

# Workplace Development as Design Work

## – about setting up a design theory project

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In this article the setting up of a research project is discussed. The objective of this project is to contribute to a long term development of the process for change in working life. By proposing terms which in a new way can articulate the practice of working for change we want to throw light on new aspects, and thereby contribute to a purposeful development of this practice. We attempt to formulate a perspective, where workplace development is regarded as a creative task, a design process. Apart from our earlier experience, as an empirical basis for the research project we have chosen to utilise experience from the steel industry of Dalarna, which is now in a dynamic stage of development with both new investment in technology, and attempts to develop competence and new forms of work organisation. In this article the research approach, which at the same time is the result of the research work to date, is presented. The objective is to thereby contribute to a broader discussion about how design research can be carried out.

Theme  
WORKSPACE  
DESIGN

**T**HE WORDS WHICH ARE USED TO DESCRIBE the processes which constitute the field of research are many, and to find good usable terminology is difficult. Working for change, workplace planning, development work are terms which are used more or less synonymously. The term 'change' may mean both changes that are planned, and changes that occur by chance and not expected. 'Planning' has a strong emphasis on linear planned development moving mechanically from one point to another, and where one ignores the fact that both prerequisites and objectives change as the project evolves. We have chosen to use the term 'workplace development'.

The implied meaning of 'development' as a change for the better, a basic attempt to get ahead, is an important dimension in industrial contexts. However, what is important in this research project is that the term development can be associated with a

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subject, that there is somebody or some people that think the matter over and see to that the process is carried forward. When it comes to 'workplace' it primarily refers to work, a phenomenon which in many cases is usually described in social terms. 'Place' indicates that it is concerned with a physical phenomenon in the form of technical equipment and premises. Workplace in physical terms, the technical equipment and premises, becomes thereby a reflection or medium for the social relationships at the place of work. A social aspect of technology is brought to light. Even capital intensive production systems, and advanced information technology have definite and important social aspects i.e. they can be described in social terms. Our point of departure is thus that workplace development can be regarded as a social phenomenon. We are not seeking to categorically define this phenomenon, rather we content ourselves with a limitation and an elucidation that we consider functions in a satisfactory manner.

#### **The steel industry of Dalarna**

Four steelworks in Dalarna constitute our empirical basis in the research project. The reason that we chose the steel industry was that we had developed connections with persons at different levels. As a result of a previous study we had also acquired a relatively good knowledge of conditions within this branch. We also felt that the branch itself was fascinating with its historical traditions, its vital role in the development of Sweden and the drama of the large-scale works with their fiery processes. But the steel industry of Dalarna is also interesting from another point of view. For the past couple of years major structural changes have been taking place. From the steelworks' traditional culture of production a high technology process industry is emerging. A continuing internationalisation and considerable investment in new technology appears to have basically changed the conditions for the old works' culture. The number of staff is reduced. With the new information technology new opportunities for the employees are created, and responsibility and authority are being shifted further out in the organisations. However, it is common sense that new technology is not automatically accompanied by higher productivity. In the words of one of our contacts in the steel industry "the human being is 80%, and the technology is 20% in order to achieve full use of capacity". The work is re-organised, and the development of competence stands in focus.

#### **The origin and objective of the research project**

The research project has its origin in a socio-technological analysis of the hot rolling mill at Avesta-Sheffield AB in Avesta'. We examined how the demands for competence changed in connection with

the introduction of new technology and a new organisation of work. As our method of investigation we chose a socio-technological tool, Pasmore's model for technological systems' analysis<sup>2</sup>. By carrying out two parallel interview studies, one with workers and one with management and senior staff, we were able to reveal contradictory points of view regarding the groups' opinions about the need for competence and ways of achieving a more efficient organisation of production.

During this study we made several interesting observations which have been important for the subsequent project. Firstly, we could establish that there are widely differing, but equally 'valid', interpretations of the conditions prevailing at the same place of work. Secondly, we noted that the 'illustrations' which were included in the analysis, a figure of the flow of materials and a variance matrix of production, functioned very well as a basis for discussion at all levels of organisation.

