

I N T R O D U C T I O N

RELATIONAL CREATIVITY

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Department of creative studies
Umeå University, SE-901 87, Umeå
ISBN: 978-91-7855-064-7

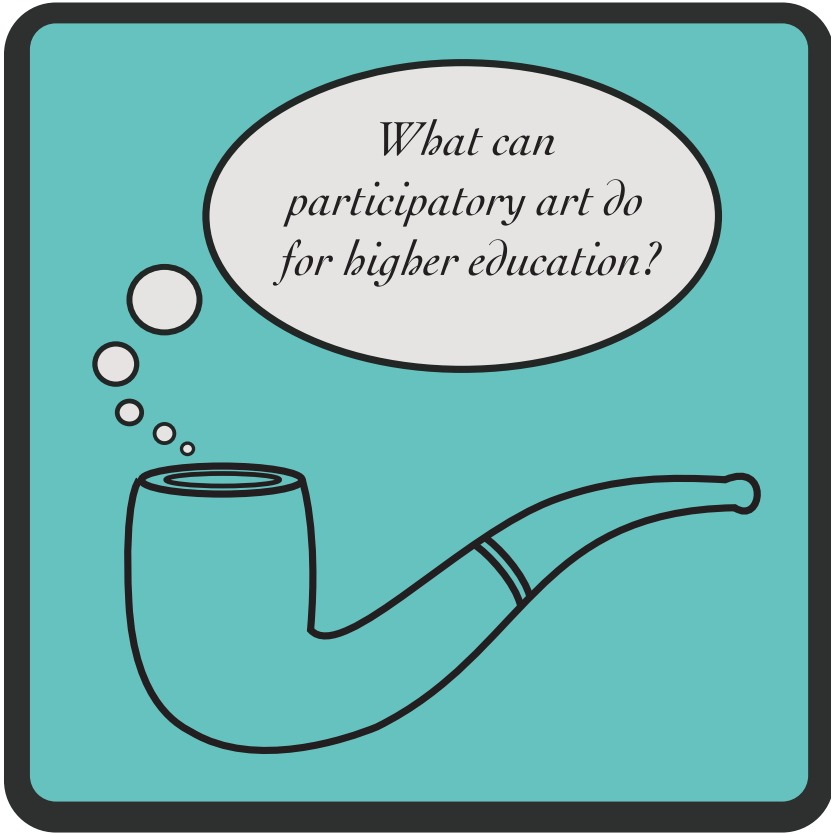
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Sol Morén

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I N T R O D U C T I O N

I N T R O D U C T I O N

RELATIONAL CREATIVITY

WHY RESEARCH CREATIVITY IN EDUCATION?

Creativity is important to research from a global educational perspective, because we need to educate professionals who are creative, to be able to handle the radical social and environmental changes of our increasingly unpredictable world. Creativity is therefore considered as a key competence in future education (EU, 2012). Educational goals for enhancing creativity and complex problem-solving competences of future citizens' are also an important part of UNESCO's (2012) educational policy for sustainable development. Having this global educational agenda in mind, I argue that developing knowledge about how to design for creative learning environments is an important quest for educational research. Up until today, creativity has mainly been researched from an individualistic perspective as a trait or a skill of an individual or as a creative process taking place within an individual's mind. The common individualistic approach becomes problematic however, if we want to develop new knowledge about how to design for creative learning environments. This is because the focus on researching creativity from an individualistic perspective, by measuring and testing traits or skills, does not provide knowledge about what it is in the design of the learning environment that affords opportunities for the individuals to develop creative skills.

Design for creative learning environments

If we want to learn more about how to provide opportunities for students to develop creativity, we need to take a closer look at what is going on in creative learning environments and study educational processes. I argue that it is meaningful to start looking at how social relations and interactions between students influence their creative processes, if the aim is to understand more about how to design for creative learning environments. This is because affordances for students to interact with each other and to form social relations in the learning environment is something which we can influence with

our design. In this thesis I will exemplify how design of artistic experimental interventions can become a way of testing what works in educational practice. The design and implementation of novel educational ideas can also fruitfully involve students and teachers in a participatory design process. Throughout this thesis I will argue for, and exemplify, how research and development work about design for creative learning environments in higher education could benefit from taking on relational and process oriented perspectives.

What can participatory art do for higher education?

This question could be read as a proposal. Participatory Art knows, that it has something to offer Higher Education, so it asks Higher Education: *What can I do for you?*

I started to think about what participatory art could do for higher education while working as an artist-in-residence for a Swedish university, where I had been engaged to develop new creative educational practices with and through contemporary art and digital media. This doctoral thesis in Educational work in visual arts is based on my experiences of designing participatory art interventions and implementing them in regular university courses together with students and teachers, during the residency. In the thesis I will argue for and exemplify how research and development work with and through participatory artistic practices can facilitate for developing novel ideas and rethinking education, when the aim is to design for creative learning environments. I will provide rich examples of how I have researched creativity with and through participatory artistic practices. This thesis is based on empirical data deriving from two participatory art interventions implemented in regular university courses, one campus course in graphic design and one distance course in visual arts. During my research and development work as an artist-in-residence I have not viewed the participants in the art projects as objects of investigation, instead they were invited to participate in implementing, testing and evaluating my design of the

participatory art interventions, in correspondence with a participatory design approach. I find it crucial to clarify that in this respect I am not studying the students or the teachers for the purpose of evaluating their individual learning processes or performances, which would also have been possible, from an educational research perspective.

Relational creativity

In this thesis, I propose that *relational creativity* is the answer to the question of what participatory art can do for higher education. Participatory Art says to Higher Education: *I can give you relational creativity, if you like.*

When I think about creativity as being *relational*, this involves the notion of creativity as a fluent state of mind, which can emerge both within and in-between individuals who are engaged in creative problem-solving processes. This, more or less temporary condition of relational creativity is then influenced by the social relations and interactions that these individuals are engaged in during their creative processes.

