbuck 1976, Fiol & Lyles 1985, March 1991). To perform and survive in the short term one must do the first, and to survive in the long term one must do the second. So, one should do both, but that is not easy. To improve existing performance one often needs to maintain stability of existing structures in the division of labour, clear and unambiguous standards and terms. Consequently, efficient exploitation generally requires limited cognitive distance. For exploration one must relax existing tasks and structures and experiment with novel configurations, relaxing existing standards and meanings, and trying out new ones. Consequently, exploration requires greater cognitive distance and looser ties. One way to achieve cognitive distance is to implement a high turnover of group membership relative to the speed at which members are socialized to group ideas and practices (March 1991).

Governance

In learning, we must pay attention not only to competence, but also to governance, i.e. the control of relational risk. Exchange of knowledge has implications for social and strategic position. Giving knowledge or advice, and being seen to do so, can yield prestige, while receiving knowledge or advice can diminish it. Giving knowledge can be strategically risky because of potential 'spillover' problems. If the knowledge is close to 'core competence' or competitive advantage, then its adoption by potential competitors could threaten one's strategic position. A partner may use sensitive information as a hostage, i.e. threaten to divulge it to the competition if he does not get his way. In the literature on inter-firm relations such problems have been recognized (see, for example, Nooteboom 1999a). However, they apply also between individuals within a firm, to the extent that they compete for job positions and careers within the firm, as is typically the case in professional organizations such as consultancy firms.

There is no spillover risk if the knowledge given is not close to one's core competence, or when potential competitors lack the necessary absorptive capacity, or if by the time potential competitors have absorbed and implemented the knowledge it has already changed. If there is spillover risk, the value of knowledge one gains may exceed the disutility of spillover, so that one accepts it. If that is not the case, one way to control spillover is to have direct control over what happens to knowledge supplied to partners, to check that it does not spill over to competitors. If that cannot be done, another strategy is to demand exclusiveness: the partners one gives sensitive information to are not allowed to have ties with the competition in that area. However, one pays a price for such exclusiveness, in several ways. It reduces the variety of contacts that is the prime source of learning. By allowing partners to have contacts with one's competitors, those partners would have more varied sources of learning, which makes them more attractive as partners. Exclusiveness entails that one has to carry the full burden of training and teaching the partner, rather than sharing that effort with others. Also, exclusiveness yields costs of monitoring, to control that exclusiveness is indeed maintained. Such monitoring may not be possible, in which case the demand for exclusiveness becomes an empty one.

Another aspect of strategic position is dependence as a result of investments. As indicated before, if one has to make specific investments in order to communicate (cross cognitive distance), then one becomes dependent. Here we have the so-called hold-up problem. Group membership would have to last sufficiently long to recoup that investment. Next to specific investments to build mutual understanding, one may have to invest in building personalized trust, which also constitutes a specific investment.

How does one control or limit relational risk of spillover and hold-up? Control may be based on rewards, incentives, punishments, in short 'deterrence' (Shapiro et. al. 1992, Maguire et. al. 2001). Many authors feel that such control is foreign to the notion of trust, and that 'genuine' trust is based on other, more social and personal foundations of trustworthiness, such as loyalty, empathy, friendship, reciprocity, a sense of moral duty or

obligation, and routinized behaviour. Trust is a complex concept, and cannot be fully dealt with here (see Nooteboom 2002). Here, we mention only the most salient aspects, in the context of the present paper.

In trust in people ('behavioural trust'), it is useful to make a distinction between trust in competence, trust in intentions for fair dealing, trust in honesty or truthfulness, and trust in institutional conditions that affect actions and their outcomes. Here, these conditions refer to organizational conditions, such as structure and culture. Will a potential partner in the firm be able to perform and act as a source of learning (competence)? Will he not expropriate knowledge he receives, and use it to compete, and will he in fact be committed to utilize his competence for mutual benefit (intentions)? Will he tell the truth about his competence and intentions (honesty)? Will he be supported by organizational roles and procedures, and will he support the intentions and values of the organization? If expectations are disappointed, how can one identify the cause? If the partner is in fact opportunistic, it is precisely in that case that he will deny his intentions, and will claim an accident or a temporary lapse in competence to explain any violation of expectations. That is why honesty is so important.

Another feature of trust is that when people need each other more, or are locked into each other, there is a greater need for trust.

An important question of course is what the sources of trustworthiness are, especially for intentions. What makes someone act without opportunism, with commitment and care, and with honesty? Here, one can identify four different kinds of sources, summarized in Table 1.

table 1 about here

The source of cooperation may be universalistic ('macro'), applying to everyone in a culture or community (in this case the organization) or particularistic ('micro'), applying to a specific relation or set of relations in a team. It can be egoistic, oriented only to self-interest, or it can be altruistic, going beyond self-interest. When one governs relational risk on the basis of the partner's self-interest, this yields the deterrence form of control indicated above. A self-interested macro source is legal coercion: the partner is forced to comply. Self-interested micro sources yield incentives for the partner to comply: the partner depends on the value offered to him, one holds a hostage from him, or he needs to be seen to act decently in order to preserve a good reputation. Here, mutual dependence is based on strict 'quid pro quo'. Altruistic macro sources are shared values and norms of behaviour. Altruistic micro sources are friendship, empathy, routinization or other bonding that may arise in a specific relationship. With strangers our starting point is 'thin' generalized trust based on general norms, and in a personalized relationship this may develop into 'thick' trust. Generally, identification-based trust, yielding empathy, is supposed to develop from ongoing collaboration, with 'indwelling', which leads to the development of shared cognitive categories (in the broad sense discussed before, including norms of behaviour) (see, for example Lewicki and Bunker 1996).

Table 1 yields the idea of a general notion of 'reliance', which includes all sources of cooperation, including those of coercion and self-interest (deterrence), and a stronger notion of trust, where as a result of motives that go beyond self-interest, people are expected, within limits, not to be opportunistic even though they have an opportunity and an incentive for it.

Zand (1972) proposed a cycle in which trust engenders openness, yielding information, which provides a basis for the application and acceptance of mutual influence, which yields the willingness to demand less and accept more control from the partner, which further engenders trust. In other words, the provision of information based on trust promotes responsiveness to trust (Pettit 1995), which may already be latent but requires a trigger of information that has the dual function of demonstrating trust and reducing the risk of trust

reciprocation. This can set a positive dynamic of trust going. Thus, Zand (1972: 238) included openness in the conceptualization of trust as: ‘.. behaviour that conveys appropriate information, permits mutuality of influence, encourages self-control, and avoids abuse of the vulnerability of others’. Here, we see a positive relation between trust and information: A trusts B and therefore gives information (even if B could use that to the detriment of A), which makes B trust A and give information in return. This confirms the close relationship between trust and the giving of information, and hence between trust and learning.

