

Diversity and Learning for Innovation: Dialogue for Collaboration

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Abstract

Purpose – The paper sets out to develop an approach for improving linguistic skills to enhance work collaboration.

Design/methodology/approach – A framework has been developed using principles of complex systems thinking, cultural-historical activity theory and theories of intercultural communication in an action research setting.

Findings – Organisational development and change is never a straight forward task, which the case clearly demonstrates. These are tension filled processes of continuously changing power relationships and distances between people. The development of shared sense making is an iterative learning process. Co-developing shared communication strategies enhances dialogue and collaboration.

Research limitations/implications – A single and in practice unsuccessful case has been the basis of the research findings. Although saturation of data was therefore never reached, typical inhibiting factors were brought to surface. Controversy and underlying inhibitions may not always be easy to detect in successful cases. The understanding from this unsuccessful case may therefore be helpful for further research.

Practical implications – Collaboration and change in the work place are complex processes and are therefore difficult to implement. Collective approaches for developing communication strategies are highly dependent on including all affected actors.

Originality/value – The realisation of the complexity of organisational change processes is important. This creates an awareness of a need and responsibility for everyone affected to try and co-develop the practices for change. It is the bringing together the diverse experiences into learning processes through dialogue that facilitates these changes. There must be an appreciation that the outcome is still unpredictable in a process of change. Collective ownership to the changes is essential for success.

Keywords – Complex activity networks, exploration and learning, dialogue and collaboration.

Paper type – Case study.

1. Introduction

1.1 The environmental challenges

Trying to sustain in a rapidly changing environment can be both challenging and painful experiences for people facing these realities. In this paper the authors try to present the experiences of one of them in a Norwegian engineering consultancy. The company had been a supplier of technical services and expertise to the offshore industry for 20 years, right from the early days of this once expanding industry in Norway. With increasing pressure on the price of oil, and new marginal oil fields at deeper sea depths, this new reality required substantial cost reductions. Secondly, a different organisation of the contract/project as well as new techniques and technologies to get hold of the oil and gas was required. It was the 'too formalised' and heavy offshore engineering 'model' that needed to be made more flexible and adaptable to a new reality. What had once been innovative engineering and design was drastically challenged by the urgent need to take further innovative steps.

1.2 The research framework

The paper describes an attempt to change the existing situation of the consultancy in order to adapt it to the new market conditions. As research this was not fully participatory action research because the practitioners participating in the change process did not participate in the writing up of the exercise. Therefore they could not use the final analysis as a basis for future change processes for the company. They, however, participated in creating local theory for change during the attempted change activity.

Kurt Lewin first introduced the term action research in 1946. Action research can be seen as the combined process of changing a social system at the same time as creating knowledge about it (Elden & Chisholm, 1993). Participatory action research is the emergent process linking the participation of researchers and practitioners to this process (Greenwood et al, 1993).

An activity is a developmental process connecting the individual and the social levels through their human artefacts and their object orientation. When applying these principles in an action research setting, it can be argued that the participants in an activity create local theory when they discuss, and reflect on topics, and make abstract models changing their work. These theories or mental models focused on in terms of a common object assist individuals in on doing new things together.

1.3 The evolving and complex activity network

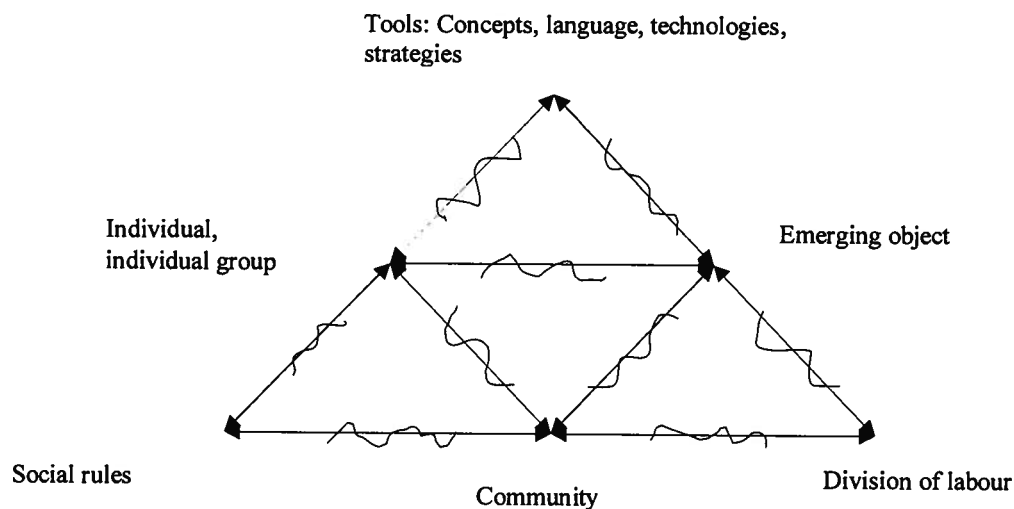


Figure 1 Complex activity network

Figure 1 illustrates a complex activity network (Engeström, 1987). The elements of the activity are represented by the individual subjects of consideration, their activity community, and the human artefacts. These artefacts are represented by

the individual's tools, the community's social rules, the division of labour and the emerging object. All the elements of an activity are potentially interconnected. The curly lines on top of the connection arrows illustrate potential tensions or disturbances between elements. Qualitative change can occur when there are disturbances between the elements. In other words change occurs at moments of instability or bifurcation in solution space. This happens when some new aspects or elements grow in the system, re-structure it, invade new dimensions and thus lead to emergent properties and attributes (Rose-Anderssen et al, 2005). The relationships between the elements are therefore in continual processes of modification and take multiple and diverse forms within the time of the activity (Foucault, 1972). In other words as people try and change and develop an activity, they are themselves changed by their adaptation to these changes. Consequently the activity evolves through time.

Importantly, Allen (2001a) argues that in a complex evolutionary system, due to the non-average behaviour of the actors, the system would have a potential for excess knowledge capacity. Because of the interactions between actors, who have diverse opinions and experiences they have the potential of responding to challenges from the environment in multiple and unpredictable ways.