With this experience we became interested to observe how development work was carried out at other workplaces within the same branch. We visited three other works, and discussed workplace development with local managers, foremen and union representatives.

An earlier observation, which for us became confirmed after these visits, was that there is a considerable difference between the way in which one describes how changes take place, and how these are carried through in practice. The descriptions in general indicate a clear and precise process, often split up in a succession of stages.

The practice of change that we had come across at these workplaces had on the contrary been characterised by a process of searching under conditions of much uncertainty. Despite this, one had often attained good results, even if they were not always intended from the beginning. One of the lines of thought we followed was that there is a lot of practical knowledge about workplace development, but the abstract models or theories for combining and structuring experience which predominate today are not always sufficient to describe what happens in a development task. Therefore we considered there is a need to develop other ways of seeing things in order to provide a structure for practical experience of how workplace development might be carried out. The perspective which interested us was what happens when a group of people set out to change their workplace, to find terms which make it possible to describe workplace development at the level of the subject, from the point of view of those who are right at the heart of the process of change.

In this article the research approach, which at the same time is the result of the research work to date, is presented. In this way we want to contribute to a discussion about how design research

might, and should, be carried out. We have chosen to regard our own work as a creative task – as a development of a research idea where the objective is allowed to be open and influenced by new experiences. The research project is certainly an empirical project, which is based on observations at several workplaces in the steel industry, but our efforts have been mainly directed towards the construction of a conceptual model with the aid of which we attempt to interpret workplace development in a meaningful manner. Despite being confined to a single branch and a single region, we claim that our reasoning and the terms we discuss are valid, i.e. they have a point, for all development activities concerning working life. The research project on a general level might be described as a theoretical experiment, where interpretation and reflection play a central role, and in this article we want to direct attention towards the role the construction of a theoretical model has for the understanding of practical development work.

### **Theoretical point of departure**

#### *Seeing as*

A point of departure is that workplaces may be regarded as social constructions. Even if workplaces might appear to be highly objective, as something that affects the employees externally, which might easily be the case when one stands in deserted premises completely dominated by machinery and technology, these workplaces are none the less constructed by people, and expressions of traditions and social norms. Places of work are meaningful, they mean something for those who are working there.

Workplace development for us means the change and development of this social construction, or in other words the reconstruction and reinterpretation of a social reality. It is this remarkable process that we have chosen to regard as a design process. The sociologist Johan Asplund argues in his book, *Undran inför samhället*, that social phenomena are possible to understand. He talks about *seeing something as something*. Such an interpretation of a social phenomenon may be understood in the same way as when people find a meaning in a puzzle picture when it is looked at in a certain way, from a certain aspect. Somebody else – or the same person a moment later – sees something quite different in the puzzle picture. Nobody can rightly claim that a single interpretation is the right one. Interpretations, and the terms they provide, can only be tested in terms of the experiences of each individual. But interpretations for that matter are not just a play with words, a way of passing time. Interpretations imply an understanding of social phenomena, they are highly relevant, or have their merits.

We have chosen to *see* and understand workplace development *as* a creative process, a design process, and we have endeavoured to regard those persons and groups which are engaged in development work in the same way as the artist in front of his easel, the architect at his drawing board or the engineer with his drawing equipment. This does not mean that we categorise workplace development according to the rules and conditions which apply to these other phenomena. Rather the issue is to take account of the differences and similarities between these different phenomena.

### **Design theory**

With this article we want to describe both the organisation of the research project and the field of research, workplace development, from a theory of design perspective. The merits of to *see* both these activities as design processes are raised. The objective is to create knowledge about the creative qualities in both research processes and workplace development.