When we turn to the design of relations, some mix of sources of reliability will be in operation. No universally best mix, regardless of specific conditions, can be specified. Often, trust based on friend- or kinship will not suffice as a basis for cooperation. It may not be sufficiently robust under extremes of temptation. Unconditional trust is unwise: it is too much to expect that partners will be able to resist even the strongest temptations or pressures towards opportunism. Thus, it is generally wise to see trust as subject to tolerance levels: one will trust until events are perceived that exceed a partner’s ability to resist temptation or pressures of survival. Conversely, governance by deterrence can be very costly, and can break down the basis for the development of personalized trust. Apart from that, they are seldom sufficient as a basis for cooperation: one needs trust on the basis of non-egoistic sources to the extent that one cannot fully control the partner’s conduct by threat, and to make such fragile basis for cooperation more resilient. A particularly productive form of governance is that of mutual dependence, with reciprocity of value, in combination with trust (in the strong sense indicated above).

Resilience arises from what Hirschman (1970) called voice. In exit, one walks out when dissatisfied, avoiding argument. That is, one quits from one’s job, fires people, sells shares or part of a firm. In voice, the first response is not to walk out, but to seek amends. One reports one’s dissatisfaction, asks for an explanation, welcomes criticism and asks for and offers help to ‘work things out’ together by solving problems, repairing shortcomings and eliminating misunderstandings. Voice is associated with trust in the strong sense, and empathy is crucial for it. Empathy is based on identification that results from mutual indwelling. It entails sympathetic perceptiveness and imagination: the ability to see and respect the other’s goals, to imagine and regret the effects of one’s own faults for the other, and to make an effort to prevent them. Empathy also enables one to see when the limits of the other’s trustworthiness are or will be exceeded, due to pressures and temptations he is subjected to, and to have a reasonable guess where the limits lie, and on what conditions they depend. Therefore, empathy provides the basis for both trustworthiness and trust, as well as the basis for identifying the limits of both. The same perceptiveness that leads one to assess the damage one may cause to others leads one to assess conditions where the other may cause damage.

Social structure

In an analysis of groups, one should take social structure and dynamics into account. Network analysis in sociology recognizes a number of structural features that may be relevant also for groups within organizations. One is density, i.e. the number of ties connecting members. A second is centrality, i.e. the presence of one or more members that have ties to many other members which themselves have few ties. A third is structural equivalence, that is two or more members that have ties to more or less the same other members. Structurally equivalent members, having the same pattern of ties in the group, may be rivals in the group. A fourth is outside embeddedness, i.e. the extent that members are also members of other groups or networks. A fifth is structural holes, that is lack of ties between parts of the network.

The network literature suggests that members who span structural holes can gain advantage (Burt 1992). If individuals or communities A and B are connected only by C, then C can take advantage of his bridging position by accessing resources that others cannot access, and by playing off A and B against each other. In the context of information

exchange, he can, for example, threaten to pass sensitive information that he has from A to B and vice versa, and can thereby extract advantage from both. As a result, the third party is maximally powerful and minimally constrained in his actions. The Latin term for this third party advantage is ‘tertius gaudens’. Krackhardt (1999) pointed out that this principle goes back to Simmel (1950). However, Krackhardt shows that Simmel also indicated that under some conditions the third party is maximally constrained. This occurs when he bridges two different cliques, with dense and strong internal ties, with different values and norms, while his actions are observed by both. The third party then has to satisfy the rules or norms of both cliques (the intersection of norm sets). The key factor that determines whether the third party is minimally or maximally constrained is the degree to which the third party’s actions are public, or at least known to both A and B. If not, then the situation described by Burt obtains, and he is minimally constrained. If his actions are public, he is maximally constrained.

Characteristics of learning groups

From the review of concepts and theory, we can now derive a number of features that might be taken into account in the analysis of social structures for learning. They can be divided into four dimensions: type of learning, structural features, relational risk, and governance.

We distinguish four types of learning. Learning can be oriented at the level of the individual or at the level of a team or organization. The object of learning can be generic, context-independent knowledge or competence, or the improvement of a specific project or practice. It can be aimed at different degrees of learning: exploitation or exploration.

Structural features of groups include the familiar features of the patterns of ties: density, centrality, structural equivalence, outside ties and structural holes. To these five structural features we add the following. Sixth is cognitive distance that has to be crossed for mutual understanding, requiring specific investments. Seventh is the duration of ties in the group: are they durable or ad hoc? Eighth is the exclusiveness of the group, i.e. closure to outsiders.

Relational risk refers to social and strategic position. It includes, first of all, the need that partners have for each other, with limited or no alternatives. Are they ‘condemned to each other’? It also entails social and strategic risk. The first entails gain or loss of prestige, appreciation and legitimation. The latter entails gain or loss of position in the internal competition for jobs, dependence and power. This includes risks as a result of specific investments and spillover.

Governance is characterized broadly of being oriented to exit or voice. Subsequently there is a specification of the instruments of governance specified in Table 1.

The different potential features of learning groups are summarized in Table 2.

table 2 about here

Clearly, the different features collected in Table 2 are not separate or independent: there are many connections between them. Or in other words: learning groups yield systemic configurations of features. Indeed, our prediction is that groups fail to the extent that the features are inconsistent with each other. From the earlier analysis a number of consistent connections between the features follow. A non-exhaustive list of examples of consistent features is given below:

- Exploration (exploitation) requires cognitive distance (proximity)
- Cognitive distance limits mutual understanding
- Cognitive distance also limits mutual identification and empathy, as a basis for trust
- To achieve mutual understanding and identification one needs to engage in specific investments