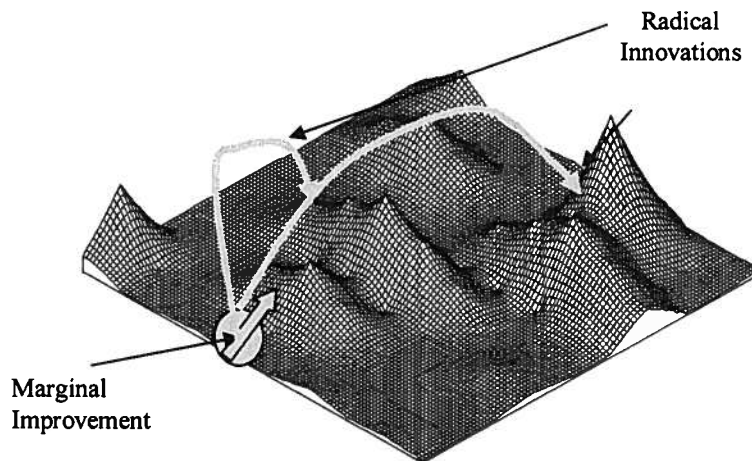


Figure 2 Multidimensional Performance Landscape

This means that sufficiently complex activity systems with a diversity of behaviour have the capacity to go beyond the marginal improvements of a smooth optimised terrain. The system can explore more radically in a multidimensional “rough” performance landscape (Fig. 2), and therefore produce radical solutions. Moving within established routines means that a population is merely ‘hill-climbing’ the smoother part of the terrain. This will give marginal improvements only. In other words, this means that in the long term, evolution selects for populations with the ability to learn rather than for populations with optimal, but fixed behaviour (Allen, 2001b). For radical change this happens as the community explores their imaginary object and change this as they learn. In that sense the whole activity network becomes a co-evolving learning network of actors and their changing human artefacts.

Table 1 – complex activity networks			
Marginal improvements		Radical improvements	
Frozen object	Routines of established practices	Emerging object	Exploration and challenging established practices

1.4 The object formation process

A sustainable firm needs to have the capacity to continuously adapt to changes in its environment. This calls for small innovative steps through questioning and adjusting its competences and practices. When such continuous attempts have not been followed more radical efforts are needed. It is in these cases action research processes, where a work group supported by researchers collectively intervene into present practices, and try to make sense of a problem or a challenge is useful. This community then formulates new solutions, tests these out in practice, reflects on the applicability and eventually repeats the process all over again. This is a cyclic object formation process. The object in this sense can be seen as the visual target or focus collectively being created by the community of a particular activity. An object is therefore not seen as the same as objectives, which are rigidly independent of individual conceptions, personal bias, thoughts and feelings. The object on the other hand is a vision.

That is, although people bring with them their knowledge of the past in the process, they also need to co-develop a vision of the future. This they do through exploring into rougher and more unfamiliar terrain. Through such exercises an organisation can learn to continuously cope with the uncertainty of the future. Therefore central to collective activities is the object formation the community of the particular activity is engaged in. This emerging property becomes clearer and more meaningful (Lektorsky, 1984) as people co-explore their work activity. In that respect Hasu and Engeström (2000) make the following distinction that individuals have goals for their actions, whilst the object gives a collective purpose and direction to an activity.

Table 2 – Objective versus object	
Objectives	Object
• Rigidly independent of individual concepts and bias	• Becomes more meaningful as people interact in the exploration of their work activity
• Gives directions for routine practices only	• An emerging vision, collectively being developed through the life-span of an activity • Gives direction for development and change

1.5 Self-organising of diversity, exploration and learning for radical change

When people interact in complex networks of ignorance, ambiguity, and conflict, and are questioning old practices and make suggestions for change, the capacity of the network evolves. This is a continuous self-organisation beyond individual control. When these fluctuating behaviours go beyond the critical size of the resilience of the network the process is irreversible (Prigogine, 1976). These changes therefore become more permanent.

Because people have limited knowledge of what lies ahead and cannot therefore know precisely what actions to take at present, then learning, although never perfect, becomes important. This is where the “exploratory” behaviour among individuals is essential in order for the system to adapt, change and evolve in response to whatever selective forces are placed upon the system (Allen. 2001b) from the environment. With a work-community’s adaptation to its environment it becomes part of that environment. This linkage of micro and macro forces brings the work-community into potentially influencing the larger activity of the environment.

At the individual level Vygotsky (1978, 1934) calls the distance between a child’s actual developmental level (the independent problem solving) and the level that can be reached under adult guidance or in collaboration with more capable peers, the zone of proximal development. Similarly, we can use this principle to increase learning and knowledge by letting people work together to solve a mutual problem. When people bring together their diversity of experience and understanding of a mutual problem this can expand on the learning they could have done alone.

Engeström (1987, 1999) brings Vygotsky’s principles further in what he refers to as ‘expansive learning’. This is about partial destruction of old perspectives and practices and about individual and collective transformation. The collective transformation can be horizontally between peers or vertically like between manager and subordinate. Or seen from a more complex perspective, the co-learning may simultaneously fluctuate in many directions between affected individuals and groups of an activity. Expansive learning therefore becomes the tool in a critical object formation process. The work-community has then gone beyond adapting and applying existing knowledge. Essential for more radical change is therefore the evolutionary capacity of knowing how to change rather than applying existing knowledge only (Blackler, 1993). A diversity of perspectives, experiences and learning has therefore self-organised beyond the resilience of old and embedded routine practices. The distinction between adaptive learning of existing knowledge and expansive learning is similar to the more popularly applied distinction between ‘single loop learning’ and ‘double loop learning’ (Argyris and Schön, 1974, 1978).

Table 3 – Self-organizing, exploration and learning	
Average behaviour of elements/people	Complex network of human actors
• Self-organising as response to external changes • No learning • Cannot respond to rapid and significant change	• Self-organising of diversity of experiences and behaviour enhances exploration, learning and radical change as response to external change • May influences external change

1.6 Object and Communication interaction as a toolset for collaborative work

The linking of individuals to an activity depends on both personal and community choices as the case will demonstrate. In the case therefore the developing processes of expansive learning firstly engage the employees in collective object formation. This is the creation of awareness for the need for communication skills. At the next stage this awareness is used by the individuals as a motivating tool to approach the new object of improving communication skills. In that sense an object can occupy two different roles. First it is an object and then it functions as a tool (Foot, 2002). In other words speech is not only working as a medium of action but is also the object of that action (Foucault. 1972). As the interactions between the

individuals in the case proceed, common social rules are developing that facilitate more intimate and progressive interaction. The collective social rules can thus influence the discourse systems or politeness strategies to be applied for collaboration.