In an article which discusses the short history of the theory of design<sup>3</sup> Jerker Lundequist identifies three generations in the development of design theory. In the first generation, design is a problem solving process where the problem is decomposed in the form of smaller problems, and where the process as a whole is split up in stages. The process is regarded as a linear process, with analysis-synthesis-evaluation as constitutional elements, and the designer is regarded as an objective expert.

Characteristic for the first generation was thus the belief in systematic methods, which had been founded on theories based on mathematics and logic, on the objective, scientifically trained design expert, as well as the ASE-model of the design process.

In the second generation, design is regarded as an activity alternating between the designers' proposals and the demands of the users. Both sketch proposals and user criteria are developed continuously towards an ever increasing level of precision.

One may call this a coordination between the fundamental ideas and modifying factors of the design project.

The conceptual model of the interplay between fundamental ideas and modifying factors builds on the concept that problem solving is a process of searching in small stages, in the direction towards a far off, vaguely implied objective.

Typical for the third generation, according to Lundequist, is to regard design as a special way of thinking. Design thinking is regarded as an obvious part of the intellectual capacity of the human being, just as important and fundamental as the ability to speak.

From the development of design theory, still according to Lundequist, four different but mutually related research themes have evolved, and these together constitute an overall research programme for the subject of design theory:

- (i) the normative orientated attempts to develop models for how design processes should be organised, and how new models and tools should be integrated in the process;
- (ii) the alternating normative and descriptive attempts to analyse how design problems are constituted, how they *should* be solved, and what possibly separates design problems from other types of problems;
- (iii) the descriptive orientated attempts to describe, analyse and document how the actual design work *is* constituted;
- (iv) the philosophical reflection around both practical design work and design research. In this philosophical reflection is also included analysis and the development of the core terminology of design work i.e. attempt to articulate the practice of design work.

Regarding the second theme, Lundequist points out that it is no longer obvious that a design problem is to be regarded as a special type of problem that singles out itself due to its complexity. On the contrary the opinion that now dominates is that design is a *way of seeing* problems.

In our work with the construction and use of a design theory model to interpret the phenomenon of workplace development, we have regarded design as a special way of thinking, which relates to what Lundequist calls the third generation. This development of design theory, to which we would like to refer to authors such as Donald Schön, should be understood as a reaction against the technological rationalism and instrumental perspective of the first generation. The distinction between designer and user of the second generation is meaningless for us with regard to workplace development, because in this context we *see* the users *as* designers. What fascinates us is peoples' ability to orientate themselves in uncertain situations, the ability to make meaningful and rational choices, and the ability to steer development forward in a desired direction.

The different themes that Lundequist presents are mutually related, but are emphasised in different ways in different research projects. In our research project we accentuate the second theme, design as one (of several) means of looking at a problem. There is also a strong element belonging to the fourth theme, to articulate the practice of design work, while the long-term objective falls within the first theme.

### A design theory model of interpretation

In order to carry out our theoretical experiment, and *see* workplace development *as something*, as a design process, we set about developing a conceptual model. We started off from a design theory study by the information theorist Erik Stolterman<sup>4</sup>. Stolterman's ideal orientated design theory deals with something quite different from workplace development, namely the development of information systems. There are two important aspects why Stolterman's thesis has played such an important role in our research project. Firstly, Stolterman takes up systems development as creative work. Stolterman's point of departure here is from Asplund: *seeing as*. Secondly, Stolterman does not make any division of the design process in successive stages more or less in a straight line towards a predetermined objective. The latter is worth emphasising. If one regards the design process as a process which confines itself to solving predetermined formulated problems one leaves important questions open. With such models one cannot understand the process of searching and problem formulation which the act of creation always involves. One ends up regarding the process one wants to understand from an outside perspective<sup>5</sup>. Instead, Stolterman avoids this problem by recognising phenomena – and relations between these phenomena – which are constantly present in the design process, and which those that carry through the process are faced with all the time. In other words in Stolterman's design model there is no time axis. The perspective of the model is also related to the subject, the designer himself. The model has therefore possibilities of being a tool for the designer to acquire increased insight into what he, or she, is in the middle of.