- In case of specific investments, the durability of ties has to be sufficient to recoup the investments (or else they will not be made).
- Durability also affects opportunities to engage in indwelling, mutual identification and empathy, to build both understanding and trust.
- High density increases internal spillover (note that spillover is meant here in a neutral sense, it does not necessarily entail a risk, in the sense of a danger to competitive position)
- Low exclusiveness of the group and external ties increase external spillover
- Threat of spillover limits willingness to give information
- When cognitive distance is large or change of knowledge is fast, there is less risk of spillover
- When spillover is perceived as a danger, it may lead to a reduction of density in the group, to limit internal spillover, and to exclusiveness of the group, to limit external spillover
- Exclusiveness and low density reduce variety of cognition, which constrains exploration
- Exclusiveness and low density may also limit competition and thereby limit efficiency
- Structural equivalence may entail rivalry, which would increase the fear of spillover
- Higher density of ties entails a greater probability of reputational loss or gain

The application of this framework can be illustrated by applying it to the familiar notion of a community of practice. In our understanding it would be characterized as indicated in Table 3. There is high mutual dependence among the members, with high specific investments for mutual understanding and identification, but this carries little threat of hold-up, due to internal norms, indwelling, identification and empathy as a basis for trust. There were specific investments in the past, but they have mostly been recouped. Due to long interaction cognitive distance is small. There are internal reputation effects, but due to a certain closure to the outside world there is limited risk of spillover outside the community. A potential weakness of this community is lack of exploration due to closure and small cognitive distance.

table 3 about here

Now we turn to the empirical study, to see whether in practice other groups than communities of practice can be found, and whether they reflect the theoretical features developed above. In a limited sense, this constitutes a test: to see whether the theoretical notions are found in practice, and whether the success or failure of learning groups can be explained by the theoretical logic. However, the study is also exploratory: we are scouting for unknown learning groups and we are open to the discovery of new features.

Case description

A case study was conducted in a firm that we name X. X is a global management consulting and information technology services company, present in over 20 countries with about 39.600 employees all over the world. The research was conducted at the Dutch branch of X, in the Business consultancy (BC) unit, consisting of about 80 people. In August 1999 and January 2000, 19 interviews were conducted at the Dutch headquarters of X with senior and junior business consultants and managing consultants. Managing consultants lead functional groups of around 15 business consultants each. In some cases, we talked to the business unit manager. The interviews took about 1.5 hours and were recorded.

X has a clear vision on HRM. There is strong emphasis on professional development and drive for excellence. Knowledge workers are considered an asset. However, there is also a strong emphasis on individual responsibility for one's professional career and professional development. The general view is that the organization can facilitate the professional development of the individual but it is the knowledge worker him/herself who must do it. Consistent with this HRM policy is the view that, in principle, every knowledge worker must take care of his/her own assignments. Depending on the assignment, the consultants work alone or in project teams with a client for several months up to several years. The composition of project teams depends on the expertise required and on the available consultants. There is a general rule that about 70% of the time of a knowledge worker should be productive for a client. Salary consists of two components. There is a basic component plus an addition that depends 1. on the performance of the national branch, 2. on the performance of the business unit, and 3. on the performance of the functional group within the business unit. The variable part of the salary is circumscribed as a variable performance indicator. Summing up, we find a mix of internal competition for careers, in individual responsibility for competence and acquisition of projects, and group-based incentives.

In about 1998, only the market focus was stressed, and the consultants became members of a so-called 'focus market group' (FMG). As the name implies, the primary goal of the FMG was to observe changes in the market and act on these changes through the development of new instruments to support the assignment process. Examples of such FMGs are 'social security and insurance' or 'corporate and merchant banking,' etc. The KPI (critical performance indicator) part of the salary depends in large part on the performance of the FMG. A third goal of the FMG – besides market watch and allocating accountability for financial performance – was building up a home base for the consultants. The members of an FMG could consult their peers with varying concerns and questions. A managing consultant is at the top of the FMG, but in fact he/she was 'primus inter pares.'

The problem arose that consultants were often employed in other projects than those within their own FMG. As a consequence, the expertise of many members of a FMG developed in a different direction from the original market focus. Nowadays, organizational structure is changing again. The business unit managers now have delegated various tasks to the managing consultants (of the FMG) who together form a management team. Financial performance is now measured on the level of the whole business unit. The role of the FMG in the new organization is not clear at the moment. In this situation, different FMGs have chosen different perspectives for their purpose.

Consultancy is defined within X as skills or knowledge in three domains: substance/content (i.e., market development, tools, methods), personal skills, and consultancy skills. On a more abstract level, the development of a consultant is described within X as development of 'being', 'skills', and 'knowledge'. Learning, therefore, is also positioned within this triangle. Learning of knowledge is provided by the numerous courses and training programs offered. Diverse groups are experimenting in how to foster the other two forms of learning. This research was conducted mainly in order to find out how 'being (a consultant)' and 'consultancy skills' are learned.

Results

In the research we identified four groups where, according to the respondents, learning takes place, or is intended to do so. Individual forms of learning, which mostly occur between a senior mentor and a junior or between two peer consultants, are left outside this description. Only forms of learning on the level of a group are considered. We first give a brief verbal description and then we see to what extent the groups satisfy the categories and the logic for learning groups developed above.

Project Team

Project teams consist of several consultants – sometimes also from other business units within X. In order to facilitate and encourage cooperation within a project team, X has recently begun to experiment with special attention to team processes. An attempt is made to find a balanced composition for the team (with the help of Belbin's questionnaire)¹. Before the start of the project, the members of the team were given a few days off in order to get to know each other. This was experienced as very valuable, because every team-member could explain his personal and private situation. This information helped to reduce ambiguity about the behaviour of a team member. E.g. a certain member started working after 9 a.m. because he had to bring his child to school. It was the common assignment to a client that initiated their collaboration. As the team consisted of four members, there was intensive interaction between all the members. There was no change in membership during the project. At the time of the present research, this project was finished. The members of the project team did not believe that the common practice during the project would be continued as a community of practice.

The team members reported that they learned a lot from each other, especially non-canonical knowledge. An example: the team used a certain tool that all members had learned to use in official courses organized by X. One team member reported that the tool, which was used by the team, is now much clearer than before this project: 'Of course, I already knew the tool, but now I have seen how my colleagues apply this tool'. Asked why he now understands this tool much better, he admits that he has now really experienced how this tool is applied. The team also developed new methods for implementing changes in the client organization. Asked for the reasons why the project members were inclined to try new methods, the answer was that they developed these methods together and they have committed themselves. As one respondent said: 'The manner in which the workshop were set up was decided by the group as a whole, and things were discussed there; I never would have come up with it on my own.' These statements confirm that in particular non-canonical knowledge was learned in this community. The basis for interaction can be circumscribed as indwelling, where members really delved into a colleague's use of a method. There was a lot of mutual adaptation and voice: 'Why I started applying things I hadn't before – because we had agreed to do it this way; you know, you don't have to agree with everything, but if you are going to work as a team... We had decided that we would do it in this fashion and we did it that way, and I did a number of things I normally never would have done.'