Improving communication skills means that some sort of collective strategies for communication must be developed. These skills are governed by the dynamics of different discourse system interaction. The way we speak or the way our discourse systems work is governed by the way individuals or groups value or assume relationships. This occurs when an imposition is put upon them in terms of *power differences* and *distance between self and the other* (Scollon and Scollon, 1983). *Distance* is here a measure of closeness of relationship. Communication between people of different groups is inter-cultural as it is a boundary interface of differences in values and beliefs.

Scollon and Scollon (1983) define discourse patterns as *politeness systems*. People choose different strategies for communicative interaction. That is a *solidarity politeness strategy* would assume both minimal power difference and minimal distance between speakers. A *deference politeness strategy* on the other hand assumes minimal power difference but high distance between speakers. And thirdly, a *hierarchical politeness strategy* (Scollon and Wong Scollon, 2001) is experienced where power difference is recognized and where distance between people might either be close as between family members and people working close together, or distant as between strangers, people of different professional disciplines, people of different cultural groups, or more generally between people taking different positions and pursuing different interests.

Table 4 – Strategies for communication		
Solidarity politeness system	Deference politeness system	Hierarchical politeness system
- Minimal power difference - Minimal distance	- Minimal power difference - High distance	- Power difference - High distance, or - Minimal distance

Different politeness systems come together and challenge each other in the multiplicity that is the making of a group's social rules. The way these rules are applied affect how actors are dynamically connected in their activity. Foucault (1972) calls the rules that make the appearance of objects of discourse, or in other words that facilitate objects of discourse, rules of formation. This is not so much about the language used but rather what matters is the practice used in the formation of objects as people speak. Language or linguistic skills can therefore be seen in terms of individual subjects ability to flexibly choose politeness strategies across boundaries within the activity network. In that sense the discourse between actors in the activity system self-organises its control of what can be said. This is essential for the outcome in the collective object formation process of an activity.

1.7 Interventions for change

A reality of constructive ambiguity, as the challenge of continuously tolerating and negotiating a combination of shared interests and own interests, lie ahead in organisational change operations. In this conversational terrain the speaker can be dominant, neutral or subservient in relation to the listener. Similarly the listener may

be dominant, neutral or subservient in relation to the speaker. This may happen as they are exchanging roles as speaker and listener during a conversation. Power position could change according to the context and development of the conversation, and according to strength of arguments or ideas. This could both positively and negatively affect an ongoing conversation, and inhibit a conversation to get started and thus affect work collaboration.

Engaging into discussions on controversial issues is difficult. The type of relationship between the participants will determine which politeness strategies they are choosing. This will have an effect on the efficiency and outcome of the discourse. Differences in discourse systems are the main causes of miscommunication (Barrat et al, 1995, Scollon and Scollon, 1983). Essential is therefore what does the listener assume are the intentions of the speaker? And what does the speaker assume can convince the listener? Thus what strategies (Table 5) are they as individuals choosing based on their assumptions? What heterogeneity of discourse strategies are coming together in a work activity. How does this 'heteroglossia' (Bakhtin, 1981) of discourse systems intersect with each other in different ways?

Table 5 – Effects of interaction of communication strategies				
Contested terrain of distance and power differences		Listener assumes application of		
		Solidarity politeness system	Deference politeness system	Hierarchical politeness system
Speaker assumes application of	Solidarity politeness system	Dialogue	Contradictive assumptions leading to miscommunication	Monologue
	Deference politeness system	Contradictive assumptions leading to miscommunication	Dialogue	Contradictive assumptions leading to miscommunication
	Hierarchical politeness system	Monologue	Monologue	Monologue

Of major concern is therefore how discourse/politeness strategies change and how prone they are to intervention for change? How static are individuals choice of discourse strategy? How culturally embedded and embrained are these strategies amongst individuals and within communities as such? How do eventually distance and power difference change during human interaction? How does communication move from dialogue to monologue to silence and vice versa?

2. The case history and relationships

The philosophy of the larger contractors building offshore platforms for the Norwegian shelf was to be the builders of the platforms and not be the engineers. The idea was rather to try and utilise the suppliers of the best expertise available in Norway and from abroad for the projects. Thus they would concentrate on keeping

their own people in key positions only, with engineering expertise supplied by subcontractors of the larger community of expertise.

The company, here called Engineering Design (ED), was founded and developed as an opportunistic response to the rocketing demand for engineering services in the offshore engineering industries in the 1970s. The ED's founders had all been colleagues in a company making mechanical equipment. One of them took on the job as Managing Director (MD) for ED. The experience from the mechanical equipment company was their individual entrance into the mechanical disciplines in the large offshore projects. Also having been involved in the oil-boom industry from its start in Norway they all acquired a sound practical understanding of what the business was about. This early involvement made it possible for them to build good relationships within the networks of key personnel in one of the large contractor companies and co-develop their competencies together with them. These competencies were on practical engineering issues.

3. Adaptation to a new environment, the management of change and the creation of a future

The era of the large concrete platforms with its huge project organisations were coming to an end. Those companies which had been innovative and started to specialise in sub-sea offshore technology would survive only. The large contractor company had not explored into that technological landscape and neither had its subcontractor, ED.

With less orders coming in, the whole atmosphere in the company became unpleasant. There was a lot of discontent with the frustrated MD. Employees got annoyed with the way he started treating people and his lack of engagement in facing the new realities. They started to distrust him, as they never knew anymore what he was up to. He was well adapted to the previous reality of an environment where demand had always been greater than supply. Therefore not much effort had been needed to put into marketing. After a while the MD took seriously ill. One of the authors, who at the time was engaged in one of the large projects at the client's premises, therefore had to come back and take care of the management of strategy, marketing and human resources. Marketing research had never been done in ED. Keeping the company going had been based on the MD and key ED personnel nurturing their networks within their main customer company, the contractor.

However, just before the MD took ill a management consultancy had asked if they could present themselves to ED. They wanted to make inquiries into the organisation and suggest actions for changes if needed. They managed to sell themselves into ED. This was followed by all 25 employees being given questionnaires to answer twice with an elapsed time between them of 6 months.