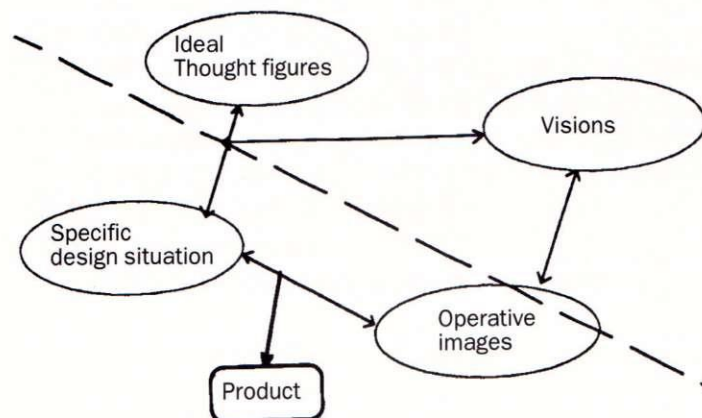


Fig 1: Illustration of the design process according to Stolterman. Above the dashed line are concepts intended to describe the thinking of the designer, while below the line are the physically tangible components of the design process. To understand the design process the upper part of the illustration must also be present

According to Stolterman the design situation is the environment which is both the cause that a certain design process is carried out, and the situation in which this process is carried out. The design situation is both the prerequisite for the design work and the object to be designed. The design situation and design work have a dialectical relationship, they mutually influence and determine each other.

Thought figures, according to Stolterman, may be regarded as a collection of 'fixed ideas' or 'fads', which can be interpreted as preconceptional understanding or prejudices. Thought figures can be seen as existing both privately and socially. They are the intellectual tools, deliberate or accidental, of the designer, a means of seeing reality. The design situation also influences which thought figures the designer presents. The term thought figure can be compared with the term perspective in terms of viewing a problem from the perspective of an engineer, behavioural scientist, and so on.

Visions arise in the meeting between thought figures and the specific design situation. The visions can be said to be about solutions, but they need not always be coherent. At the beginning of the design process, for instance, there are visions that are contradictory and not coherent.

Stolterman describes the operative image as a configuration of how a vision could be made tangible. Its function is of developing, refining and testing the vision. It is a picture that the designer works with and changes. Different fields of design have different sorts of operative images.

#### **A developed collective design model**

Workplace development, as with most design processes, is a process which is collective, with many people involved, an inter-subjective process. 'The designer', when it comes to workplace development, is usually a group of people with different skills: engineers, property experts, production managers, union representatives, maintenance staff and workers directly involved in the production. Within the group that carries out the design work there are often different interests represented: the property department, maintenance and production organisations, employers' and employees' representatives. In Stolterman's model the designer and user are separated, but those that design places of work are also to a large degree users, even if there are also consultants and experts which are professional designers. Our development of Stolterman's model is illustrated in the following figure:



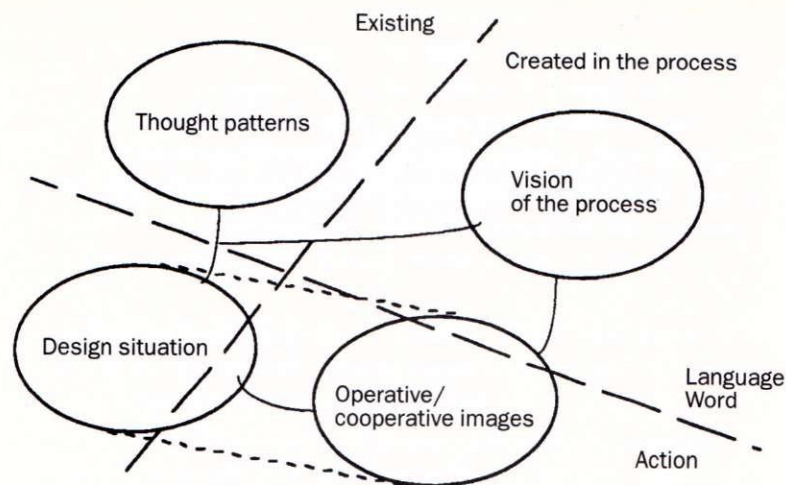


Fig 2: Developed diagram of the design process

Thought patterns in the developed model represent all the thoughts, ideas and preconceived opinions about what the place of work should look like represented by the collective designer, the project group, those that work with the development of the workplace. Thought patterns have their origins in the experience of the designer, and are taken by the participants into the design process, which in turn influences the patterns of thought.

If the designer is a project team consisting of staff members of the company unit, it is the place of work and the company unit that constitute the design situation. The design situation can be the working climate and traditions of the place of work, as well as resources for the development work and guiding framework, that constitute the prerequisites for the development work. It is important that the project team itself clarifies what the design situation is like in order to understand the limitations which the design situation provides, and that they attempt to influence it in as favourable way as possible.

The relationship between thought pattern and design situation reflects the character of the place of work as a social construction. The patterns of thought that everybody in the design team bear are to a high degree a product of the reality to be developed.

The visions in the model are the objectives for the development work the project team set up. In contrast to patterns of thought, a vision endeavours to be coherent. The vision is normative, a means of expressing the demands that the design is to satisfy. It is important to understand that this is concerned with the visions of the collective designer, not about the visions that are added from elsewhere. Such external visions belong instead to the design situation.

Co-operative images are the shared operative images which the collective designer uses. These are images of the common visions. Apart from representing the visions and being manipulative they must be communicative to the project team. The co-operative image often plays an overlooked role in the design work. Because it is associated with considerable difficulties to clarify phenomena without creating images, the ability to create cooperative images is decisive when it comes to which problems the project team are able to deal with.

In Stolterman's model there is a special circle which symbolises the product, the result of the design process. We have eliminated this in our model, because we consider that it is difficult to state what the actual product of the design process is. What is to be characterised as the product depends on how one chooses to demarcate what one regards as the design process. One may instead claim that it is the design situation that is the product. When we talk about workplace development carried out by the staff within a company unit, it is their own workplace which is transformed and which also constitutes the new design situation.

The illustration is criss-crossed by two dashed lines. The line which goes from left to right is to be found in both Stolterman's model and in the developed model. The line symbolises a mirror, where what there is above the line, words and language, reflects what there is below the line, the material world. The vertical line is a further development. That which already exists is illustrated to the left of the line, and that which is deliberately created to the right. The line cuts through the design situation, because we see the design situation as containing what exists, and what the collective designer is able to influence. The designer bears the thought patterns, the vision is deliberately created.

### **The structure of the project**

#### *The research work – a design process*

An important aspect of the project is that we have come to regard our own research process as a design process, as a task that creates meaning. Our ambition is that our interpretations shall become socially meaningful, and have an influence outside our own small group. Our interpretations must therefore be objectivated in future development processes at places of work. We consider that radical re-interpretations of workplace development can have consequences for practical development work if practitioners also use these fresh interpretations to re-evaluate their own praxis. Our discussions about research and the role of researchers are concerned with reformulating experiences and creating aspects, seeing, to practice and test words in new situations, but also the importance of creating meaningful relations with people that are involved practically in workplace development.

We regard our discussions in the research team as a mutually creative task, a design process. In these discussions we develop our research approach, and formulate the visions we want to introduce into the discussion with the practitioners. We attempt to articulate our thought patterns by creating a situation which allows a free dialogue with free associations, and by writing notes together on the blackboard visualise our individual thoughts. After these discussions we have attempted to compile the ideas by writing them down in note form. At a later stage we have been able to go back to these documents, take up ideas that have been forgotten, and re-view them once more. The discussions have meant a continual reappraisal of what we do, and decisions regarding how and if we shall continue. By not having either a fixed objective or a ready developed method for research we have been compelled to make continual choices, which gradually results in a research project which to a large degree is carried out at the same time as it is formulated.