There was a team meeting every week in which both the progress made on the project and the team process were discussed. During these moments of reflection, possible conflicts or dissatisfaction within the team were discussed in a straightforward and timely fashion. The attention given to the team process was experienced as very valuable. It supported the development of a joint enterprise: 'I noticed that you are systematically given the opportunity to state what's gone right and particularly what's gone wrong, and it's important to get these things out on the table and then you find that – at first you hesitate: should I bring this up? Well, why not! – and then you find that you are not the only one; there are four or five others who agree with you. You're not alone, it becomes an important issue, you've got it off your chest and a week later the whole thing is resolved, that's how fast it goes.' And: 'We developed a team tool, in which we incorporated the values that we had put together as a team – we believe this and this and this to be important – we incorporated those into a team tool and we used that to score on a weekly basis so we could measure our progress in time and we could use it to lock on to the things we thought were going well: so when at a given point there was a good deal of friction about something, we could say, well that's a question of project management or the course we were taking or whether or not there was sufficient communication concerning vision or shared goals, you name it, and that led to our being able to resolve these problems within a week.'

¹ Belbin's questionnaire is a tool for the composition of a team (see e.g. Belbin 1984)

Expert Group

Another social structure for learning that could be identified was what we call the expert group. Expert groups originate not in a specific common context of application (there is no 'context-boundedness'), but in a common content of generic knowledge. Participation does not follow from common practice. There is no other common goal than learning explicit, codified knowledge. Participants do not expect that the acquired knowledge is directly related to daily work practices. There is not much discussion about the meaning of the acquired knowledge for the individual participant during the meeting. Every participant makes sense of the acquired knowledge on his/her own. Experts report the result of their (re-search) process.

Participants meet on a regular basis, around a certain theme (content), in which the participating consultants are especially interested. As far as their daily work is concerned the participants are involved in very different projects and FMG's; some members even come from other divisions within X. The non-redundant contacts (Burt, 1992) expand even to the external environment of X, e.g. speakers from universities are invited. Some of these expert groups are more institutionalized than others. They get a budget and a target (e.g. the development of a tool) by the management of the business unit. Other expert groups are formed voluntarily. Everybody can become member of an expert group without fulfilling any condition.

Focus Market Group

As already described above, FMGs are fully institutionalized. Up to about a year ago, the FMGs even had financial consequences in the reward system. Members of a FMG now meet at least once a month for half a day. As there is a considerable difference between the various FMGs as far as learning is concerned, we have to distinguish different types, with different goals.

One group has decided to meet for the sake of their own professional development. Thus the shared goal is: learning for professional (individual) development. We call this the 'professional development' group. Another FMG has decided to take as a common goal: learning for project improvement. The declared aim was to discuss the current projects of the individual members in order to give advice for improvement. In fact, as will be discussed below, this group failed to achieve its purpose. However, it turned out to be useful for an entirely different purpose, which we call 'orientation'.

Professional development

The development group discusses general themes of professional development, such as the norms and values of a consultant, conflict handling, giving unsolicited advice to a client. The members report a symmetrical relationship. The whole group decides whether a new member is accepted. New members can also come from outside. Group membership is relatively stable. In their daily work the members are involved in quite different projects. The members of the group may or may not work together in a project. They meet on a regular basis (mostly once a month). Absenteeism is very low; members are concerned when somebody is absent. Members report that they learn a lot because their colleagues ask very critical questions that strike them personally as professionals and make them reflect. Although the themes that are chosen by the group are so generic that everybody can contribute, members report that they nevertheless bring in their personal experience. The group does not discuss a concrete case or project, but discusses general issues, with which a consultant is confronted in his/her daily practice. Their own experience concerning these general issues is used for the discussion as a kind of case-study. The projects in which the members are involved are so diverse that there is a variety of experiences which can be brought in.

Members often cannot reach full treatment or final answers to a question during the meeting. Often, an individual process of reflection is initiated by a colleague's questions. There is no pressure and no attempt to reach consensus, either on the general issue or on the

personal experience that was brought in. The group as a whole does not determine what good practice is. Each individual member draws his/her own conclusions. However, there is intensive feedback, with a short cycle, during the meeting. The members use the group as working space and not just to narrate their experiences. Through discussion, feedback, and critical questions by colleagues, members are invited to explicate some of their implicit assumptions. Participants are eager to give comments and feedback to colleagues. The individual member decides whether and how he/she utilizes the comments.

From project improvement to orientation

The group that was intended for project improvement takes the various projects of the members as input for group discussions. The intention is that a member could present (parts of) a current project and the group could help to improve this project by giving advice, hints and tricks. Often, the agenda is determined by the managing consultant. The meetings take place once a month. Absenteeism is high and irregular. Absence is mostly explained by the priority of the current project or a client. Other group members do not question the reasons for absence.

Members report that they do not learn a lot during the meetings. Project improvement can hardly take place as the group does not succeed in discussing projects in sufficient detail. Generally, the meeting ends when every member has had a turn to tell about the current project. Sometimes, the story about a project is interrupted by a question related to the project (and not related to the craftsmanship of the consultant as in the development group). However, there is no pressure from other group members to explain the detailed background and course of a current project. As a member explains: 'This would cost too much time, and in this case not every member would get his turn.'

Another reason that was given for the low motivation to really discuss a project were the following. As the members talk about their actual work as professionals, they try to give a positive (or at least not too negative) story. The impression has to be avoided that somebody does not function properly in a project: 'There are a lot of ambitions in the group and the participants want to achieve them. They don't want to bring up matters that will hinder them from reaching their goals.' And: 'The information that comes out in the group has to be safe. Some things could play a role in one's career. That's why individuals do not want to admit they are incapable of certain things. There are no safety-checks.' As the managing director is member of the group, it is not clear what the consequences could be.

A third reason for not learning according to the respondents lies in the missing knowledge about the project. An individual must provide a lot of information and effort before others can realistically react, and then they must make an effort to absorb all the relevant details. The superficial information that can be given does not foster learning: 'It's better if you know more because then you hear more in what is said and it's more interesting; then real dialogue is possible, although it is difficult to do it with the whole group.'

