

Arild Berg

Practice based innovations

Summary:

Innovation is important to meet new challenges in an ever more changing society. A definition of innovation is that new ideas are integrated in a context for lasting changes to the better. A lot of research has been done on the topic. Research in innovation has in general a problem of not being realised in practice¹. The new knowledge might often end up only as interesting articles in a magazine. A good idea represented in a product might never come into use. A more practice based research on the topic might elevate the chance that the results come into practice. The reason for this is that a combination of research methods in design, and research methods for organisational change from social science².

It is a common understanding that artistic skills and creative methods can contribute to innovation. It would be interesting to examine these processes more closely; what qualities are needed for success in this field? In different professions and in different communities of practice, how can the artist contribute to innovation? Through art productions related to a chapel, to a secondary school and to a hospital, it is possible to look closer to these topics from different cultural angles. Participatory learning processes in product development open up for cross disciplinary research. Communicative qualities can be viewed in a holistic perspective; in the product itself³, and how it is integrated in a context. The analysis and development of the product itself is important, including how it is integrated in a specific community, and becoming a part of a visual culture.

Background.

Terms as creativity, new ideas and new values are often put in relation to the term innovation. It is a problem if the words just remain in at report in a desk, and if it is not translated to practical situations. The National Centre for research in Innovation and NIFU claims that there is a danger in that the research culture in the universities and university colleges most value the academic practice, as publishing in magazines. This might turn the researcher's interest in an increasingly more academic direction. Research should also be more directed towards action and practical problem solving for business and the work-life in general.⁴ A central question is: "How can the research-results be transferred from the academic oriented universities to be interpreted, understood and changed to practical knowledge that can be used in the business-life"⁵

¹ Aris Kaloudis og Per M. Koch, "De næringsrettede instituttene rolle i det fremtidige innovasjonssystemet", NIFU STEP, 2004, Norsk institutt for studier av forskning og utdanning. Senter for innovasjonsforskning. Rapport, s 108.

² Reason, P & Heron, J. (1986) Research with people: The paradigm of co-operative experiential inquiry. *Person Centered Review*, 1: 456-475

³ Vihma, Susann, Design semantics and aesthetics <http://home.snafu.de/jonasw/PARADOXVihmaE.html>

⁴ Aris Kaloudis og Per M. Koch, "De næringsrettede instituttene rolle i det fremtidige innovasjonssystemet", NIFU STEP, Norsk institutt for studier av forskning og utdanning. Senter for innovasjonsforskning. Rapport, s 21. 2004.

⁵ Aris Kaloudis og Per M. Koch, "De næringsrettede instituttene rolle i det fremtidige innovasjonssystemet", NIFU STEP, 2004, Norsk institutt for studier av forskning og utdanning. Senter for innovasjonsforskning. Rapport, s 108.

Many work-situations can be seen as different types of communities of practice. In the learning theories of Lave and Wenger⁶ is the importance of learning in the communities of practice underlined compared to learning from a theoretic perspective.

Innovation research should to a greater extent be used in practice to develop the business which consists of many different professions. The service oriented society is becoming more and more dominant in business life. The society of information and the society of experiences are new terms that are used to describe the society today and tomorrow. Some trend researchers might even tell us that we already live in the dream society where more and more time is used for consumption of articles, services and experiences, to fulfil fantasies and dreams, and to have good experiences.⁷

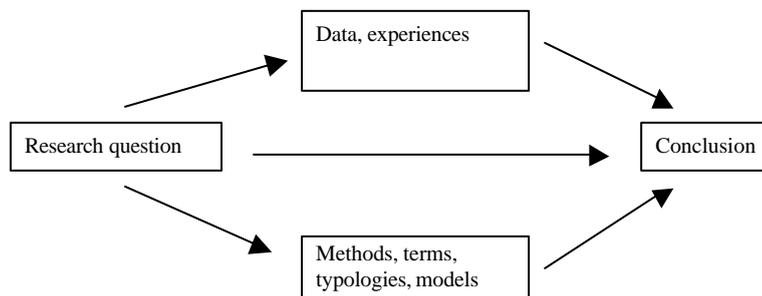
Theoretical frame.