#### **The research discussions, three angles of approach**

We have chosen to describe our own research process by providing examples of the different accentuations and reflections which, stretching over several years, we three researchers have made during the mutual discussion which is a central part of our research project.

Within the disciplines of the behavioural sciences and the occupational sciences there are several theories which cast light on development work. The focus in these theories is usually on what the actual development as a process is like, or on the result of the process for those that have participated. A problem with existing models is that they obviously have not succeeded in making it possible for practitioners to carry out workplace development in a satisfactory manner in working situations. It is seldom it turns out as one had expected, and it takes a long time. From a behavioural science perspective, it is a challenge to test a theoretical design model as a tool for understanding and developing the art of carrying out workplace development. The behavioural scientist is normally not trained in the tentative searching that characterises the traditional disciplines of design. To re-formulate the theoretical design model which we have borrowed from Stolterman, and develop accurate terms, which also mean something for practitioners, is from this perspective central and conclusive for the validity of our research. Perhaps our conceptual model can provide the participants in workplace development projects with a fresh way of seeing things. Perhaps we can formulate accurate terms that will become useful tools. It is therefore necessary for us to take extra care to reach an understanding between practitioners and research-

ers, and to carry out a re-formulation of theoretical design terms together.

Among the professional groups which are normally involved in the development of workplaces, architects are one of the few which have a word for the process of searching, which is always a component of creative work. This word is 'sketching'. When an architect produces a sketch it is a reproduction, a representation, of a conceptual reality, with the purpose of testing if an idea is good enough. In other words the sketch is thus an important operative image for the work of the architect. The method of sketching is also something which is taken seriously by architects. One shall sketch lightly in the beginning, and eventually, when one has first made a preliminary decision, start to blacken things in. One shall alternate between the overall and the detail, one shall change angles in the perspective. The sketch may be more or less detailed. There is freedom to leave out factors which are important, but which for the moment may be left open. The sketch in general functions best together with words, which explain and point out important phenomena. One may with good reason claim that sketching is a mental experiment, an experimentation with a conceptual future reality. And in the same way as the architects' sketch our conceptual model is incomplete, it leaves out a great deal which may be important. The image is an arbitrary construction which we create ourselves as we chose what we want to emphasise. This arbitrary construction is presented as an image, among other images, to be used by those who find it useful. The image, or conceptual model, need not be anything which has to be directly understood. It is not a case of a simile or a metaphor. It is indeed a construction, which one must learn to understand and to use.

In order for a group of people to be able to formulate something new, something which the group also discovers together, it is necessary for the participants to formulate themselves and respond in an open dialogue. Our conceptual model can be understood as an image of a series of continuous dialogues, a discourse. The relationship of the dialogues to the reality being discussed is remote, and difficult to make perceptible. But the objective of the dialogues is not to illustrate reality, rather to create the opportunity for reflection. The dialogues provide every one of the participants with the opportunity to formulate an alternative, to sharpen his awareness, to take advantage of sudden glimpses to see connections which are meaningful, and to re-formulate understandings which at the beginning of the dialogue only existed as a matter of course. These dialogues may be regarded as the motor in our research project, a learning process, where the participants themselves realise and understand what they want by making their personal experience, which is often emotional and unclear, open for the

comments of others as well as for personal reflection. In a practical work situation, and in research work, the overall objective of the dialogues is to make the choice and actions of the participants more rational and deliberate.

#### **Dialogue at the places of work**

A major part of our research work consists of open interviews with persons within the steel-making industry, which in different positions and at different levels have been and are participating in the development work. We have regarded access to places of work as essential for our possibilities to understand the context we are working with. Without this understanding, which naturally cannot be complete but nevertheless is something more than fragmentary, we cannot know what we are talking about. We must understand both the activity related terms which are used, and the traditional environment of the activity. Our entry into dialogues at the places of work are our own previous experiences, structured in our discussions around the conceptual model that we at the same time develop.