Still another reason for lack of learning is that the themes are very time-sensitive. When a consultant feels the need of a colleague's advice, this is mostly not the time when a meeting is scheduled. As the members admit, for all these reasons the willingness to share knowledge and experience is low. The participants think about stopping this type of meeting, if the situation does not change. However, they do not wish to abolish the group totally. They like meeting their colleagues and hearing about the projects everybody is currently involved in. Furthermore, contacts are continued in other settings. When an individual member gets the impression that somebody else can help him/her, this person will be contacted outside the group.

Summing up: while the group failed in its purpose of project improvement, it served a function of orientation on who is involved in what kind of project, or has what kind of competence, to be followed up in other contacts outside the group.

Discussion

In Table 4 we specify the groups we found according to the categories developed earlier (Table 2). Under type of learning we have added a category INTERACTION that emerged from the case as clearly important. It makes a lot of difference whether the group aims at and accomplishes intensive interaction and feed back. That has implications for the type of learning and for the 'indwelling' that may provide a basis for trust.

When we compare the project team with the community of practice (Table 3), we see that it is largely similar. The participants were involved in learning during practice. Especially non-canonical knowledge was learned, as the example of the application of a certain methodology indicates. The project is described as a joint enterprise. This was supported by attention to the team-process. The participants developed shared values, which they used in order to reflect on the team process. In fact, the project-team developed a shared identity. This helped to use trust as a basis for governance, limiting threats of reputational loss, hold-up and spillover. Spillover is also reduced by a certain closure to the outside of the team. However, the project team has less continuity than a Community of Practice: after a specific project is finished, the team is disbanded, whereas a Community of Practice deals with a succession of projects. It was not ongoing local needs but a common assignment to a client that created the coherence of the team. As a result, closure is less and cognitive distance is not so reduced as would typically be the case in a community of practice. As a result, trust may be less 'thick' than in a community of practice, but this type of group has the advantage of more turnover of staff, and greater variety of knowledge, which would be beneficial for exploration.

The expert group constitutes a clear type that is very different from the community of practice. There are few specific investments among these professionals sharing specialized, highly codified, generic knowledge. As a result, switching costs are low and there is no hold-up problem. There does seem to be a possible spillover risk. There is no basis for trust from identification and empathy in a shared project. However, the spillover risk may be eliminated by a balance of reciprocal knowledge transfer. It may be that the value of knowledge one gets exceeds the possible disutility of spillover. In fact, mutual spill-over can be an important means for realizing reciprocity. This is confirmed in the Linux-community (DeFilippi and Arthur, 2000). That case showed that reciprocal exchange is also enhanced by the positive reputation effect of yielding a contribution that is recognized and acknowledged across a community of peers. Another possibility is that participants do hold back on knowledge that is too close to their position in job competition. It may also be that there is little job competition, or that the risk is compensated by rewards in relation to their contribution of knowledge to others.

When we turn to the professional development group, we see some similarity to the expert group, but also important differences. Whereas learning in the expert group was generic in the sense that it was not bound to specific contexts of application, it was specific to a specialized professional topic. In the development group, learning is less specialized: the members choose to take quite general themes for reflection. There is also much more interaction and feedback. This enables the group to exchange more tacit knowledge. They use their own experience in practice as material to work with. However, own experience is abstracted from its specific context, and becomes a hypothetical case: some details are highlighted, others are left out. Context-specific detail need not be fully incorporated. Situations may be discussed that never actually happened. Members can hide in vague references such as '...imagine that...' and '...as I once have experienced...' Thus experience is turned into 'near histories' and 'hypothetical histories' as critical events for thought experiment (March et al., 1996:4). These are events 'which have not really happened but which could have plausibly happened or which almost happened. Such simulated conditions are sometimes more prone for learning than real historical events' (March et al., 1996:7). The specification of real events is more risky: they have real legal, financial or reputational consequences. By using simulated case-descriptions, an experimental space is created where the individual can explore and play with ideas without feeling threatened. Spillover risk is

limited, since the knowledge involved is general, and has little connections with specialized competencies by which consultants distinguish themselves. To achieve mutual understanding and identification, some specific investment was needed, but it was also limited, since the subjects discussed were not specialized. Investment was specific in the sense that people had to adjust to each other's personal experience and perception, but not to specific contexts of specific projects. It is possible that the perceptiveness developed here is applicable more generally, so that the investment is not specific to the group.

In the project improvement group, the aim was to analyze and improve the projects in which the members are currently involved. In contrast with the development group, the stories are realistic accounts of real events. However, learning does not occur. This is an interesting failure. This form of group cannot reach its purpose for several reasons. First, the consultants did not really need each other, in the sense that they had to come up with good results together, in a shared project. Giving advice did not entail a commitment with shared responsibility for the project. Second, coming from different projects, the consultants did not share the necessary tacit, context specific knowledge. To achieve sufficient understanding of the project, needed to generate relevant advice, would require far more time than was available in the meetings. Furthermore, the effort for others to understand a specific project would constitute a specific investment, which would be made only if the relationship would last sufficiently long to recoup it, and that was simply not the case: contacts were incidental and ad hoc. The investment in understanding was specific, i.e. could not be used in the consultants' own projects. In other words: trying to understand a specific project was simply not worth the effort, since it was insufficiently relevant for one's own project. In contrast with the project team there is no shared responsibility for a joint project, no ongoing interaction that makes specific investment worth while, and no building of mutual empathy and trust that eliminate risks of reputation and spillover.

It can be threatening to divulge your problems and failures in public to people you have no intimate, durable working relationship with. The reputational risk is large. There is a high degree of outside ties of the members of the group: they are members of diverse other groups. There is a high probability that a member of the group will work with another member on a future project. Here, we might apply the analysis of structural holes. There is a risk that knowledge divulged about weak performance might be used as a basis for refusing collaboration in future, or as a hostage, for blackmail, with the threat to divulge it to management or clients. Krackhardt's line of argument might also apply. Since the discussions in the improvement group are public, one has to satisfy the norms of both the project group one represents and the group itself. This constrains what one is able to tell. One may jeopardize the support of the team one represents. This adds to the reasons not to divulge too much. There was no basis for trust to cover relational risks, neither in a balance of mutual dependence, nor in prior 'indwelling' and shared experience as a basis for shared norms of conduct and empathy. Some of the consultants may be familiar with each other on the basis of earlier joint projects, but is not likely to be the case for all members. This problem of relational risk could perhaps be overcome by norms on the firm level, in a strong corporate culture, but apparently it was not. Thus, relations tended to be in the nature of exit rather than voice. This group was too unlike a community of practice and the project team discussed above to achieve its goal of project improvement.