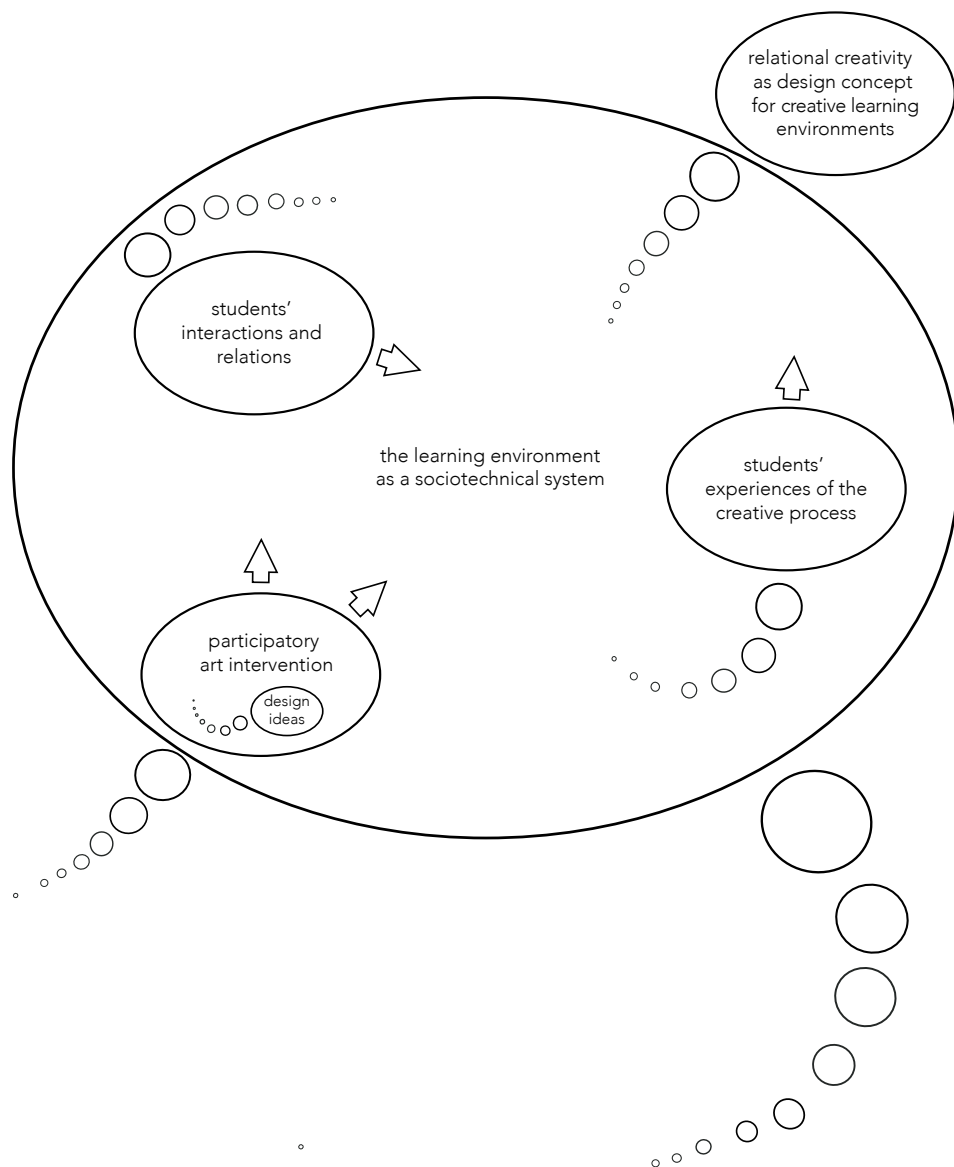


Figure 0.1. Conceptual model of the research design

RESEARCH AIMS

In this thesis I investigate creativity from a sociorelational perspective, with and through participatory artistic practices. The aim of the thesis is to develop theory about relational creativity as a design concept for creative learning environments. The background story is that, during my previous practice as an artist, working with participatory art projects, I noticed that there seemed to be a connection between participants' increased creativity and their engagement in participatory art practices. I started to think of this phenomenon as *relational creativity*. In this thesis, I further investigate the connection between participatory art and relational creativity, through a grounded theory analysis of my design and implementation of two participatory art interventions in regular university education. In this sense, one could also say that the aim of the thesis is to investigate the correlation between the question: *What can participatory art do for higher education?* and my notion as a reflective practitioner that the answer might be: *Relational creativity*.

Research design

The conceptual model of the research design (figure 0.1) provides an overview of the researched situation and of what is studied. In the model, the participatory art intervention enters into the space of the learning environment. When the participatory art intervention enters the learning environment it starts to influence the learning environment as a sociotechnical system.

In the model, the intervention influences the participating students' interactions and relations with each other and with other actors in the learning environment. Students' interactions and relations then subsequently influence their experiences and understandings of the creative process. In the thesis I will describe and visualize how the participatory art interventions influenced the participating students'

interactions and relations and investigate in which ways this subsequently influenced students' understandings of the creative process, and their experiences of the learning environment as a creative space. This part of the research design is connected to the aim of studying creativity from a sociorelational perspective and to investigate the connection between participatory art and relational creativity.

In the conceptual model of the research design, I have marked out design ideas as inherent in the participatory art interventions. In the thesis I will investigate important ideas and concepts which have informed my design of the participatory art interventions, from a situated knowledges and a reflective practitioner's perspective, to unfold ontological and epistemic beliefs as well as practice based tacit knowledge. This part of the research design is connected to the aim of developing theory about relational creativity as a design concept for creative learning environments.

OVERVIEW OF THIS BOOK

This book contains a doctoral thesis based on my previous research and development work as an artist-in-residence in university education. The writing of the thesis as well as the research and development work have been performed as open-ended, explorative processes. This book will present the process as well as the results of my progressive inquiry aiming to develop theory about relational creativity as a design concept for creative learning environments. In the book, this quest has been divided into two major parts, one contextual investigation and one practice-based investigation. In reality, the research process started with the empirical investigation, where I designed and implemented participatory art projects in higher educational practice as an artist-in-residence. In this book however, the initial practice-based investigation is not presented until the second part of the book, in chapters five and six, after the first four chapters in which I investigate and contextualize ideas and concepts inherent in my research design.

Part I: Four essays contextualizing the research

The first part of the book is devoted to a theoretical investigation where I reflect upon important ideas and concepts emerging from my design of the participatory art interventions. The study is performed from a *situated* (Barad, 2003) *reflective practitioner's perspective* (Schön, 1983), investigating the inherent ontology and epistemology of my research design. This contextual investigation has taken the form of four essays, conducted from an interdisciplinary perspective, where I contemplate upon ideas and concepts which have emerged as central for my research process, to draw a map of my theoretical and methodological knowledge network. In the first chapter's essay I will contextualize and define the concept of relational creativity from an interdisciplinary perspective of global educational policy for sustainable

development, creativity research in psychology, design theory, media studies and *arts-based research* (Frayling, 1993). In chapter two's essay I will self-reflect upon my role as an artist-in-residence and problematize the act of conducting participatory art as educational development work, in relation to artistic freedom and through the perspectives of *relational aesthetics* (Bourriaud, 2002) sociology, participatory design and *design for learning* (Wenger, 1998).

The essays in chapter three and four are dedicated to searching for functional methodological ways of combining social scientific research ideals with artistic practices, as in arts-based research, to support innovative educational development work. In chapter three's essay I will look for a way of conducting a social scientific progressive inquiry which includes artistic practices, to be able to work with *wicked problem-solving* processes (Rittel, (2010 [1972]), in researched situations which can not be clearly defined in advance. This inquiry is performed by comparing historic roots of *pragmatism* (Dewey, 1982[1938] et al.) with *design reasoning* (Rittel, 2010 [1988]), *grounded theory* (Glaser & Strauss, 1967) and contemporary *educational design research* (McKenney & Reeves, 2012). In chapter four's essay I will imagine the research process as a logical-creative process, and discuss methods and procedures which could support a researcher's conscious as well as unconscious creative problem-solving processes. In this methodological essay I also contemplate upon possible ways of extracting *tacit knowledge* (Polanyi, 1983[1966]) from my own practice, as a reflective practitioner and from a *situated knowledges* (Haraway, 1988) perspective, through grounded theory and *actor network theory* (Latour, 2005). The ontoepistemic investigation performed in the four essays of various theories, methodologies and practices influencing my design ideas, is connected to the aim of developing theory about relational creativity as a design concept for creative learning environments.

Part II: Theoretical development grounded in practice

In the second part of the book I will introduce the empirical foundation for constructing grounded theory about relational creativity as a design concept for creative learning environments, central to this thesis. The practice-based investigations of two participatory art interventions that will be presented in chapters five and six are oriented towards capturing educational processes and closing up at what is happening in-between students as actors and other actors in the learning environment as a *sociotechnical system* (Trist & Bamforth, 1951). To visualize processes taking place over time the empirical chapters will firstly draw out the storylines of the participatory art projects as rich, descriptive and visualized narratives, including anonymized raw data, my focused coding and reflective practitioner's comments. I have deliberately avoided to analyse what is going on in the learning environment while describing the interventions. The idea behind this choice is to avoid jumping to conclusions and rather just *follow the actors* along the storyline, to let them play out their events (Latour, 2005). Whereas constant comparative procedures of grounded theory (Charmaz, 2006) fragment the empirical story, drawing out a storyline according to actor network theory (Latour, 2005) like this, can serve as a way of putting the pieces of data back in line again, to *reassemble* the story. Each of the two empirical chapters is then concluded with an analysis, where I visualize in which ways the participatory art interventions affected the participating students' interactions and relations and investigate how this subsequently influenced the students' experiences and understandings of their creative processes. In these two concluding analyses, I will also discuss how the participatory art intervention in each case affected the learning environment as a sociotechnical system. This research approach is connected to the aim of studying creativity from a sociorelational perspective and investigating the connection between participatory art and design for relational creativity.