In our interviews the subject matter is workplace development, and the objective is to understand what a designer does. Since we have chosen to regard the person being interviewed as a designer. These interviews constitute the empirical basis of the project. The aim is to understand what happens when somebody creates something as remarkable as a new place of work for several hundred employees. But we do not regard these interviews as instruments to gain knowledge – that would assume that the statements we obtain stand in an obvious and close relationship to what we are interested in. We do not see the persons we talk to as neutral mediums, which stand between us and an objective reality, and we know that language is not a neutral medium which can reproduce reality in coherent terms. Both dialogues and the text which the interviews result in stand in an ambiguous and uncertain relationship to reality.

#### **The 'Knowledgers'**

As a consequence of our ambitions to develop a working conceptual model the idea came up to invite a group of employees from different steelworks in Dalarna to a series of meetings at the University. We called this group 'The Knowledgers', and we pointed out that their task was to participate in a research project, and to develop concepts together with us researchers. The aim of these meetings was that researchers and practitioners should discuss together how one can meaningfully describe workplace development, to construct and practice a mutual approach.

So far we have had two meetings with The Knowledgers. At the first meeting the practitioners were invited to present the development projects which they themselves are involved in. We emphasised that we **did not intend** to analyse their different projects, and nor the role they played in the projects. The purpose of the presentations was to understand what happens when practitioners describe their own experience of a development project. Accordingly the task of the first meeting was *to relate what they would like to relate* in order to communicate experience about an ongoing development project. One researcher carried out the 'mapping' i.e. wrote down the group's notes on the blackboard and sketchblock. These notes functioned as an operative image making it easier to recapitulate the discussion and to find support in what had been noted. From these accounts it became clear that all the participants wanted to come further with their ideas about how one works in a development project. Everybody had met difficulties e.g. in the form of old ingrained roles, or a general suspicion about the real purpose of the development project.

During the second meeting the focus was on design theory and the terms used in our model. The task of the The Knowledgers was to recount critical occurrences in the development projects they had taken part in. With this information we were out to reach what the practitioners regard as the core aspects of workplace development. The aim was to accomplish a mutual game, where researchers and practitioners selected key words from the accounts and placed them in the context of our conceptual model. This serious natured game, which we call 'lapping', provided a good discussion. "The words are difficult and abstract", somebody thought. "Is it really necessary to have these words? What is the use of this in practice when we shall go out and talk to people?" To this a fellow practitioner replied that "before you go to a meeting perhaps such an image may be of use to you".

### **Concluding reflections**

To carry out research on 'workplace development', a problem area of apparently vast complexity, might appear to be an impossible task, and many efforts have been attempted within this field. The problem area has been broken down into smaller issues which have been individually researched by surveys of different kinds. Or attempts with action research have been used, where the researchers have participated actively in a course of events in order to acquire an understanding of what happens. With this article we want to contribute to a discussion about the possibilities of design research. We connect and try to combine our research efforts with Schön's ideas about the importance of reflection, and Asplund's discussion about the possibility of making social phenomena

understandable. In the article we have described both our way of formulating research efforts, and our ambitions to define and demarcate our research subject from the perspective of design theory. Our ambition has not been to define either research or practical development work as design processes, but on the contrary maintain the emphasis on *seeing* these activities *as* design processes. The objective is to create knowledge about the creative elements in both research processes and workplace development.

In a design perspective the subject, the designer, might be an individual or a group of people, the subject matter both physical artefacts and social systems. The important thing however is that design theory directs attention towards the actors, and provides knowledge about what happens when an individual or group of individuals shall come upon something new, formulate an alternative. The actors provide the design process with a direction of purpose, but are at the same time guided by the design situation they come from, and are engaged in changing. It is through patient work, with images and words to discover and clarify a problematic and uncertain design situation, that a designer is able to simultaneously think out new solutions.