This does not imply, however, that the group is useless also for other purposes. The members said that there was no learning, but that the contacts were useful for a different purpose: an orientation on who was doing what and how. Thus, they could select partners for developing bilateral contacts later on. This suggests that the group is successful as an orientation group. That group does not have the purpose to actually exchange or build knowledge on content or project, but to provide a market-place, as it were, for consultants to orient themselves on the demand and supply of knowledge. For this purpose, the meetings should be arranged for consultants to be able to make at least a preliminary judgement of whom they might trust. This needs to entail the different aspects of trust: in competence (can

colleagues supply relevant and useful knowledge), intentions (will they not expropriate knowledge, make a commitment, exhibit care, and refrain from free-riding), honesty and institutional conditions, such as work-load, support, motives (to enable their contribution). On the basis of that they can pick up the contact and develop a collaborative relationship outside the meeting.

Conclusions

We have developed and applied a theoretical framework for the identification, classification and evaluation of different learning groups. The framework included features related to the type of learning, social structure, relational risk and governance. Overall, the theoretical framework demonstrated its usefulness. The groups that we found empirically varied in the dimensions that were proposed, and their success or failure could be explained on the basis of the theoretical framework. We also encountered some things that were not incorporated in the theoretical framework.

One new feature that came up was the degree of interaction and feedback between members of the group. That is important for a number of other features. Interaction is not needed for the mere exchange of codified knowledge, but it is needed to develop shared cognition, indwelling, identification, empathy and trust. That occurs in the community of practice, the project team, and the development group. Its importance becomes clear in view of the need to develop trust on the basis of identification. It is also clear when we refer back to the trust process as described by Zand, which was briefly summarized above.

From the project team we learned that it can achieve many of the benefits of a community of practice, with an added advantage of greater flexibility and variation for the sake of exploration next to exploitation. A condition seems to be that next to the shared project, systematic attention should be given to the team process.

From the expert group we learned that high spillover risk may be accepted on the basis of a profitable balance of gain and loss of knowledge, and/or positive reputation effects.

From the development group we learned that indwelling, as a basis for identification, need not be based on joint goals and experience in a joint project or a community of practice. It can also be based on abstracted experience told in the form of 'near histories' or 'hypothetical histories'. We also learned that this abstraction from personal experience can eliminate reputational risk, spillover risk, and the risk of information being used as a hostage.

The improvement group is an interesting failure. Its failure could be well explained with the theoretical framework. In view of its form it could not be expected to achieve its purpose. It could, however, serve another purpose. That leads us to a another new group: the orientation group, where people meet in order to assess the supply and demand of knowledge and orient themselves on potential future partners.

Our empirical work did not systematically take into account the organizational conditions that might influence the functioning of the group, especially governance. Risks that arise in groups might be lessened or amplified by organizational culture. This should be taken into account in future work. In particular, one might compare groups that are structurally similar but arise in different organizations with different cultures, to identify possible culture effects. In this article we used the theoretical framework for an ex-post explanation of learning groups that were identified empirically. The framework might also be used to predict viable forms, and then test their occurrence.

Table 1 Sources of cooperation

	macro	micro
egoistic	sanctions from some authority (the law, god, Leviathan, dictator, patriarch, organization), contractual obligation	material advantage or self-interest: shadow of the future, reputation, hostages.
altruistic	ethics: values, social norms of proper conduct, moral obligation, sense of duty	bonds of friendship, kinship; routines, habituation

source: adapted from Williams (1988).

Table 2 Possible features of learning groups

Type of learning	
Level	individual or collective
Object	generic: improve context-independent knowledge or competence (declarative, highly codified), or specific: improve performance in a specific project or practice (procedural, highly tacit)
Degree	exploitation/incremental improvement or exploration/radical change
Knowledge	canonical, declarative, codified or non-canonical, procedural, tacit
Structural features	
density	number of ties
centrality	members with relatively many ties
structural equivalence	members with similar patterns of ties
outside ties	other groups or networks one is a member of, at the same time
structural holes	lack of ties between parts
cognitive distance	difference in categories of thought and evaluation
durability	duration of ties
exclusiveness	closure to outsiders
Relational risk	large or small
Need	high or low need for each other, with lack of alternatives
Reputational risk	loss or gain of reputation
Strategic risk	loss or gain of competitive position (hold-up, spillover)
- competition	
- specific investments	
- spillover	
Governance	voice or exit
Deterrence	formal agreement, hostages, reputation, 'quid pro quo'
Trust	org. culture, organizational norms reciprocity, prior familiarity, indwelling/empathy, internal norms

Table 3 Community of Practice

Type of learning	
Level	collective
Object	specific project or practice (procedural, highly tacit)
Degree	exploitation/incremental improvement
Knowledge	non-canonical, tacit, procedural
Structural features	
density	high
centrality	low
structural equivalence	high
structural holes	low
outside ties	low
cognitive distance	low
durability	long
exclusiveness	high
Relational risk	low
Need	high
Reputational risk	Potentially high due to high density of ties, but actually low due to tight personal ties and high trust
Strategic	low, due to high mutual trust
Governance	voice
Deterrence	balance of dependence
Trust	indwelling, familiarity, identification, durability of relation, routinization, internal norms

Table 4 Learning groups

	Project team	Expert group	Professional development	Project improvement	→ Orientation
Type of learning					
level	collective	individual	individual	individual	individual
object	specific	generic	generic	specific	specific
degree	exploitation	exploration	exploration	exploitation	neither
knowledge	non-canonical, tacit	canonical, explicit	procedural tacit	tacit	explicit
Interaction	high	low	high	low	low
Structural features					
density	high	low	high	low	low
centrality	low	low	low	low	low
str. equivalence	high	low	low	low	low
outside ties	low	high	high	high	high
structural holes	low	high	high	high	high
cogn. distance	low	low	high	high	high
continuity	limited	low	high	low	low
exclusiveness	high	low	high	low	low
Relational risk	low	low	low	high	low
Need	high	high	low	low	low
Reputational risk	low	high	low	high	low
Strategic risk					
- competition	low	high	high	high	high
- spec. investm.	high	low	low	high	low
- spillover	medium	high	low	high	low
Governance	voice	exit	voice	exit	exit
Deterrence	balance of dependence	exclusion as penalty on free-riding, reputation	reputation	hostages, reputation	exclusion
Trust	reciprocity, indwelling, empathy, internal norms	prior familiarity perhaps empathy	indwelling empathy	none other than prior familiarity	none other than prior familiarity
Success	high	high	high	low	high

Note: the group that started as project improvement is listed twice, with the same structural characteristics but with different aims: project improvement and orientation.