In the seventh and final chapter I will outline the foundation of a theory about relational creativity as a design concept for creative learning environments. I will first reconnect back to the findings emerging from the concluding analyses of the two participatory art interventions in the previous empirical chapters. The motive is to compare important ideas and key concepts deriving from both interventions and investigate how these may match, overlap or contradict each other, aiming to construct a first version of a mid-range grounded theory about relational creativity as a design concept for creative learning environments. To outline the foundation of the theory, I have constructed four design concepts for relational creativity, which are intended to work as a bridge between the empirical study and the development of theory. The four design concepts are so to say presented both theoretically and empirically, because I refer back to vivid examples of key issues and ideas emerging from the study of the two participatory art interventions, while outlining the design concepts. With this research approach, where I present theory along with rich examples reconnecting to the situated practice, I hope to contribute with new knowledge that will be easy to make use of in the practice of design for creative learning environments.

I N T R O D U C T I O N

PART I

FOUR ESSAYS
CONTEXTUALIZING
THE RESEARCH

RELATIONAL CREATIVITY

C R E A T I V I T Y

1.

CREATIVITY AND
RETHINKING EDUCATION

CREATIVITY AND FUTURE EDUCATION

Whereas moral courage is the righting of wrongs, creative courage in contrast, is the discovering of new forms, new symbols, new patterns on which a new society can be built. Every profession can and does require some creative courage. In our day, technology and engineering, diplomacy, business, and certainly teaching, all of these professions and scores if others are in the midst of radical change and require courageous persons to appreciate and direct this change. (May, 1975, p. 22)

Today, we are still in the midst of those radical changes, which psychologist Rollo May referred to half a century ago in his classic work *The courage to create* (May, 1975). In this sense every profession still requires creativity in some form, because we need professionals who are courageous and creative, to handle the radical social and environmental changes of our globalized world. Education of professionals in all disciplines could therefore benefit from knowledge about how to encourage students' development of creativity. Creativity plays an important role in all of the eight key competences for life-long learning listed by the European Union (2006; 2012). Creativity is also explicitly inscribed as an important part of several of these key competences such as the digital competence, the social and civic competences, appreciation and expression of culture along with initiative and entrepreneurship. Creativity is thus one of the key themes applied throughout the European Union's reference framework of key competences, together with critical thinking, initiative, problem solving, risk assessment, decision taking, and constructive management of feelings. These themes and competences, are described as a combination of knowledge, skills and attitudes which our future citizens need to be able to adapt flexibly to the challenges of our rapidly changing and highly interconnected world (EU, 2006).

Skills include also the ability to relate one's own creative and expressive points of view to the opinions of others and to identify and realise social and economic opportunities in cultural activity. Cultural expression is essential to the development of creative skills, which can be transferred to a variety of professional contexts. (EU, 2006, p. 7)

The European Union's reference framework for life-long learning (2006) relates the key competences to personal development, aiming for citizens to develop a successful life in a knowledge society, where the theme of creativity is closely related to entrepreneurship and to social and cultural achievements. In the United States, similar educational goals have been listed in the *Partnership for 21st century skills*, such as creativity and innovation, critical thinking and problem-solving, communication and collaboration (Robinson, 2015). In the European Union's (2012) educational agenda, creativity is regarded as an important personal competence which is crucial for citizens to develop, along with entrepreneurship and cultural competence, to be better prepared for the unpredictable labour market and rapidly changing society of today.

Individualized creativity

In the field of cognitive psychology, intelligence tests have been developed to measure what is referred to as *intelligence* and, for similar purposes, creativity tests have been developed to measure what is referred to as *creativity* (Eysneck, 1995). The validity of defining *intelligence* and *creativity* in relation to such intelligence and creativity tests, focused on measurability, have however been discussed. Educational researcher and psychologist Howard Gardner has suggested that instead of intelligence in singular, we should talk about intelligences in plural, as *multiple intelligences* (Gardner, 1993; 2004). Such multiple intelligences could be expressed as for example spatial intelligence, musical intelligence, linguistic intelligence, logical intelligence or interpersonal intelligence (Gardner, 1993). With creativity tests, creativity has been investigated as a personal trait or skill of an individual, as I see it, partly because creativity or intelligence as a trait or skill of an individual is what seems possible to measure from a positivist research perspective. I find it interesting that the ambition to

measure creativity or intelligence, also seems to lead to a certain way of thinking about and understanding those concepts.

Creativity and real-life achievements

The results of a creativity test must be verified by the test person's comparable creative real-life achievements to become scientifically valid as indicators of the test person's creative ability (Eysneck, 1995). There are however limits to the validity of such a cross-checking operation between an individual's real-life achievements and the creativity test results. The creative skills measured in the test may not be expressed in the test-person's real-life achievements, for example because of sociocultural factors, which are highly influential of people's choice of careers (Csikszentmihalyi, 2014; Gardner, 1982; 1993). Eysneck (1995) argues that creativity as a psychological trait appears in all people to variant degrees as *originality*, but that creativity as *achievement* in real-life is rare. The logic of this argument is that, a person may appear as creative according to a creativity test, but that same person may not be creative in a productive sense. The tested person might only be unproductively *original* or even psychotic, and only by cross-checking with real-life achievements can we verify the creativity test results.

Originality by itself is not enough to be considered creative; much more is required in addition. A psychotic person's responses are original, in the sense of unusual, but they are hardly creative; they lack relevance. (Eysneck, p. 37)

In a recent study of creativity, where researchers' have studied creativity through family trees based on a large-scale statistic data, a correlation between creative professions among some family members and psychotic disorders among other family members have been verified (Kyaga, 2014). This correlation indicates, according to the author, that the genetic prerequisite for creativity, when studied as a genetically inheritable trait may be expressed as the ability for achievement in creative professions, but may also be

expressed as psychic illness, causing problems to cope with life. (Kyaga, 2014).

The creative process

Similar to how creativity has been studied from an individualistic perspective as a trait or a skill, creative processes have mainly been studied as processes taking place within individuals. Historically, within the field of psychology, the creative process has hypothetically been explained as a dialectic process, involving a mind shift between conscious and unconscious engagement (Wallace, 2014[1929]; May 1994[1975]; Csikszentmihalyi 2008[1990]; 1992) et al.). In many of these theories of how the creative process works, the individual's conscious process of striving to solve a problem, is thought of as being supported by a parallel, unconscious process. According to this explanatory model of the creative process (Wallace, 2014[1929]; May 1994[1975]) we engage both our conscious reasoning and our unconscious mind in a kind of dialogue, during a creative process. This dialogue between the conscious and the unconscious is, according to this theory, regarded to be the most successful when our conscious problem-solving efforts are repeatedly contrasted with relaxation and breaks, and as we deliberately choose to do something entirely different.