It is our opinion that design theory is concerned with knowledge about processes of understanding. In order to understand a social phenomenon such as the development of workplaces, we regard interpretation and reflection, as presented by Schön and Asplund, as the main elements. Vital for both these authors is the construction of a theoretical sphere, what Schön calls virtual reality, an arbitrary conceptual construction, which opens opportunities for the participants to proceed by trial and error, without being bound to physical restrictions or undesired consequences. With the aid of a conceptual experiment a designer can search for, and formulate the conditions for, a desirable future situation. The principal tool of the designer is the work with representations, or operative images, which when produced increases awareness about what in fact happens in the design situation. To discover and develop new co-operative images we regard as an important contribution to improved workplace development.

A main issue in our research discussions has been if the conceptual model, which we devote much time and effort to develop, has any explanatory value i.e. if the model itself contains any important knowledge which explains what workplace development is, and in this way may also be of use for practitioners in future development projects. We do not however mean that a theoretical model should stand in some sort of obvious relationship to reality, and neither that our efforts to develop a design model should aim to explain reality. In our discussions, it is the dialogues about the design model, likewise the dialogues about our experience of work-

place development, which engage us. These dialogues are at the same time a means of improving the construction of our conceptual model. The value of the model lies thereby in the fact that it is meaningful to use it. A good model irritates the senses – it is both incomprehensible, obvious, abstract, shunning and tangible.

We consider that an important task for the design researcher is to construct creative dialogues, with colleagues and with practitioners, by showing up exciting examples as objects for comparison, and that in these dialogues follow up the efforts of the participants to make their reflections and points of view comprehensible. In our research project the participants together in various dialogues shall articulate and create a deliberate perspective about workplace development. The dialogues that we three researchers construct and participate in during the project, in contrast for instance to information meetings and negotiations, are characterised by an endeavour to reach authenticity. The participants do not represent, nor do they play a role, rather they participate in the capacity of their own personal experience. The dialogues are not instrumental, they are not for solving or discussing pre-identified and pre-arranged problems, but are developed in their own right.

Coming this far, we are right in the middle of our project, we have gathered that our design perspective is markedly different from the prevailing perspective in workplace development. In the steelworks of Dalarnas new workplaces are being created. Very few, if anyone, however, of those we have had the opportunity of talking to, regards themselves as the creator of these new workplaces. The courses of development are described largely in terms of delegation, and large segments of the development work are regarded as a peripheral activity, an issue for experts from outside the daily working routines. An urgent question for us is to understand how we shall go further with an investigation of a design process which, according to the predominating opinion, does not exist. We are at the same time convinced that an important potential of the development work is ignored when the predominating opinion is that it is necessary to be able to split up a development process into well defined parts, and that it is important to get it right from the beginning. We see it as a vital task to try out a design perspective, which instead identifies the importance of learning while the process is underway, and the importance of supporting and clarifying the searching for, and the experimenting with, new solutions which are characteristic for creative design processes.



## Notes

1. Mächs, Olsson, Pettersson, Skans, *Rostfritt stål och höjd kompetens*, stencil, Arbetsvetenskapliga Kollegiet, 1993.
2. Pasmore, William, *Designing Effective Organizations*, 1988.
3. Lundequist, J.: "Om designteorins uppkomst" in *Nordisk Arkitekturforskning* 1992/4, p. 10 ff.
4. Stolterman, E., *Designarbetets dolda rationalitet*, Umeå University, 1991.
5. In his thesis *Architecture, Technology and Human Factors. Design in a Socio-Technical Context*, Chalmers University of Technology, 1991, Jan-Åke Granath discusses a similar dilemma i.e. what a socio-technologist is confronted with at workplaces: the socio-technologist 'knows' which solution is 'best', but at the same time wants people to be participants in the planning process, and feel their way towards the solution.



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