The theoretical frame is based on practice based research. These are based on theories from art and design, from social science, and from pedagogical theories. It is important to discuss the ontological and epistemological questions, relating to the best way to answer the hypotheses and research questions.

Approach and methods.

Structure of the study

The nature of the research question should to a certain extent decide the choice of methods, that will produce some data material and experiences, which through analysis can lead to a conclusion. It should be a relevant and reliable coherence between these elements. This is shown in this figure by Kalleberg.⁸



The methods that are suggested in this plan can be changed according to suggestions from the tutor.

Theory and methods

There are an increasing amount of methods related to art and design⁹. Which methods are relevant in product design, and in the multidisciplinary interaction?

Model of the project situation

⁶ Communities of Practice; Learning, Meaning and Identity, Learning in doing; social, cognitive, and computational perspectives, Wenger, Etienne, , Cambridge University Press 1998

⁷ Karl Baadsvik, Karoline Daugstad, NINA, "Kulturminner og kulturmiljøer som grunnlag for verdiskaping" Oppdragsmelding 783, s 10.

⁸ Kalleberg, R. (1992) Konstruktiv samfunnsvitenskap. En fagteoretisk plassering av "aksjonsforskning", Institutt for sosiologi, univervitetet i Oslo.

⁹ Design Research, methods and perspectives, editor: Laurel, Brenda, 2003, Massachusetts Institute of Technology

An attempt to show the project situation in a model in figure 4: New knowledge and new products can be developed in professional communities of practice in art and design. Documentation of experiments related to existing philosophy and they can be done with text and photo. Big arrows show formalised interaction in a cross disciplinary community. Small arrows and dotted line represent a non formalised interaction, interaction that can rise from the multidisciplinary communities of practice.