In the case of the more difficult forms of creative thought, the making, for instance, of a scientific discovery, or the writing of a poem or play or the formulation of an important political decision, it is desirable not only that there should be an interval free from conscious thought on the particular problem concerned, but also that the interval should be so spent that nothing should interfere with the free working of the unconscious or partially conscious processes of the mind. (Wallace, 2014[1929], p.42)

The idea here is that we can engage the unconscious mind to work for us by starting up the creative process and then taking breaks, intentionally to make space for the unconscious parts of our brain to continue the problem-solving process. This creative process will, if we are successful, finally lead to an experience of insight.

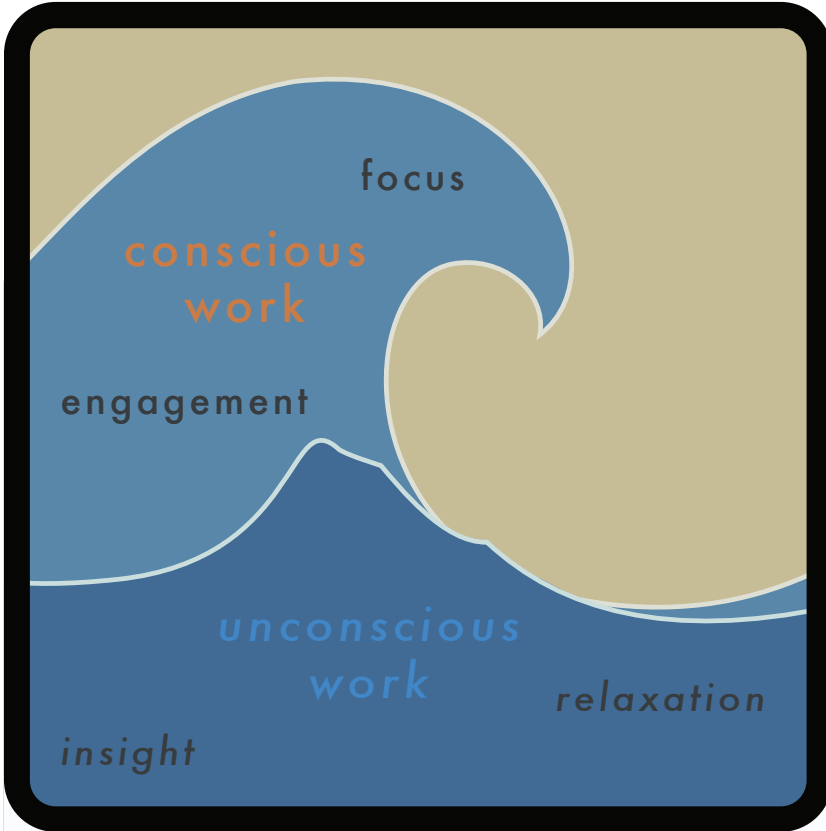


Figure 1.1. Illustration of our dialogic conscious and unconscious problem solving process

But insight often cannot be born until the conscious tension, the conscious application is relaxed. Hence the well known phenomenon that the unconscious breakthrough requires the alternation of intense, conscious work and relaxation, with the unconscious insight often occurring, as in my case, at the moment of the shift. (May, 1975, p. 62)

These theories of creativity as a dialogic process, where unconscious parts of our brain are activated through a more intuitive and unconscious form of engagement, I see as connected to more recent cognitive studies of how our brain functions, and to theories of tacit and embodied knowledge (Lakoff & Johnson, 2003[1980];

Polanyi, 1983). The creative process of the individual has been studied and hypothetically explained in scientific research as well as in popular science, in the latter with the ambition to help us better understand and make use of our everyday creativity. A well known example of this is psychologist Michail Csikszentmihalyi's (2008[1990];1992) conception of creativity as *flow*. According to this explanatory hypothesis, creativity expressed as flow usually occurs when a person needs to activate all of his or her skills to the very limit of what he or she is capable of, to solve a problem or master a task. Flow then occurs when the person succeeds in doing so, as an expression of an adequate balance between competence and challenge (Csikszentmihalyi, 2008[1990];1992).

CREATIVITY AND RETHINKING EDUCATION

Creativity as a key theme in the European Union's (2006; 2012) educational agenda is closely connected to preparing citizens for facing the uncertainties of our rapidly changing society through personal development, cultural engagement and entrepreneurship, which has been manifested in programs like *Creative Europe* (EU, 2012). In contrast to this, creativity as a key theme in UNESCO's educational agenda of '*Rethinking Education*' (UNESCO, 2015) is more connected to preparing future citizens for global complex problem-solving, aiming for a sustainable social and environmental development of our future world, from a holistic, planetary perspective (Morin, 1999). Education is central for initiating societal changes, however, the idea of developing creativity and problem-solving competences of future citizens, implies a radical rethinking of education from the perspective of complexity, which Edgar Morin proposed for UNESCO in *Seven complex lessons for future education* (Morin, 1999).

The unexpected surprises us. Because we are too safely ensconced in our theories and ideas, and they are not structured to receive novelty. But novelty constantly arises. There is no way we can predict it exactly as it will occur, but we should always expect it, expect the unexpected.

And once the unexpected has happened, we must be able to revise our theories and ideas instead of pushing and shoving the new fact in an attempt to stuff it into a theory that really can't accommodate it. (Morin, 1999, p. 11)

Rethinking education in this sense, involves revising our theories and ideas as well as rethinking our ways of organizing knowledge, in light of a renewed vision of sustainable human and social development (Delors, 1996; 2013; Tawil & Cougoureux, 2013; UNESCO, 2015). Educational goals for enhancing creativity and complex problem-solving competences of future citizens' in our globally interconnected society is in this respect, a major part of UNESCO's educational policy for sustainable development.

The purpose of education must therefore be revisited in light of a renewed vision of sustainable human and social development that is both equitable and viable. This vision of sustainability must take into consideration the social, environmental and economic dimensions of human development and the various ways in which these relate to education: An empowering education is one that builds the human resources we need to be productive, to continue to learn, to solve problems, to be creative, and to live together and with nature in peace and harmony. (UNESCO, Rethinking Education, p. 32)

Complex educational goals related to citizenship, like the EU's key competences in the life long learning program (EU, 2006) or citizenship goals, such as *the four pillars of learning to know, learning to do, learning to live together and learning to be*, acknowledged to former European Commission president Jaques Delors' (1996), are hard to evaluate. To be able to assess such goals we need to study and validate the educational processes, rather than just evaluate the results as quantitative outcomes of education (Biesta, 2010).

The rise of a culture of performativity in education - a culture in which means become ends in themselves so that targets and indicators of quality becomes mistaken for quality itself - has been one of the main drivers of an approach to measurement in which normative validity is being replaced by technical validity (Biesta, 2010, p. 13)

In UNESCO's (2015) rethinking education report, this problem of education being too focused on measurability is targeted as a major

challenge for rethinking education. This is because when we focus our evaluation of education on large-scale quantitative tests and on measurable results of individuals - which are exceptionally easy to conduct with today's digital technology - we miss out on other important aspects of educational research results, like the impact and outcomes of educational processes.

While the assessment of the effectiveness, efficiency and equity of educational systems can be approached through more readily available quantitative data, assessing the relevance of educational processes, their outcomes and impact, is much more challenging (Tawil & Cougoureux, 2013, p. 6).

The results of measuring learning achievement with large-scale tests mainly provide information about how educational systems meet particular kinds of individualistic educational goals. For example, educational goals related to how well individuals have learned subject content, can easily be measured, whereas other important curriculum goals, related to citizenship such as developing critical and ethical judgement, understanding democracy, complex problem-solving abilities and creativity, are much harder to evaluate and therefore risk to be overseen in educational practice (Tawil & Cougoureux, 2013). In this respect, educational research easily misses out on or steers away from investigating more complex, sociorelational correlations and causations of what is going on in the learning environment. The attempts to raise educational standards through measurability also leads to traditional one-way communication when it comes to teaching, rather than promoting collaborative work between students, it also leads to favouring formal written examinations rather than portfolio work, peer assessment and other approaches which are not so easily quantifiable (Robinson, 2015).