3.1 Questionnaire Results

The questionnaire questions were quantitative. To measure employee perceptions of the company reality, they could respond to each question according to a Likert scale; Very good (= 10), Good (= 8), Fair (= 6), Poor (= 4), and Very poor (= 2). At the bottom of the questionnaire there was a space where the respondent was encouraged to comment on her/his choices. The difference in opinion between the two surveys was insignificant, apart from the fact that whether *The workplace is secure* was on average for the group 9 at the first survey and had dropped down to 6.6

in the second survey. In general there were no enthusiastic agreements regarding positive conditions in the firm. *Awareness of responsibility and authority, qualified personnel being permitted to make decisions, people being supported when they presented new ideas, the intentions of the company being known to everyone, the office milieu being motivating, personal and professional development being good,* were on average for the interview group as a whole all given medium scores only (between 5 and 6).

Low scores (between 2 and 4) were given to questions on; *communication in the company, information on daily matters, information on company situation, management decisions clear, quality of decisions made by management.* According to the additional comments made the following conclusion can be made: *Communication between the MD and individual employees was little and did not function well, employees had started to distrust the MD both in terms of intentions and promises, internal information in general and information regarding the company's situation was unsatisfactory to the employees, decisions made by management were not clear and people did talk negatively about decisions made, and finally internal routines could have been much better.*

These were all unpleasant revelations to the MD and were probably not good for his present state of mind. He immediately decided not to continue to cooperate with the management consultancy. By doing so he actually disconnected himself from the perspectives of the consultancy community. This limited the potential of excess knowledge capacity in terms of concepts and strategies of a larger activity network for change (Fig. 1) entering and influencing the development of the firm. There was nothing absolute and final about the questionnaire results. The management consultancy had intended to use them as basis for interactive work within ED. One of the writers, however, used the results as a basis for further inquiry.

3.2 Personal Interviews and the sharing of perspectives

One of the authors had on his brief social visits to ED been approached by other employees about the general dissatisfaction in the company. Substantiated by the results of the two surveys the author thus wanted to understand the causes of discontent and to understand the magnitude of the problem. That is how could this be changed positively? How could the organisation as a whole fit the new realities of the changing environment? This he discussed with two other managers. It was agreed that he conducted in-depth personal interviews with 25 employees as the qualitative addition to the previous survey. Managers were not interviewed. The personal interviews were an attempt to engage all the actors of the firm into a dialogue for change. It was an attempt to try and open up individual and group boundaries. This had already been started off by involving the employees in answering the questionnaires. The general results of these were presented to them. It can be argued that these results had influence on interviewee opinions. That is the presentation of questionnaire results had created a greater and more shared awareness of the company situation. These two steps in bringing forward employees opinions were showing them respect.

General company demographic differences could be represented by 4 main groups of people. Firstly, the old team of former shareholders and two of the managers. They had all worked together at the mechanical equipment manufacturer and been together since the founding of ED. Their opinion pool was closely linked to

what they had been good at in the past, as was frequently emphasized in meetings with clients. Secondly, the university graduates could be argued to be influenced by their strong theoretical engineering practices and their links to members of their external professional society. Thirdly, the younger college graduates can be argued to be influenced by more routine engineering practices. Fourthly, the administrative staff was influenced by their routine work and non academic background. Within and between these groups, it could be argued that people would share some values, beliefs and experiences, be ignorant to other and be indifferent or opposed to yet other values, beliefs and experiences. This arena became the starting off position of procedures for decreasing power differences and distance between peers and between managers and non managerial employees. The interviewer tried to be a respectful listener and only intervene to ask for elaboration.

Employees were dispersed over several external projects. Only a few were physically working at the home base. The company as an interacting community could therefore not be observed in its daily routines. This limited the basis for understanding the problems of the firm. With the present disconnected perspectives and practices it was difficult to really know what to do in approaching a new environment that was only just emerging for the company in its vague horizon. Therefore it was necessary to explore into the unknown and try by initiating change to see how this would affect the organisation.

Since the employees were dispersed over external projects it was necessary to bring them together into a simulated work activity. To initiate change there was hence a need for some collective sharing of the diversity of perspectives. The making of relevant perspectives available was necessary in order to be able to co-analyse and arrive at a collective sense making of the situation of the company. This could then serve as a basis for a collective evolutionary change approach towards the future (Fig. 3).

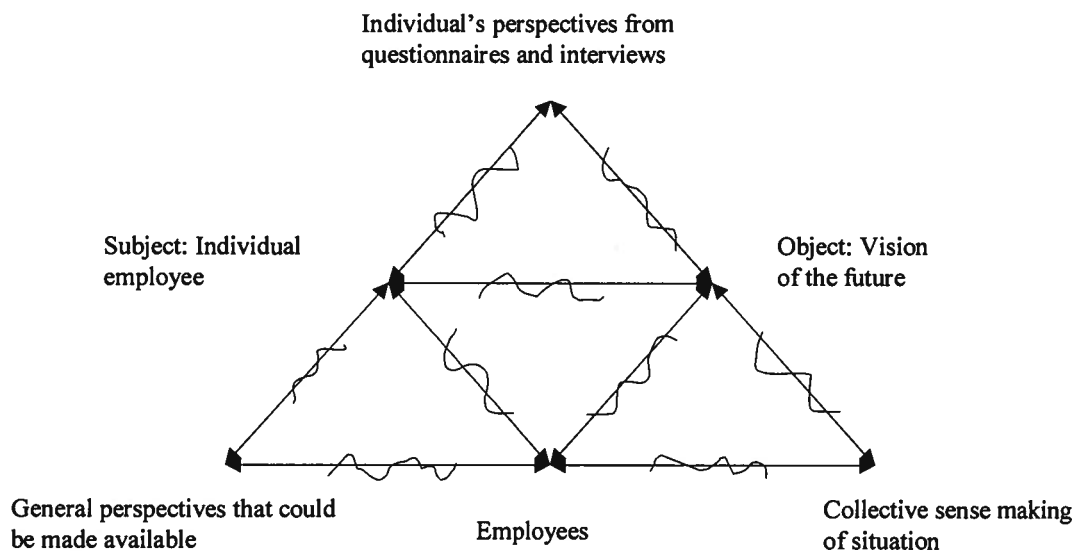


Figure 3 Activity of Vision Creation

Figure 3 presents an activity of creating a new collective vision of the future for the firm. Individual's perspectives from questionnaires and interviews were coded, and made general. These perspectives were made available and served as mediating themes of discussions between individual employees in work simulations seminars (subchapter 3.3). The collective sense making developing from these discussions could thus mediate between the community of employees and their emerging vision of the future. The object, vision of the future, is likely to have simultaneously been influenced by the employee's more camouflaged perspectives of personal interests.