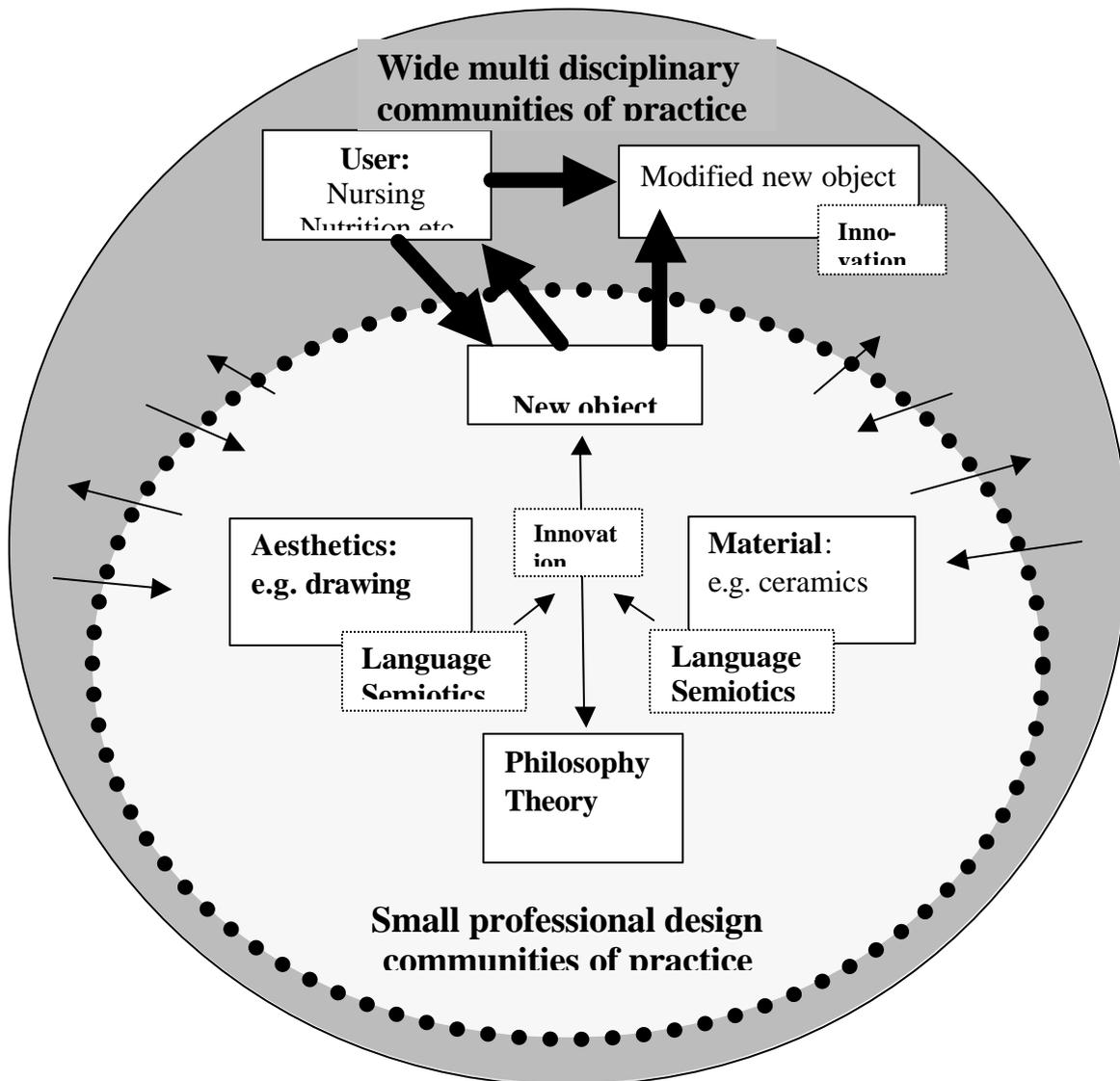


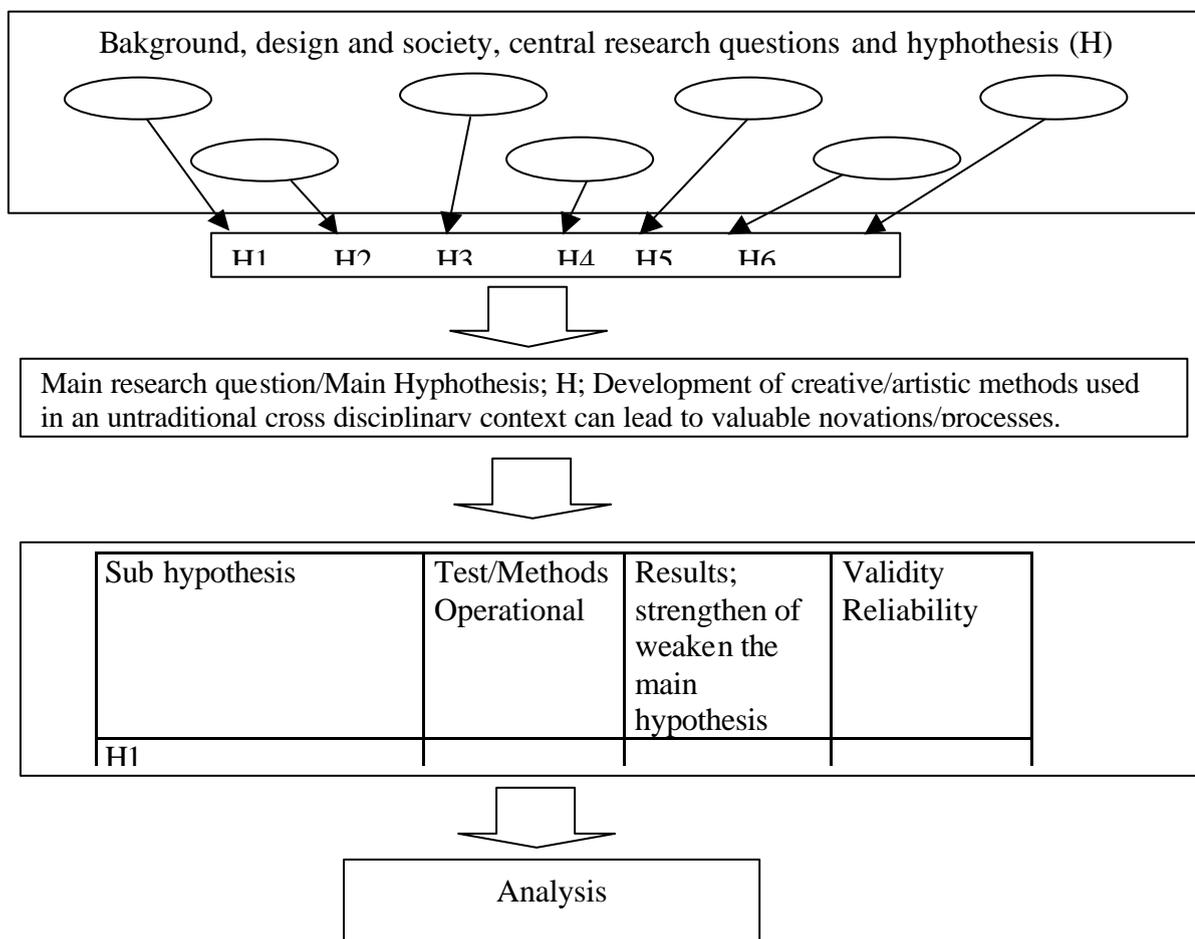
Figure 4.