In terms of teaching, the standards movement favour direct instruction of factual information and skills and whole-class teaching rather than group activities. It is sceptical about creativity, personal expression, and nonverbal, nonmathematical modes of work and of learning by discovery and imaginative play, even in preschool. (Robinson, 2015, p. 12)

The learning environment regarded as a *complex, adaptive system* (Robinson 2015, et al.) causes a major challenge when it comes to researching *causation* in education and of course, it is even harder to explain and predict why a certain design of such a system, would function the way that we intended (Morrison, 2008). Even so, I argue that this is a worthy challenge for educational research, trying to map out what is going on in the learning environment as a system, to design for, and study, processes, interactions and relations rather than just measuring the outcomes of already established forms of education.

WHAT IS RELATIONAL CREATIVITY?

I define *relational creativity* as a *fluent state which can emerge both within and in-between individuals involved in problem-solving processes, where there is no given answer to be found. Relational creativity can in this sense be defined as a temporary condition within and in-between individuals, a fluent condition which is influenced by social relations and interactions which the individuals are involved in during their creative processes.*

When I started to search for corresponding theories and definitions of relational creativity, what I had in mind was that I would simply do a literature review on the topic of relational creativity, within the existing field of creativity research. However, I soon realized that I had to widen my field of investigation to be able to present relevant studies, which were in some respects related to my topic, because creativity has mainly been studied from an individualistic perspective within this field, as already mentioned earlier in this chapter. The definition of creativity in this field is however often verified with reference to real-life achievements and social recognition, serving as a kind of visual evidence proving that the individual is truly creative.

Creativity defined by social recognition

To verify the creativity of the individual measured with tests, a cross-checking of creative real life achievements, such as inventions or important new contributions to a cultural field, has to be performed. What is interesting here, is that to be validated as creative, the individual's creative achievements have to be legitimized within the field or discourse, to which that person belongs. In this respect one could say that, whether the individual is defined as creative or not, partly depends on the social recognition from peers in a professional field or a cultural context, something which I suggest could be regarded as a sociorelational factor. This definition of creativity, as supported by real-life achievements which are acknowledged within a certain field, is the foundation for Eysneck's definition of creativity, already presented earlier in this chapter. In the *systems model of creativity*, creativity is verified in a similar way, in relation to the social recognition from other people, through an *idea or a product that is original, valued and implemented* (Csikszentmihalyi & Wolfe, 2016, p. 162).

What we call creativity always involves a change in a symbolic system - a change that, in turn, will affect thoughts and feelings of other members of the culture. A change that does not affect the way others think, feel, or act will not be creative. Thus creativity presupposes a community of people who share ways of thinking and acting, who learn from each other and imitate each other's actions. (Csikszentmihalyi & Wolfe, 2016 p. 167)

The systems model proposes that creativity occurs at the interface of three subsystems: the individual, the social field and the cultural domain. In this model of creativity, the individual makes a variation of what is already known within a specific cultural framework, and if this change is judged to be valuable by the field it will be incorporated into the domain. The social recognition of creativity in the systems model is, as I see it, not far from Bourdieu's (1992; 2000) description of *the rules of art*, explaining how the *avant garde* could become accepted and incorporated as part of the established field of art as knowledge production. Interestingly, in the systems model

of creativity, Csikszentmihalyi & Wolfe (2016) also provide a potential explanation for why it is difficult to incorporate creativity in a formal school system. This is because in a creative process the aim of the activities is to innovate, contribute to and improve the common content of the knowledge field, whereas in a schools system, the aim of the activities is simply just to replicate existing knowledge.

This perspective immediately makes clear why schools and creativity are inimical. In a creative process, the point is to innovate the content of the domain in such a way that the field will deem the innovation better than what existed before. But in schools, the point is for the students to replicate the content of the domain as closely as possible, without deviations. The teachers' task is to ensure conformity with prior knowledge, without even trying to evaluate whether the students' deviations might be 'better' than what is written in the text books. (Csikszentmihalyi & Wolfe, 2016 p. 167)

Creativity is defined in a similar way by developmental psychologist David Henry Feldman, who claims that creativity must be verified via social recognition in real-life, for example as a tangible, novel and purposeful contribution to an existing field of knowledge.

I use the term creativity here to mean the purposeful transformation of a body of knowledge, where that transformation is so significant that the body of knowledge is irrevocably changed from what it was before. This kind of transformation can be accomplished conceptually, as in the case of proposing a new theory, or by making new products or representations, developing new technologies, or proposing innovative practical techniques. (Feldman 1994, p. 86)

Similar definitions of creativity, as verified via social acknowledgement can be found among other prominent creativity researchers such as cognitive scientist Margaret Boden (1994). Boden defines three types of creativity. Firstly, combinational creativity which involves generating unfamiliar and interesting combinations of familiar ideas. Secondly, exploratory creativity which involves using existing stylistic rules or conventions to generate novel structures. The third type of creativity is transformational and leads to a reaction which Boden refers to as *impossibilist surprise* (Boden, 2010, p. 72). Transformational creativity alters as I see it, the rules of the game, as it changes the

defining dimensions of the style or conceptual space, so that new structures can now be generated which could not be generated before. In all of these cases, the outcome of creativity must in some respect make sense to the current community of practice, or research field, to be acknowledged as creative.

Creativity involves coming up with something novel, something different. And this new idea, in order to be interesting, must be intelligible. No matter how different it is, we must be able to understand it in terms of what we knew before. (Boden, 1994, p.117)

This definition is however also problematized by Boden herself (2004[1990]) who refers to Kuhn's concept of *revolutionary science* (Kuhn, 2012 [1962]) when she admits that, sometimes the novel idea brings about a conceptual change which is so radical that it challenges the interpretations of previous systems and is therefore not recognized as in not understood, as creative.

Everyday creativity

The popular science part of creativity studies often engages in questions of how to enhance creativity in workplaces, and how to develop our abilities in entrepreneurship. Here, the definitions of creativity are more connected to the notion of everyday creativity. It seems to me that when the definition of creativity comes closer to everyday life, and leaves the sphere of geniality and scientific inventions, definitions start to acknowledge the social dimension of creativity. In a blog post under the heading of: *4 ways to amplify your creativity*, business researcher Bruce Nussbaum (2013) suggests that we should map out how our creativity is affected by activities and relations that happen in our everyday life, like places we often visit and people we choose to spend time together with. According to linguist Noam Chomsky, language is in itself creative, and in this respect perhaps one could say that we are more or less creative everyday, simply by the way we interpret and construct new meaning from information, through the use of language.

Normal use of language is not an exercise of any habit or skill. Typically, our use of language is creative, in that sense that it constantly involves the production and interpretation of new forms, new in the experience of the language user or even in the history of the language. (Putnam & Chomsky, 1994, p. 328)

Relational technology and participatory art

When I started to think about creativity as relational, I was inspired by the concept of relational aesthetics (Bourriaud, 1992) which was a conceptualization of the participatory and relational art of the 1990s. The relational aspect of creativity corresponded with my own experiences of art schools and of participatory and relational art encounters. However, the experience which really sparked the idea of relational creativity was what happened between art school students in a virtual environment which I had designed for a course in relational aesthetics, as a guest teacher. I asked the students to upload a process documentation of their on-going art projects each day in a blog which I had designed to work as a social media platform. The creative activity in the group increased, and something happened in-between the students which seemed to be connected to the fact that they had extended access to experiencing each other's creative processes. After this incident, I started to think of creativity as relational, and when I interviewed girls who were photo-blogging, my notion of the importance of the sociorelational aspects of creativity was further confirmed, as well as the relational aspects of new technology (Morén, 2010; 2012). The creativity and internet researcher David Gauntlett (2011) talks about internet platforms, as frameworks for supporting a creative community of participation and communication.