A couple of employees belonging to the less powerful category in terms of expertise were initially reluctant to participate in an open-ended interview. The situation was obviously a difficult one for these employees to let themselves into. They were likely to have been affected by strong assumptions of both power difference and distance towards the interviewer. This made them assume a Hierarchical Politeness Strategy. Thus they became reluctant to enter into open dialogue. They had to be convinced by the writer that personal opinions given would be kept a secret between the interviewee and the interviewer. They were told that the interview was their chance to have a voice in improving working conditions and affecting the future of the firm. Certainly answering the previous questionnaire had been an anonymous act. Answering in interviews, however, were about talking to the new boss who they did not really know how would react to critical opinions. However, it was emphasised again that general conclusions from all the interviews would be presented openly within the firm only as 'general perspectives available' (Fig. 3). Any personal wishes or complaints would be treated confidentially. Measures would be taken by the interviewer to try and improve personal conditions. This was presented as the incentive for participation.

The interviews gave the results as follows. In general people working in external projects were disappointed about the lack of information from the home base. They felt that there was no interest by the MD for how they were doing in their projects and what they were doing. Those working at home-base in general found collaboration very good laterally, but they found collaboration with the MD and one of the former five shareholders very difficult. They found the MD unapproachable for conversations.

There were complaints about lack of internal routines and structure at the home base. It could be argued that this had suffered due to the fact that some people had key positions at home base but were 100% occupied in external project positions. Thus their expertise was neither transferred to people at home base nor to ED employees on other external projects. This problem was of general concern for the interviewees. Also the lack of a clear relationship between having to be responsible for something and having authority to make decisions in that position was emphasised. Both technical expertise and organisational expertise remained with employees outside the physical boundaries of the firm.

In general people were satisfied with their own performance at work but they also found that no standards had been set for performance within the firm. There was no feedback from management on people's performance. The younger college graduates all expressed that they were falling behind professionally. This frustration was due to the fact they were not given the opportunity to practice theoretical calculations. Therefore they were disabled from tackling independent and complete design tasks. They saw themselves more and more rather as draughts-men than engineers. They were frustrated by the fact that they were not developing their

theoretical tools and contributing more fully within their work communities (Fig. 1). Therefore they were worried about not being attractive to clients in the future.

These revelations were clear facts about the anxieties within the company. The question of whether existing practices needed to be changed for the company to be sustainable in the future had never been on the agenda. Things had been successful far too long. Thus management and employees alike had never had to learn to make significant changes to themselves as routines of continuous improvement to be able to face new challenges.

3.3 The Potential for expansive learning through Courses and Seminars

Several of the interviewees were concerned about their lack of theoretical competence. The writer/manager therefore initiated an internally made steel strength calculation course. The course was designed and taught by one of the university graduates and an experienced college graduate. This was a teambuilding effort in itself. The college graduates more experienced with strength calculations were sent to more advanced external courses. As a response to the lack of requirements and expectations put on employees and the lack of internal routines, company relevant quality procedures were also prepared by the writer/manager.

To follow up the more behavioural concerns by the interviewees in the surveys and the personal interviews, the writer ran three teambuilding seminars. This became a simulation substitute for observing employees ability to interact as a community. It was the third major step in trying to open up individual and group boundaries and develop common politeness strategies.

The seminars were on the following themes:

1. *'Information/Communication'*,
2. *'Customer/Supplier Relations and Service/Attitudes'*,
3. *'Positive and Negative Response'*.

The idea was that the first seminar was to explore the importance of relevant information and the practice of good communication. This awareness creation was then to serve as a "tool" for the activity of the next seminar. Here the employees would be practicing basic communication skills needed in discussing attitudes towards customers and colleagues. The third and more difficult step was to try and practice dialogue in a situation, which would involve both positive and negative feedback between speakers and listeners. The use of language (Fig. 1) therefore became the individual participant's main tool in these activities. These seminars could hence facilitate in developing effective language for daily collective work situations. The idea was that the practice of collective effort could therefore assist in moving the firm into the future.

The seminar participants were divided into groups of four or five. The group composition was different each time. The conversations in the groups were not recorded, only observed as an activity. It was, however, a serious practical attempt for change. The fact that this was only intended as a practical exercise for change and not research as such meant that the writer only took upon him self the task of supervising several groups at the same time. This meant he could only make notes of clear changes to inter-personal behaviour. Some groups took off more easily into discussions than others. And it seemed that participants became more active in the discussions in the later seminars than they had been in the first one. It was obvious

that as people started to trust each other and their own ability, they became closer and more open in their interactions. In this way the groups were making collective sense of their evolving tasks (Fig. 3). The conclusions from each group were then presented on the white-board in plenary sessions and discussed. During the discussions people had created some awareness amongst themselves on the specific topic of the day. Bullet-points of some views from the relevant literature were then presented on a screen. This was followed by further discussions and conclusions.

The seminars show a procedure for intensive communication training where the actors could not just withdraw from the conversation. They were encouraged by the writer and peers to participate. This meant that they had to try and sort out the power differences of dominant speech and distance caused by contradictory perspectives. They managed gradually to decrease power differences and distance between themselves. And they were clearly applying Solidarity Politeness Strategies at a later stage.

One essential problem was that the MD never participated at these collective learning sessions. The MD's disconnection from the seminar community (Fig. 1) certainly did not send very positive signals into the organisation as a whole. This was commented on by participants at the seminars. It was made worse by the fact that he was the one that had been criticised for being difficult to communicate with. The participants argued that he could have learnt from the exercises. This created an even more distinct distance between him and the employees. The MD was, however, in a position where he could choose not to be approachable. He was in power to withdraw and keep distance. He was therefore in practice leaning towards a Hierarchical Politeness Strategy of power difference and distance. This potential for miscommunication materialised as no communication.