In a community of practice in the studio it is possible to document what is being done, through photo and tekst. This can be related to different traditions and theories in design, or other related fields.

Model theoretical structure.

Design is in it's nature a cross disciplinary discipline. Methods that will support cross disciplinary actions can be useful. A possible modell to structure the project is suggested in figure 1. It is a visual

interpretation of a structure of hypothesis made by Mette Mo Jakobsen¹⁰, where the cross disciplinary way of working reflects a cross disciplinary subject like product development, where there is a coherence and interaction among the different research subjects: "Complex problems in a complex environment require cross-disciplinary science".



Figur 1. structure

Main Hypothesis and sub hypothesis

H: Development of creative/artistic methods used in an untraditional cross disciplinary context can lead to valuable innovations/processes.

The purpose is to have an good interaction between learning, aesthetics and materials, that leads to innovation.

Central hypothesis in this field are:

1. Hypothesis related to society today:
 - The emotional value of the product is increasingly important for the customer.
 - Artistic knowledge is relevant for products with experience qualities and emotional value.
 - Aesthetic artistic knowledge can be documented and can be included in a research project.

¹⁰ Mette Mo Jakobsen, Development of competitive product concepts, a contribution to a systematic approach for small and medium sized companies. Doktor ingeniøravhandling, Institutt for produksjons og kvalitetsteknikk, NTNU, 1995:69

2. Hypothesis related to aesthetics and materials:

- Liberation of the ceramics from the guild tradition is dependant on the ceramic community's own ability to liberate the ceramics from it's own established, traditional limits.
- Artistic and creative methods with materials and aesthetics can lead to new products.

3. Hypothesis related to interaction in multi disciplines:

- To Establish cross disciplinary communities of practice including artists and other professionals, such as nurses or social workers, can increase the possibility of innovation.
- Cross disciplinary communities of practice can be strengthened by the use of communication models.

4. Hypothesis related to learning:

- Artistic tacit knowledge and quality-aspects can to a greater extent be transferred in communities of practice than presented as theory.
- New learning processes in product design can lead to innovation.
- Product development is a learning process.

Each hypothesis can be tested with relevant methods. This might be studies in literature, analyses of literature, observation, tests, practical experiments in the material, and aesthetics that is documented, interviews, etc.

Artistic productions – case studies

Case: The Chapel

There is a room in a church where the deceased is shown in a open coffin to family and friends for a last farewell. The room is naked and for some people, it makes the situation scaring and worse. My task is to intervene in the room, presumably with ceramic tiles, to give it a better quality. I have already started this project, with co-operative inquiry with the users, the priest, the community and the architect. This is a a three hour long focus group interview, recorded on a mini-disc. I apply for that this interview material can be integrated as relevant data related to my ph.d plan. The art should be in the chapel around February 2006.