People use YouTube to communicate and connect, to share knowledge and skills, and to entertain. They use the community features of the site to support each other and engage in debates, and to generate the characteristics of a 'gift economy'. (Gauntlett, 2011, p. 95)

From the experiences of social media platforms as frameworks for participation, Gauntlett (2011) proposes a new understanding of

people's everyday creativity as a process, emotion and presence and suggests that the drive for this everyday creativity is the happiness that this making and sharing brings to people connected in a creative community. Informal peer-to-peer learning in creative environments on the Internet is often structured in alternative ways, as networks, in contrast to traditional hierarchically organized educational systems (Siemens, 2005; Dunkels & Lindgren, 2014; Selander & Kress, 2010). Research on creative learning processes in Swedish schools, highlight that there is also a participatory potential in formal creative learning environments (Lindström, 2006; 2012; Marner, 2010; Kress & Selander, 2012). In his writings about the value of portfolio work, Lindström (2006) suggests that creativity should be understood not as a private, individual process, but rather as a continuous movement in a social and cultural context, back and forth between the personal creativity and the reflective contemplation on the works of others.

Creativity is not as private and individual a process as we often imagine. It is always part of a social and cultural context. Looking for models to emulate, and finding links between them and one's own work, is a highly active and complex process. This type of cultural influence should not be counteracted in school, as often used to be the case. On the contrary, it should be encouraged and appreciated, since the conditions for creative work are considerably improved if the student constantly intersperse her own work with observations of other people's works and reflection upon what can be learned from them. (Lindström, 2006, p. 63)

Creative learning environments, in this sense, have the potential to be participatory and relational environments, where students can become inspired by each others work. When professional artists were invited to work with schools in a large-scale creative pedagogy project in the United Kingdom, they designed a learning environment for pupils and students to become involved, for inclusion and sharing and collective creation rather than for individualism and competition (Hall & Thomson, 2016).

The emphasis was on involvement, collective creation and sharing rather than on individuation and competition. Even when work was individualized, the collective endeavour was, for example, to construct

a studio environment where art practice flourished. There was a weaker sense of the hierarchy of achievement than there is in many other lessons and a stronger sense of collective accomplishment. (Hall & Thomson, 2016, p. 9)

Participatory art involves sociotechnical design of learning environments which facilitate for participants to actively create, interact, share and contribute to a common work of art and knowledge. I argue that, because of this, participatory artistic practices, applied in educational research (Irwin & O'Donoghue, 2012; Jokkela et al., 2015; Thomas, 2015; et al.) have the potential to provide us with information about creative learning environments as relational systems.

2.

PARTICIPATORY PRACTICES IN ART AND DESIGN

PARTICIPATORY ART

Since the 1990s, various forms of relational art, participatory art, socially engaged art, collaborative art and community art have been increasingly popular as alternative practices, complementing other research and development methods in education (Desai & Darts, 2016; Irwin & O'Donoghue, 2012; Göthlund et al., 2015; Jokkela, 2013; Jónsdóttir 2015; Thomas, 2015; Paatela-Nieminen, et al. 2016; et al.). The openness for participation, collaboration and social engagement within such contemporary art practices have contributed to their expansion to fields outside of the fine arts' scene.

Contemporary creative practices, that is, conceptual, performance and installation, could all be thought of in terms of social relations, as opposed to the modernist notion of individual genius, and within this broad configuration these social/relational practices have specific features that have developed in relation to contemporary social conditions, such as digital technologies, social media and globalisation (especially migration/diasporas), for the creative exploration of subjectivity in the postmodern globalised context of uncertainty and cultural instabilities. (Adams & Owen, 2014, p. 22)

Participatory art could, be regarded as an art form which embraces social relations before individualism, which is interested in art as an investigation of social relations, and which does not promote the idea of the artist as a solitary genius (Adams & Owen, 2014). Participatory artistic practices have also been used in social and health oriented research and development work (Tolia-Kelly, 2010; Huhmarniemi, 2012; Kallio-Tavin, 2013; Kester, 2011; Ulkuniemi, 2009; et al.). Contemporary artists have been engaged in various large-scale societal development projects around Europe during the last decades. These projects have involved development of communities and schools (EU, 2013; Hall & Thomson 2016; Blomgren & Lindqvist 2016), where the projects supported by the European Union often have had an ambition of developing creativity as a competence of European citizens (European Commission, 2013). These kinds of large-scale contemporary art projects, supported by

official funding, are often directed by local governments, museums, universities or other organizations, who have contributed to and/or initiated the process of applying for funding. The organisation in charge of the project, then commonly engages artists to perform various forms of socially oriented art projects, for example projects under the funding umbrella of *Creative Europe* (European Commission, 2013)

Participatory art and relational aesthetics

When art curator Nicolas Bourriaud (2002) conceptualized participatory art, socially engaged art, collaborative art and community art as relational art within the concept of *relational aesthetics*, participatory art had already been introduced as an artistic expression among artists of the 1990s fine arts' scene. The concept of participatory art was used to describe artistic practices where artists invited ordinary people to contribute to their artworks. An artist could for example invite people from the local community to contribute to an art installation with their private photographs or participate in a performance. In relational aesthetics, including participatory art, the focus was not on the artwork as a product, but as a process - a socially engaged collaborative process where artists invited the participants in meaning-making. Relational aesthetics was defined by Bourriaud as an aesthetic theory, which validates artworks on the basis of the inter-human relations they represent and produce. Relational art was described as a set of practices which take human relations and their social context, rather than an independent, private space, as the point of departure (Bourriaud, 2002, p. 112-113).

Meetings, encounters, events, various types of collaboration between people, games, festivals, and places of conviviality, in a word all manner of encounter and relational invention thus represent today aesthetic objects likely to be looked at as such, with pictures and sculptures regarded here merely as specific cases of production of forms with something other than a simple aesthetic consumption in mind. (Bourriaud, 2002, p. 28)

The relational and participatory art encounters of the 1990s fine arts' scene manifested in various ways, for example as festivals in urban spaces, experimental social games, cooking workshops, performances or happenings and became a popular part of European art festivals like Documenta in Kassel, Germany or the Venice Biennale in Italy. The most significant common factor for relational aesthetics was that the art events invited and engaged the audience to take part in the discussion, in the creative process, and in the production of art and knowledge. Bourriaud (2002) described the artworks within the concept of relational aesthetics as diverse, original in expression, form, materiality but sharing a common core of social communication and interaction. Relational aesthetics can in this sense be regarded as an artistic activity, primarily engaged in staging and investigating human relations and social practices.

Every artist whose work steams from relational aesthetics has a world of forms, a set of problems and a trajectory which are all his own. They are not connected together by any style, theme or iconography. What they share together is more decisive, to wit, the fact of operating within one and the same practical and theoretical horizon; the sphere of inter-human relations. Their works involve methods of social exchanges, interactivity with the viewer within the aesthetic experience being offered to him/her and the various communication processes, in their tangible dimension as tool serving to link individuals and human group together. (Bourriaud, 2002, p. 43)

The diverse artistic methods for staging and performing social exchange and interactivity within the aesthetic experience of relational aesthetics in the 1990s was innovative and novel. However, artistic practices which engage the audience in interaction and co-creation of artworks was not a new phenomenon in fine arts, such inter-human art practices had developed through various art movements during the 20th century. Participatory artistic practices can be traced back to the conceptual and performance art of the 1960s, to Situationism in the 1950s or to Dadaism in the 1920s (Kester, 2011; Bishop, 2006).