Literature

Argyris, C. and D. Schön (1978). *Organizational learning*, Reading, MA.: Addison - Wesley.

Belbin, M. (1984). *Management Teams. Why they succeed or fail?*, London: Butterworth.

Berger, P. and T. Luckmann (1967). *The social construction of reality*, New York: Doubleday.

Brown, J. S. and P. Duguid (1996). 'Organizational learning and communities of practice', in M. D. Cohen and L. S. Sproull (eds.), *Organizational learning*, London: Sage, 58 - 82. First printed in 1991 *Organization Science*, 2/1.

Bruner, J. S. (1979) (first published 1962). *On knowing; Essays for the left hand*, Cambridge MA: The Belknap Press.

Burt, R.S. (1982). *Toward a structural theory of action*, New York: Academic Press.

---- (1992). 'The social structure of competition', in N. Nohria and R.G Eccles (ed.) *Networks and Organizations*, Harvard: Harvard Business School Press: 57-91.

Choo, C. W. (1998). *The knowing organization*, Oxford: Oxford University Press.

Cohen, M. D. and P. Bacdayan (1996). 'Organizational routines are stored as procedural memory', in M. D. Cohen & L. S. Sproull (eds.) (1996). *Organizational learning*, London: Sage, 403 - 30; first printed in *Organization Science*, 5/4, in 1994.

---- and D. A. Levinthal (1990). 'Absorptive capacity: A new perspective on learning and innovation', *Administrative Science Quarterly* 35, 128 - 52.

Cook, S. D. D. and D. Yanow (1996). 'Culture and organizational learning', in M. D. Cohen & L. S. Sproull (eds.) (1996). *Organizational Learning*, London, Sage, 430 - 5; first printed in *Journal of Management Enquiry*, 2/4, 1993

---- and J.S. Brown (1999). 'Bridging epistemologies: The generative dance between organizational knowledge and organizational knowing', *Organization Science*, July/Aug: 381-400.

Edmonson, A. (1999) *Psychological Safety and Learning Behavior in Work Teams*, *Administrative Science Quarterly*, 44: 350-383

Elkjaer, B., (1999) *In Search of a Social Learning Theory*. In: M. Easterby-Smith, L. Araujo, J. Burgyne (ed.): *Organizational Learning and the Learning Organization*. Thousand Oaks: Sage. 75-91.

Fiol, C. M. and M. A. Lyles (1985). 'Organizational learning', *Academy of Management Review*, 10/4, 803 - 13.

Gherardi, S., D. Nicolini and F. Odella (1998). 'Toward a Social Understanding of How People Learn in Organizations', *Management Learning*, 29/3: 273-297

- Gioia, D. A. and P. P. Poole (1984). 'Scripts in organizational behaviour', *Academy of Management Review*, 9/3, 449 - 59.
- Hedberg, B. L. T., P. C. Nystrom and W. H. Starbuck (1976). 'Camping on seesaws: Prescriptions for a self - designing organization', *Administrative Science Quarterly*, 21, 41 - 65.
- Hirschman, A. O. (1970). *Exit, voice and loyalty: Responses to decline in firms, organisations and states*, Cambridge MA: Harvard University Press
- Krackhardt, D. (1999), 'The ties that torture: Simmelian tie analysis in organizations', *Research in the Sociology of Organizations*, 16: 183-210.
- Krogh, G., van (1998), "Care in Knowledge Creation", in: R.E. Cole (ed.) *California Management Review*. Special Issue on Knowledge and the Firm. Vol. 40/3: 133-153
- Lamming, R. (1993). *Beyond Partnership*, New York: Prentice Hall
- Lave, J., Wenger, E. (1991) *Situated Learning. Legitimate Peripheral Participation*. Cambridge: Cambridge University Press
- Lewicki, R.J. and B.B. Bunker (1996), 'Developing and maintaining trust in work relationships', in R.M. Kramer and T.R. Tyler (eds), *Trust in organizations: Frontiers of theory and research*, Thousand Oaks: Sage Publications: 114-139.
- Lissoni, F. (2001), Knowledge codification and the geography of innovation: The case of the Brescia mechanical cluster, paper for the workshop on 'The influence of cooperation, networks and institutions on Regional Innovation Systems', Max Planck Institute Jena, 8-10 February.
- Maguire, S., N. Philips and C. Hardy (2001), 'When "silence=death", keep talking: Trust, control and the discursive construction of identity in the Canadian HIV/AIDS treatment domain', *Organization Studies*, 22/2: 285-310.
- March, J. (1991). 'Exploration and exploitation in organizational learning', *Organization Science*, 2/1.
- L.S. Sproull and M. Tamuz (1991). 'Learning from Samples of One or Fewer', in M.D. Cohen, L.S. Sproull (eds.), *Organizational Learning*, London: Sage, 1-19
- and H. A. Simon (1958). *Organizations*, New York: Wiley.
- Nelson, R.R. and S. Winter (1982), *An evolutionary theory of economic change*, Cambridge: University Press.
- Nonaka, I. and H. Takeuchi (1995). *The knowledge creating company*, Oxford: Oxford University Press.
- Nooteboom, B. (1992). 'Towards a dynamic theory of transactions', *Journal of Evolutionary Economics*, 2, 281 - 99.
- (1999a). *Inter-firm alliances; Analysis and design*, London: Routledge.