3.4 The first seminar – Information and communication

The first seminar managed to conclude on issues regarding information and communication practice. The participants put this into a framework of what people should expect of each other in general and what employees would expect from the management specifically. The seminar community emphasised the importance of taking initiative to gather information as well as trying to learn about others' needs for information. Also it was highlighted that management should continuously keep employees informed in order for these to make good decisions in their individual work. And finally communication had to be a two way exercise. It was important to listen and at the same time making sure that one's message had been understood as intended. Equally important was to be brave enough to ask for elaboration if things had not been fully understood.

These were important conclusive steps made by the participants. It illustrated the duality of dialogue. It meant that you are at the same time a receiver and a giver of information. Managing dialogue for exchange of information therefore became a learning process of challenging each others views at the same time as adding to them. This process simultaneously assisted them in forming a common object that gave them a purpose to produce conclusions that could be presented to peers of other groups for critical assessment. Because the outcome was not clear to them at the start, it became innovative to them.

In hindsight this meant the seminar participants had understood that they all had to avoid using Hierarchical Politeness Strategies that at best could result in monologue only (Table 5). It meant that they had understood the principle of mutual

respect and sameness. In other words that there must be a collective encouragement of speaker and listener interaction by using the same politeness strategy as tools for communicative interaction (Fig. 1). This means the speaker and listener must either both apply Solidarity Politeness Strategies or both apply Deference Politeness Strategies (Table 5).

3.5 The second seminar - Customer/supplier relationships and service/attitude

The second seminar started off by revisiting what had been concluded on the previous seminar on information and communication. Secondly, to start off the discussions and to give the participants a feeling of being of importance to the company they were asked whether they were aware of any company vision. Therefore any visionary ideas could be helpful in bringing the company forward.

The conclusions arrived at by the groups on customer and supplier relationships and service/attitude were for them a move beyond an entirely technical focus. It was a cultural issue of viewing peers as customers who had needs that should be considered. This included relationship development and anticipation of the needs of others affected by one's work. It was therefore concluded that good and effective relationships were important between team members for sharing of understanding in a project. Also that the issue of relationship development was something each participant had to consciously and constantly work at in any situation. The acknowledgements were the realisation that relationships are difficult to maintain and that they depend on the context of the activity. In other words actors are initially likely to choose to apply different politeness strategies in different situations.

No clear conclusion of a vision was arrived at. That is, employees made general perspectives available only (Fig. 3). What, however, the participants made clear was that they saw a lack of vision and a direction for the company. Also they could not see how they could influence the vision due to the lack of vertical dialogue in the firm. That is, since they could not talk to the MD they were not encouraged to assist in developing a collective sense making (Fig. 3). They argued that any collective sense making by them would not be used to produce a company wide vision of the future. In other words there was no incentive to co-develop an object that could give direction to an activity they saw as inhibited by the lack of potential MD involvement.

3.6 The third seminar – Positive and negative response and the creation of innovative solutions

In the third seminar, which was on 'positive and negative response' the groups would this time simulate a role-play based on a given situation in a fictive offshore project. Each group had two observers who would independently note down the behaviour of the participants. These notes were not retrieved by the writer as they were meant as internal aids to each group. The notes assisted the group in making final conclusions only. Prior to the exercise the actors and observers were all given some very general rules of conduct regarding positive and negative response. There was a time limit to the role-play exercise itself. Subsequently each group had to sit down with their respective observers and discuss and conclude on their experiences, and what they could learn from the exercise in particular. Like in the previous seminars the groups presented their conclusions in a plenary session with further discussions.

The idea was to let people explore and practice the idea of good communication in a situation where some of the characters had done "stupid" things, others had been ignorant, and some again were hiding things to protect others. The history up to the present situation became the foundation for how to proceed. The participants had to negotiate and choose creative solutions to the existing problems someone had brought the fictive project into.

The different role players were initially given specific information that was not given to the others. Thus individually people started off with different understanding of the situation. The observers had all the information presented to each individual. In the roles each participant was therefore put into a situation they would not necessarily have chosen to let themselves into in real life. It became an exercise in learning to have some empathy with people who unfortunately had led themselves and others into stupid situations. That is people also had to play characters that could be very different to their own in terms of integrity, values and beliefs.

Conclusively the participants found this exercise the most challenging and interesting one of the three seminars. They concluded that they had learnt that it was important to approach a common problem collectively and that democratic dialogue was necessary in this process.

The group participants had previously been gradually developing their linguistic or communication skills. The context of the role play was, however, not one of openness and equal status. It was clearly one of intercultural communication as little was shared and some facts were hidden, as among strangers. It therefore became an exercise for communicative interaction in unfamiliar situations. In this new context of controversial issues some were ignorant to that something was hidden but they knew something had gone wrong. Based on their successful learning in previous seminars they started off in a rather friendly and open manner. Applying Solidarity Politeness Strategies therefore became a natural choice. They seemed to take initiative in engaging into conversation. Those who had done stupid things and were trying to hide something is likely to have assumed others had power over them and also that there was distance. They seemed not to take any initiative to talk. When questioned they gave short answers only. It can be argued that they started off applying Hierarchical Politeness Strategies. A third group knew something was wrong and that something was deliberately hidden. They therefore took a more careful and formal approach. It can be argued that they chose to apply Deference Politeness Strategies assuming distance between people but that power differences were low.

This contested terrain of distance and power differences (Table 5) inhibited the initial attempts of progressive dialogue. The circumstances for engaging into dialogue were hence not ideal but challenging. At the same time the situation became one of great tension between the individuals (curly lines, Fig. 1). People, who had become closer to each other in previous seminars, suddenly became distant to each other. Simultaneously they were subject to power differences enforced by hierarchical, moral and ethical positions in the role play. However, during the course of discourse interaction it could be observed that as people started to agree on something they were able to move on with their activity. But the activity pulsed. When some controversial argument was introduced by a speaker this sudden shift of power sometimes made the listener withdraw from the conversation. The situation was usually saved by a third person intervening and setting the discussion back on track again. Gradually people built up more and more what they could share. Distances within the group decreased. People managed to engage into a conversational form that became more tolerant to a diversity of meaning.