The conflict between ethics and aesthetics

Since the concept of relational aesthetics was coined in the 1990s, diverse participatory artistic practices have continued to grow in various arenas, within established contemporary art museums, in large-scale organized exhibitions as well as through socially engaged and activist art, independently financed or sponsored through governmental projects for societal development. The artistic expressions deriving from participatory art, relational art, socially engaged art, community-based art or collaborative art have been debated by art curators and critics from the perspective of a potential conflict between ethics and aesthetics, between artistic freedom and social engagement (Bourriaud, 2002; Bishop, 2004 and 2006; Kwon, 2002; Kester, 1998 and 2004). In this debate, the criteria for evaluating the aesthetic quality of the various forms of relational and participatory art was questioned by art critic Claire Bishop (2006).

This expanded field of relational practices currently goes by a variety of names: socially engaged art, community-based art, experimental communities, dialogic art, literal art, participatory, interventionist, research-based, or collaborative art. These practices are less interested in a relational aesthetic than in the creative rewards of collaborative activity, whether in the form of working with pre-existing communities or establishing one's own interdisciplinary network. (Bishop, 2006, p. 179)

Bishop (2006) claimed that many of the artists were less engaged in the aesthetic value of their participatory art than they were in the rewards of the collaborative activity itself, and that this attitude among artists as well as curators, was a threat to the quality of relational aesthetics. Throughout this debate Bishop has defended the freedom of art, as in the sovereignty of the artist and the artistic expression and has for example, claimed that fine art must not be openly political, or activist, only indirectly engaged and critical as in interpretable provocations, otherwise there is a risk that the artworks are reduced to political propaganda (Bishop, 2009).

When confronted by socially engaged art projects of the type you describe above - projects that aim to release the 'creativity' of (often

disenfranchised) communities through photography, painting, theatre, cooking, or other workshops - it is often hard to respond to these events with anything other than moral approval. The same can be said for art projects that directly research and/or criticise social policy, gentrification, globalisation, etc. These projects are often praised for providing a 'good model', but on an aesthetic level they blindly repeat tired formulae, while the results of research-as-art are invariably less useful than a book or report on the subject. In short, such projects tend to be worthy, but dull. (Claire Bishop interviewed by Barok, 2009, p.2)

The socially engaged art projects are difficult to evaluate or criticize from an aesthetic point of view, as they have an overarching good cause, which generates automatic moral approval, as a sort of alibi. From Bishop's perspective as an art critic, this becomes problematic, as the aesthetic criteria are at risk of being overseen.

For Bishop, art can become legitimately political only indirectly, by exposing the limits and contradictions of political discourse itself (the exclusions implicit in democratic consensus e.g.) from the quasi-detached perspective of the artist. This detachment is necessary because art is constantly in danger of being subsumed to the condition of consumer culture, propaganda or "entertainment" (cultural forms predicted on immersion rather than a recondite critical distance). (Kester, 2011, p. 32).

From this perspective, the detachment of the artist is regarded as necessary to be able to maintain a sort of artistic objectivity, a critical distance from where the artist will not be subsumed into producing entertainment or propaganda instead of art.

The artist-as-designer

Another question raised in this debate is whether participatory art projects produced by art institutions provide opportunities for this artistic freedom, or if such events are constrained by invisible regulations. The idea of the *artist-as-designer* was introduced in this debate by Bishop (2004) to raise the question about to what extent artists were directed by the financing organisations and the curators' expectations.

An effect of this insistent promotion of these ideas of artist-as-designer, function over contemplation, and open-endedness over aesthetic resolution is often ultimately to enhance the status of the curator, who gains credit for stage-managing the overall laboratory experience. As Hal Foster warned in the mid-1990s, "the institution may overshadow the work that it otherwise highlights: it becomes the spectacle, it collects the cultural capital, and the director-curator becomes the star." (Bishop, 2004, p. 53)

The *artist-as-designer* is an artist who is no longer central for the act of creation, but rather commissioned as a designer, to initiate an event or a process for a client who is in charge of the production. This could for example be a curator representing an art institution, for which the artist has engaged to produce a work or art.

Who is in charge of participatory art?

Relational art financed within institutions in the field of fine arts is, according to Kester (2011) at risk of being regulated by the invisible rules of the art world, e.g. stating that if relational or collaborative art projects become too openly political or connected with political activism outside of the white cube, the artworks will no longer be considered as fine art, but as political propaganda. The reasoning behind the fear of art becoming too politically engaged, is, as I interpret Bishop (2006, p. 179), that art risks losing its sovereignty while becoming a tool for political organizations or activists, who will prioritize their political quest before the freedom of art and of the aesthetic expression. This argument, which comes from curators representing fine arts institutions, can be turned the other way around, claiming that, when art is run by fine art institutions, art is at risk of being regulated both by the invisible rules of the fine arts world and by commercial rules as well. This is due to the fact that big art biennales have become tourist attractions, with an audience that does not only consist of art knowers, but of ordinary people in need of cultural guidance. As a result of this, the relational or collaborative art projects are staged as a theatrical play with a manuscript that doesn't allow the participants to contribute to the

production of the art work, as ideas or as knowledge, in a legitimate way.

It is for this reason, I would suggest that a number of Bourriaud's relational projects retain an essentially textual status, in which social exchange is choreographed as an a priori event for the consumption of the audience "summoned" by the artist. In addition to naturalizing deconstructive interpretation as the only appropriate metric for aesthetic experience, this approach places the artist in a position of adjudicatory oversight, unveiling or revealing the contingency of systems of meaning that the viewer would otherwise submit without thinking. In short, the viewer can't be trusted. (Kester, 2011, p. 32).

What I see as really crucial in this debate are the controversies which occur between ethics and aesthetics, which is highlighted as the conflict between the aesthetical quality criteria and the ethical validity of relational art projects, and how these conflicting interests may affect both the artists, the artworks and the participants of the participatory art projects. The arena of exchange, where the participatory art project is performed, must be evaluated according to the aesthetic criteria, however, at the same time take the social world and the human relationality which it re-presents into consideration, as I interpret Bourriaud (2002).

Depending on the degree of participation required of the onlooker by the artist, along with the nature of the works and the models of sociability proposed and represented, an exhibition will give rise to a specific "arena of exchange". And this "arena of exchange must be judged on the basis of aesthetic criteria, in other words, by analysing the coherence of its for, and then the symbolic value of the "world" it suggests to us, and of the image of human relations reflected by it. (Bourriaud, 2002, p. 18)

Who is in charge of the aesthetic quality criteria, and who takes part in deciding if the participatory project qualifies as a contemporary fine arts project? Kester (2011) asks these questions and continues to question who is in charge of the epistemic quality criteria and the evaluation of which forms of knowledges the project should deliver - and who is responsible for the ethical considerations of the experiences of the participants invited to take part in the project.

What constitutes "art" at this historical moment, and what are its constituent or defining conditions? A second set of questions concern the epistemological status of this work. What forms of knowledge do collaborative, participatory and socially engaged practices generate? These questions have come to the fore in recent debates over the differentiation of "aesthetic" and "ethical" criteria in the evaluation of artistic production. (Kester, 2011, p. 10)

The question of who is in charge of defining what participatory art and relational aesthetics might be - and what it might not be - leads further on to questions about the rights of participants to contribute in the production of art and knowledge in a legitimate way. These are questions about which degree of freedom the participants are trusted with, to actively engage in, and contribute to the creation of art, design and knowledge, and to which extent this freedom of participants' creative expression will be constrained. The limitation of both the artists' and the participants' freedom of artistic expression could for example be related to different forms of expectations from various stakeholders involved in the project, such as curators representing museums who are in charge of the financing, or, as in my case, educational institutions with specific expectations of how the participatory art projects are supposed to be performed as well as of the outcome of the projects.