Case Secondary School

Two groups of sitting objects should be made to communicate with the pupils in the school. I have proposed to make visual and written references to local persons and nature, which also refer to the user of the sculptural sitting objects. These art objects should be delivered in May 2006.



Sitting object. Reinforced concrete and porcelain tiles. 2005

Case: Hospital

The biggest hospital in Norway is under construction in Akershus. The school has a formal cooperation with this hospital, and the plan is to develop some sort of product related to the building or to the users. This is not based on a specific contract yet, but something that would be possible in either way, a short period intervention, or maybe a longer. No time is yet decided about this project. I find that it can develop grounded on the earlier experiences.

Purpose of the study – expected results

As a part of the Nordcode network this PhD-thesis could contribute to the research field in communicative design in the Nordic countries.

Results of the PhD work can be a contribution to new knowledge;

Exemples can be:

- New learning processes related to innovation
- Flexible Learning processes, related to co-operative experiential inquiry
- Identification and testing of methods that can be used in practice based education.
- Higher power of competition with better communicative products.
- New identity for cross disciplinary groups can form a base for new economy.

The practical experiments in the studio and cooperation in cross disciplinary professional fields can lead to innovation. Systematic documentation can make tacit knowledge visible. Together with theories about communities of practice, is this a base to discuss and develop innovative learning processes.

Internationally and nationally there is a discussion about how to do research in the art field.¹¹ At other universities and university colleges, e.g. School of Architecture in Oslo, The College of Arts and Crafts in Oslo, The College of Art and Design in Bergen, there are different traditions to research in art and design. They seem to be influenced from traditions of art history and philosophy, where the practical aspect is not an naturally integrated part in the theoretical frame. Product design at NTNU in Trondheim has strong traditions in cross disciplinary methods technique, materials and theory, but not to same extent in the practical aesthetical methods. Akershus University College has a strong tradition both in the practical aesthetical research, design methods, and especially with a strong research community within practice based research, and action research in the education programme for vocational teachers. This community can be a very interesting supplement to the ongoing research and discussion within the field of art and design.

Three central areas in product design, and in this project are aesthetics, material and learning. These areas can be experimented with separately, or in interaction.

- *2.1 Aesthetics*, (from greek aisthesis , ' the knowledge that come through the senses') in all aspects, can be experienced through visual media to communicate emotionally with a person or a group. Drawing, form, colour and photo are important means. What are the opinions about aesthetics, in theory and practice.? How and when do certain people relate to aesthetics? Is it related to the material level or a more symbolic level, and how is the difference? The emotional aspect and the experience level of a product can be looked closer at from a semantic point of view.

¹¹ Halina Dunin Woyseth, A continuum from scientific research to creative practice? Noen tanker omkring forskning I skapende og utøvende fag. Kunstnerisk utviklingsarbeid, praksisbasert forskning. Artikkel, Nordisk Arkitekturforskning, nr 1 2003.

- 2.2 *The material* is the body of the message, the voice of the message, that gives form and realize abstract values, ideas and functions. A material based artist is a specialist in the practical use of the material, like a composer and musician who can specialize in a genre or in a certain instrument.¹² How can the material contribute to better quality in a interview situation, e.g. by the use of examples or experiments. How is the material related to the aesthetics and the learning processes?
- 2.3 *Learning* is processes to obtain knowledge, skills and thoughts. Different models of learning, can give different result. Examples: Problem based learning can relate to a more practical and realistic learning situation. Co-operative experiential inquiry¹³ can give higher validation of a research process. Through a social anthropological start of the project the learning process can have a sense of coherence, where the participants feel that their lives and thoughts are included in the processes. What kind of groups or individuals can this be relevant for?

These central moments in product design can separately, and in combination, create innovation especially in cross disciplinary communities. The thesis will examine how to obtain good, lasting and effective changes, by identifying and testing high quality learning processes in product design.

¹² Kruse, Bjørn Den tenkende kunstner Komposisjon og dramaturgi som prosess og metode Universitetsforlaget 1995

¹³ Reason, P & Heron, J. (1986) Research with people: The paradigm of co-operative experiential inquiry. *Person Centered Review*, 1: 456-475