The advantage of collective sense-making became clearer to the role players. Shared interests started to occupy the space of previous multiple personal interests. This changed the language used in developing the object. The power differences became less significant as the object became stronger. That is the object became empowered during the collective sense-making. Therefore after a short while Deference Strategies seemed to be dominating in the discussions. As the participants started to open up, admit their mistakes, and share opinions they were able to search out more collective solutions. Then they engaged more in Solidarity Strategies for communication. This was a continuous changing of social rules, which these strategies were part of. It was also a continuous change of interaction patterns and conversational turns between group members.

There was no standard solution to this role play. A predetermined and standard solution based on old experiences would most likely have inhibited a relevant solution to a very special case. The equal information given to each group was interpreted differently by each group due to their different initial ignorance. This again actually produced different initial situations. Furthermore, each group adapted to a development influenced by the different and continuously changing forces of arguments self-organising during the discussions. Each group therefore departed at his point of bifurcation down very different paths. This produced as many different final outcomes and experiences as there were groups. This illustrates well that the learning within each group was never perfect but subject to trial and error and therefore producing different results for each group. The different initial diversities within each group produced different learning patterns and therefore had different synergy effects. Through their challenges and critical discussions each group gradually arrived at innovative solutions that were tailor-made by the group to fit their perception of the developing situation.

One learning from this exercise is to try and not follow any predetermined path. Rather through open discussions people should encourage collective solutions everyone can identify with and be able to implement in practice. Those who have nothing to hide must start the conversation. They must show some respectful distance at the same time as they show empathy by being patient listeners.

3.7 Strategy and collective object formation and network marketing and contradictions between old routines and innovation

The strategy and business plans were collaboratively made by the MD, one of the previous shareholders and the writer/manager. The writer did the analytical part of the plans. These plans were realistic in terms of seeing some of the traditional jobs where the company had been involved in the offshore industry as dead. Certain areas within the mechanical engineering disciplines were seen as present cash-cows. There were new potentials in the land-based industries with high profits. A problem, however, was that the company had good contacts in the traditional offshore industry mainly, but not so in the land-based industries on a larger scale.

To bring the strategies down from the abstract of a vision to the practical level, the question was how the employees could make a contribution to the implementation of the strategies in a collective way. Therefore prior to the first seminar employees were sent forms asking them for suggestions regarding companies/persons the company could contact for new project contracts. This collective marketing was an attempt in trying to engage people into helping creating their own future by choosing customers. The idea was that inclusiveness would make

employees feel that they were insiders in the organisation and not just observers without any influence on their own future.

There was no experience within the new sub-sea technologies in the company. However, the suggestions made by a couple of the young engineers led to contacts made with the two main contractors on sub-sea installations. After another six months each of these new clients engaged one well qualified young ED engineer each in their projects as support staff.

Simultaneously, another collaborative marketing effort was attempted through regular marketing meetings. The idea was to split the approaching of the potential customers between the managers. However, due to the existing work burden on other fronts by these managers they were not able to put much effort into the daily promotional activities. The MD would only contact people he already knew in the traditional client market. He thus remained in his smooth performance landscape of marginal improvements (Fig. 2). Searches into the rougher and unfamiliar landscape were therefore left to the new manager. Marketing efforts therefore became a contradiction between old routines nurturing old acquaintances and innovative searches into unfamiliar terrain.

The intervention for change is illustrated in figure 4 as a typical action research process. This process was a complex system of interacting elements of people's diverse perceptions and skills, learning, and strategies for promoting company expertise according to perceived market demands.

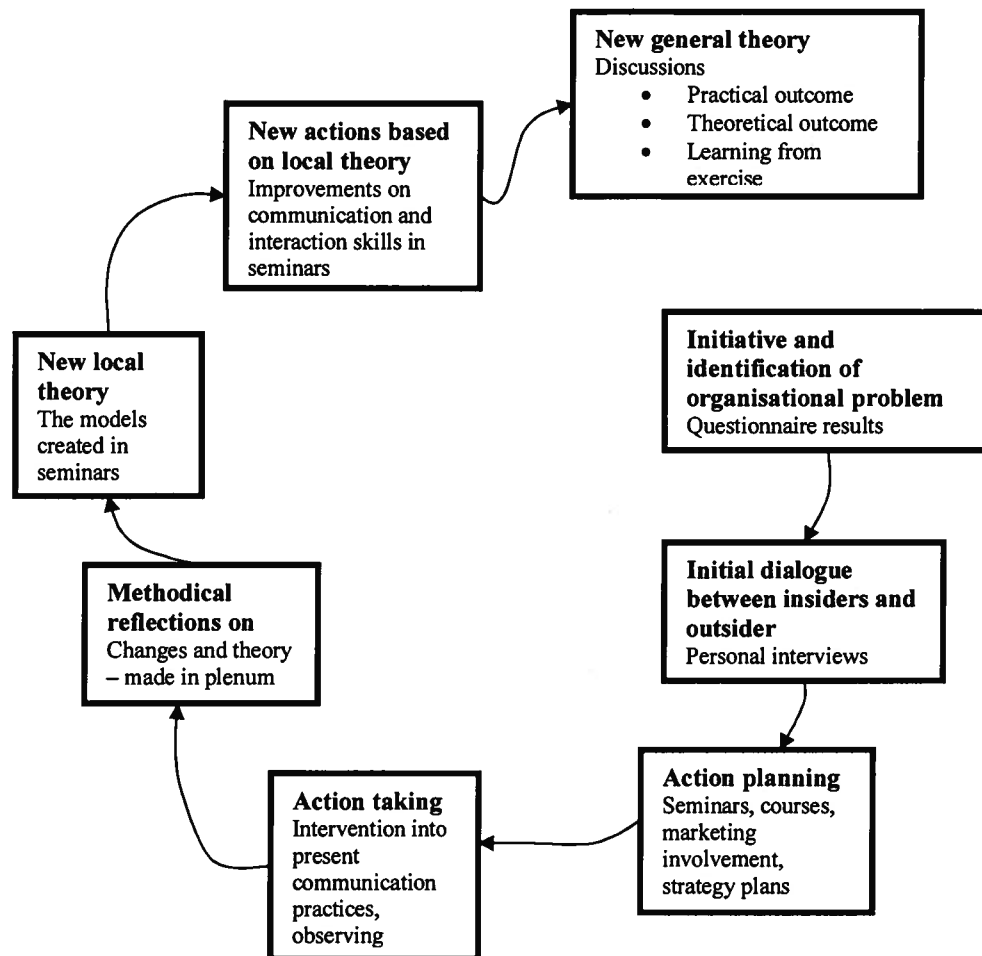


Figure 4 Action Research Cycle as Expansive Learning

4. Discussions and Generation of Theory

4.1 Practical Outcome of seminars, courses, quality procedures, strategy, marketing and emergent properties

4.1.1 Communicative interactions, reorganising discourse systems, learning and change

At the seminars the participants could be observed to start off being uncertain on how to engage into communication. In retrospect one could argue that different strategies collided and made communication difficult. Most of the participants lacked experience of constructive discussions. Several of them were also little known to each other. At the same time as each group had to sort out their communication strategies within a developing social rule system. They had to take up different responsibilities in the discussions in trying to develop a collective solution. This complex activity network of perspectives, ignorance, opinions, language, rules and responsibilities influenced the outcome.