- (1999b), 'Innovation, learning and industrial organization', *Cambridge Journal of Economics*, 1999, 23/2: 127-150.
- (2000), *Learning and innovation in organizations and economies*, Oxford: Oxford University Press.
- (2002), *Trust: forms, foundations, functions, failures and figures*, Cheltenham: Edward Elgar, forthcoming.
- Pettit, Ph. (1995a), 'The cunning of trust', *Philosophy and public affairs*, 14/3: 202-225.
- Piaget, J. (1970). *Psychologie et épistémologie*, Paris: Denoël.
- (1974). *Introduction a l'épistémologie génétique*, Paris: Presses Universitaires de France.
- Simmel, G. (1950), 'Individual and society', in K.H. Wolff (ed.): *The sociology of George Simmel*, New York: Free press.
- Smircich, L. (1983). 'Organization as shared meaning', in L. R. Pondy, P. J. Frost, G. Morgan and T. C. Dandridge (eds.), *Organizational symbolism*, Greenwich Conn: JAI Press, 55 - 65.
- Thompson, J. D. (1967). *Organizations in action*, New York: McGraw-Hill.
- Van Krogh, G. (1998) *Care in Knowledge Creation*, *California Management Review*, 40: 3: 133-153
- Vygotsky (1962). *Thought and language*, edited and translated by E. Hanfmann and G. Varkar, Cambridge MA: MIT Press.
- Weick, K. F. (1979). *The social psychology of organizing*, Reading, MA: Addison - Wesley.
- (1995). *Sensemaking in organisations*, Thousand Oaks CA: Sage.
- and F. Westley (1996). 'Organizational Learning: Affirming an Oxymoron', in S.R. Clegg, C.Hardy, W.R.Nord (eds.), *Handbook of Organization Studies*, London: Sage: 440-458
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning and Identity*, New York – Oxford University Press
- Wenger, E.C., Snyder, W.M. (2000). *Communities of Practice: The Organizational Frontier*. *Harvard Business Review*, jan-feb. 139-145
- Zand, D.E. (1972). 'Trust and managerial problem solving', *Administrative Science Quarterly*, 17/2: 229 - 239.

Publications in the ERIM Report Series Research* in Management

ERIM Research Program: "Organizing for Performance"

2001

Employee Perception on Commitment Oriented Work Systems: Effects on Trust and Perceived Job Security

Paul Boselie, Martijn Hesselink, Jaap Paauwe & Ton van der Wiele

ERS-2001-02-ORG

The Emergence of a Private Business Sector in China: The Case of Zhejiang

Barbara Krug & Hans Hendrichske

ERS-2001-03-ORG

Contingent Employment in the Netherlands

Ferrie Pot, Bas Koene & Jaap Paauwe

ERS-2001-04-ORG

Under Construction. (Identities, Communities and Visual Overkill)

Slawomir Magala

ERS-2001-17-ORG

The Dutch Banking Chipcard Game: Understanding a Battle between Two Standards

Henk J. de Vries & George W.J. Hendrikse

ERS-2001-18-ORG

Social Structures for Learning

Irma Bogenrieder & Bart Nooteboom

ERS-2001-23-ORG

Empirical Evidence for the relation between customer satisfaction and business performance?

Ton van der Wiele, Paul Boselie & Martijn Hesselink

ERS-2001-32-ORG

On the emergence of growers' associations: self-selection versus market power

G.W.J. Hendrikse & W.J.J. Bijman

ERS-2001-34-ORG

Employee perceptions of HRM and TQM and the effects on satisfaction and intention to leave

Paul Boselie & Ton van der Wiele

ERS-2001-42-ORG

Project Contract Management and a Theory of Organization

J. Rodney Turner & Stephen J. Simister

ERS-2001-43-ORG

The Geography of International Strategy: A multi-level framework

Douglas van den Berghe

ERS-2001-51-ORG

* A complete overview of the ERIM Report Series Research in Management:

<http://www.ers.irim.eur.nl>

ERIM Research Programs:

LIS Business Processes, Logistics and Information Systems

ORG Organizing for Performance

MKT Marketing

F&A Finance and Accounting

STR Strategy and Entrepreneurship

"The E-Business Research Network". Summary of the results of the Dutch pilot survey
Ton van der Wiele, Roger Williams, Jos van Iwaarden, Melanie Wilson & Barrie Dale
ERS-2001-59-ORG

Cold Wars and Hot Issues. (Management of Responsibilities)
Dr Slawomir Magala
ERS-2001-64-ORG

2000

Critical Complexities, from marginal paradigms to learning networks
Slawomir Magala
ERS-2000-02-ORG

Marketing Cooperatives and Financial Structure: a Transaction Costs Economics Analysis
George W.J. Hendrikse & Cees P. Veerman
ERS-2000-09-ORG

A Marketing Co-operative as a System of Attributes: A case study of VTN/The Greenery International BV,
Jos Bijman, George Hendrikse & Cees Veerman
ERS-2000-10-ORG

Marketing Co-operatives: An Incomplete Contracting Perspective
George W.J. Hendrikse & Cees P. Veerman
ERS-2000-13- ORG

Ownership Structure in Agrifood Chains: The Marketing Cooperative
George W.J. Hendrikse & W.J.J. (Jos) Bijman
ERS-2000-15-ORG

Organizational Change and Vested Interests
George W.J. Hendrikse
ERS-2000-17-ORG

Is Polder-Type Governance Good for You? Laissez-Faire Intervention, Wage Restraint, And Dutch Steel
Hans Schenk
ERS-2000-28-ORG

Foundations of a Theory of Social Forms
László Pólos, Michael T. Hannan & Glenn R. Carroll
ERS-2000-29-ORG

Reasoning with partial Knowledge
László Pólos & Michael T. Hannan
ERS-2000-30-ORG

The Strawberry Growth Underneath the Nettle: The Emergence of Entrepreneurs in China
Barbara Krug & László Pólos
ERS-2000-34-ORG

Trading Virtual Legacies
Slawomir Magala
ERS-2000-36-ORG

The Interdependence between Political and Economic Entrepreneurship
Barbara Krug
ERS-2000-43-ORG

Ties that bind: The Emergence of Entrepreneurs in China
Barbara Krug
ERS-2000-44-ORG

Human Resource Management and Performance: Lessons from the Netherlands
Paul Boselie, Jaap Paauwe & Paul Jansen
ERS-2000-46-ORG

Possible futures for the HR function in different market
Roger Williams, Jaap Paauwe & Anne Keegan
ERS-2000-54-ORG

Quantity versus Quality in Project Based Learning Practices
Anne Keegan & J. Rodney Turner
ERS-2000-55-ORG

The Management of Innovation in Project Based Firms
Anne Keegan and J. Rodney Turner
ERS-2000-57-ORG

Learning by Experience in the Project-Based Organization
J. Rodney Turner, Anne Keegan & Lynn Crawford
ERS-2000-58-ORG