The actions in the seminars were interventions into the individual's practices and discourse systems. Employees reflected on their theories/mental models for change in the seminars. They applied these, tested them out and created new local theories for change. These models and experiences were shared in plenary sessions and elaborated on. The seminars thereby became iterative processes for learning and change. In that way the collaborative work facilitated the group members to explore more radically into a multidimensional "rough" performance landscape (Fig. 2) of diversity of opinion and experiences than had they worked alone. The outcome of these iterative processes was unpredictable but at least it was a collaborate result participants could take ownership to.

4.1.2 Inhibitors for communication, learning, change and innovation

The seminars created a strong group identity among the participants. This sadly also increased the distance to the MD. The distance was reinforced by the fact that the MD was well connected to the group of former owners/mates who all stuck to their familiar past related expertise. Therefore it can be argued they were not able to create enough disturbances regarding the future in their inner circle, which was necessary for innovation and change (Rose-Anderssen et al, 2005). As they had co-developed closely in the offshore industry right from the beginning they became part of something, which became established technologies and practices. Their ideas were therefore embedded in traditions. Their well established disciplines of thought hence produced doctrines of what could be talked about (Foucault, 1972) amongst them.

Thus the social rules developed over the years within that group can be argued to have been that solidly embedded in tradition and freezing an object that otherwise could have facilitated new actions for change. The company had merely been "hill climbing" with its average and non-explorative behaviour in a smooth and familiar landscape (Fig. 2) and down a predetermined single trajectory. The management of the company as such therefore did not have sufficient diversity, as a reflection of the environment, to adapt to the larger, rougher and more rapidly changing landscape of the new environment.

4.1.3 Direct and secondary outcome of interventions

In retrospect it can be argued that the outcome of all the change efforts could have been more beneficial if they had been done long before the drastic change in the market conditions. However, the official prognosis for the industry gave the impression that there were considerable oil- and gas-fields on the Norwegian shelf to be developed in the future. A small supplier like ED did not have the resources to contest such prognosis and therefore in good time gradually try and adapt to a changing reality. As the company went into rapid decline the intentional 'direct outcome' of the internal and external training courses as an investment into ED's future was not achieved. Similarly, intentional 'direct outcome' of the seminars to improve communication skills and sharing of information in the company was never achieved in terms of becoming established routines of the company. The 'secondary outcome' of these sessions was that individual engineers hopefully brought with them these experiences as insights and tools into their new jobs.

4.2 Theoretical outcome

The exchange of essential information in a work community depends on community members' ability to develop and sustain the conversation. This means they must be able to make important and difficult information clearer as they talk. But every turn in the conversation may both facilitate and inhibit a dialogue.

Collective object formation for an activity is always difficult. Firstly all the activity elements need to be dynamically connected in terms of the subject, her/his tools, the social rules, the community of the activity, the division of labour and the object itself (Fig. 1). This means they must have the capacity to influence and be influenced by each other. These are tension filled processes where power may shift between actors. Distance between people decreases and increases according to shared and controversial perspectives respectively. As people try and interact through conversation they may share more and start establishing group identity and cultural traits. Each new context means a different merger of activity elements and development.

The object of creating awareness of improving communication skills becomes a tool in the activity with an object to improve communication skills. With improved communication skills as a tool this helps in the ongoing discussions. Simultaneously the participants are approaching an object of even greater awareness of the advantage of improved communication skills. The whole exercise therefore becomes an iterative learning process where elements alternate between being a tool and an object on a continuous basis. As a more general hypothesis to use in further research, each of the human artefacts; object, tool, division of labour, and social rules can change between being a tool and an object in the development of an activity.

This is an important concept as it not only demonstrates the fuzzy complexity of work activities with all their hidden properties and connections. More importantly such a concept is about trying to seek out how to take advantage of the duality of tools and objects in relation to other elements as interdependent elements in the change process. The change of one element with the tensions thus created might require changing other elements. The first step for intentional change is therefore is the facilitation of a co-developing space for gradual sharing of collective sense making. In this space the essential tool for developing collective sense making is the capacity for developing democratic dialogue.

Different communities or groups starting off with equal initial information will end up producing different outcomes. As the individual and collective transformation proceeds, each group solves their tasks based on different previous and present experiences and challenges. Each group's individual negotiations inform a self-organising evolution down different paths, and producing different outcomes. This reinforces the principle that there is never one standard solution to solving a problem. It means that as long as the community is able to co-develop beyond the limitations of the present system it is an improvement that should be appreciated as an outcome of mutual interest.

Table 6 – Developing communication strategies				
Developing a space of gradual sharing of collective sense-making		Listener initially assumes application of		
		Solidarity politeness system	Deference politeness system	Hierarchical politeness system
Speaker initially assumes application of	Solidarity politeness system	Dialogue	Contradictive assumptions leading to miscommunication	Monologue
	Deference politeness system	Contradictive assumptions leading to miscommunication	Dialogue	Contradictive assumptions leading to miscommunication
	Hierarchical politeness system	Monologue	Monologue	Monologue

The clue lies in the community's ability to move into using politeness strategies that are acceptable to all. Where creativity and innovation is the object of the activity, strategies that minimizes power differences and distance should be chosen. This would facilitate language that is open to free sharing of ideas and information. In other words Hierarchical Politeness Strategies should be avoided. People would naturally by trying to keeping power differences low apply Deference Politeness Strategies. As they become more familiar with each other Solidarity Politeness Strategies will normally develop and enhance exchange of ideas (Table 6).

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