MY COMMISSION AS AN ARTIST-IN-RESIDENCE

The participatory art projects which serve as the empirical foundation for this thesis, were conducted as artistic development work in higher educational practice. This took place during a commission which I was employed to do for four years, as an artist-in-residence for a Swedish University. At that time, the use of artistic practices for enhancing creativity and entrepreneurship in schools had become of national interest in Sweden as well as in Scandinavia, following the development in other European countries according to the European Union's education policy (EU, 2013). During the same era, artistic research was growing and was receiving an increasing

interest and support from the Swedish Government, which resulted in an increased official recognition of art and design as research, as well as funding for such enterprises (Lind, 2011; 2012; Lilja, 2015). In this specific case, a Swedish University had dedicated part of the funding for a larger project of educational research and development work, to support development work with artistic practices. The University department where I was employed as an artist-in-residence was educating students in subjects like music, visual arts, crafts and graphic design with an emphasis on teacher education. The department expected me to create art projects in which students and staff were engaged, working with artistic practices such as relational and conceptual art, including digital tools and new media.

The commission of the artistic associate professoriate includes developing the artistic visions of the department and involving one's own artistic work in the activities of the department. (From the employer's announcement of the position, my translation from Swedish.)

The department had specific expectations, not only what the artist-in-residence commission should result in, but also how it should be performed. On the one hand, the artist-in-residence was expected to result in conceptual development of the institution's artistic visions, on the other hand, I was also expected to involve my own artistic practice in the everyday activities of the department. This practical part of the commission was quite clearly stated.

For the position in visual arts, we are looking for an artist who works with contemporary art, relational and or conceptual art, preferably in modern media. It is an advantage if the artist already works with art in project form, involving different groups of people, youth groups for example, and if the applicant has experience of publicly communicating his or her works or projects. (From the employer's announcement of the position, my translation from Swedish.)

According to the employer's job description, I was expected as an artist-in-residence to work with my own contemporary art practices together with groups of students and staff, to use digital tools and new media and to communicate the results of the art projects

publicly. Due to the particular specifications concerning the expected results as well as the expected performance of the artist-in-residence, I had to adapt, mix and invent practices and methods from art, design and social science. One possible way of comprehending the aims and goals of this commission is that the department aimed for new artistic educational visions and practices to be developed by the artist-in-residence, visions and practices that were to be informed by contemporary art, like relational art and conceptual art, digital tools and new media. The artist-in-residence commission, when put to practice, would then be to invent and create new artistic educational visions and practices which were adapted to and could be integrated with the current educational visions and practices of the department. When I started the commission for the university department, I had several prior experiences of being an artist-in-residence in schools and for companies. I was in this sense already familiar with managing expectations from various stakeholders in Swedish projects financed by local governments (Konstfrämjandet, 2011; Marner & Örtengren, 2008 et al.), as well as in several projects funded by the European Union, and in the Swedish version of *Creative schools* (Myndigheten för kulturanalys, 2013; Blomgren & Lindqvist 2016). The residency at the university was however different from my previous commissions as an artist-in-residence in some important respects. Whereas the previous commissions had lasted for a time period of six months or even shorter, the residency at the university was a four years project. In the previous residencies I had worked with short-term goals, where I had been expected to deliver an artistic process and a product as a kind of cultural quick-fix. I had, however, not been expected to work with developing the visions or the systems of the organisations involved. In contrast to this, the university had long term aims and goals, where I was expected, as an artist-in-residence to produce both art and knowledge which could contribute to the department's further development as an educational organisation.

Reflections on the artist-in-residence and the artist-as-designer

The following text was transcribed from a video recorded reflection-on-action where I captured my stream of thoughts as I was thinking aloud about my role as an artist-in-residence, while working with participatory art practices as educational development work.

Sol in video recording: As an artist, you may be hired or sponsored or financed by some kind of institution, it could be an art museum or a biennale, a EU project, a community based development projects, an educational institution or something like that. When you take on such a commission, and this also involves doing a work for an art biennale which is also a sort of commission, you're regulated by some kind of dominant discourse and the question is - who owns the project? If I use the concept of recontextualisation, what will happen to the art work is, that it will be recontextualised into another discourse. The risk when you recontextualize something, following Bernstein (1996), is that you will loose some of it's most important core content. Drawing on what Bishop (2006) points out and exemplifies, when art is recontextualized into another discourse, it will be regulated by that another discourse, this could be a pedagogic discourse or a socially engaged discourse. Then the aesthetic values and the aesthetic criteria become impossible to judge, because the art work is socially engaged in a way that makes it a 'good thing', so it has an ethical engagement and a moral defence of being 'good' for the people participating and for a good purpose. So art becomes purposeful - and it's no longer possible to evaluate it from an aesthetic criteria. Because, and then I presume that Bishop (2004) refers to Kant's (1781) argument, that art has a purposeful uselessness. Being useless in a purposeful way (as I see it) means that art doesn't have to be inscribed in an explanatory framework. Following this argument of art loosing it's purposeful uselessness will lead on to the idea of the artist becoming a designer.

What I argue is that the artist has to take on the role of a designer and have to let go of the essence of art, which is the uselessness, the purposeful uselessness. And it is the uselessness makes art interpretable, an item that you design should not be interpretable, because you want the user to understand how to operate your item that you have designed. It doesn't really matter if it is a product design or a social design, you don't want too much interpretability in the design, because then people will become confused, and you will not be able to fill the purposeful goals and expectations of your

stakeholders, of your participants, of your users. When art is inscribed in and commissioned to something, and this also goes for the fine art world, because you have to live up to certain expectations if you're going to exhibit in a major art exhibitions like any of the big biennales. Using Bourdieu's (2000) theory of cultural fields, one could say that there is a field that is regulating your art work. This is how I interpret the debate between Bishop and Kester, and I argue that both of them are right. Kester (2011) is right that the fine art world regulates the art work when the artist signs up for or is sponsored by a major art institution, a curator will direct your art to some extent, and you will still have some freedom as well. A similar situation occurs if the artist signs up for a EU-project, or, as in my case, a development project for a university, a community and so on, you will not have the same freedom as an artist, as if you were working in your studio without this kind of engagement, or alliance. Depending on how this regulation works, in my case I had to take on the role of a designer as well as an artist, and Bishop is also right in this sense about this phenomenon of artists becoming artist-as-a-designers. The core problem is that you are no longer producing art, because you have lost the essence of artistic freedom when you have lost the purposeful uselessness of art, because when you have lost the openness for interpretation. However, for me, it is not a problem to admit that, okay, in some situations I can be an artist and in many other situations I have to become an artist-as-designer, not really doing art anymore, but using artistic practices for other purposes. However, I'm also investigating what these artistic practices involve - what are they constructed of - how do they operate? Because when I move relational or participatory art practices into an in-house research situation in university education, this recontextualisation can also function as a situationist detournement (Debord, 1968) as a strategy for investigating something by moving it into another context. So in this sense recontextualisation can also be an artistic method of investigating situations and practices, and this is how I've used it.

Following the logic of my discussion in the recorded monologue quoted above, I propose that I designed participatory art projects, which were then implemented as participatory design interventions. The commission which I undertook as artist-in-residence at the university, led me into a negotiation, where I had to take both the aesthetic quality criteria and the ethical concerns for the participants as co-creators, co-learners and co-producers of knowledge into consideration, while designing the participatory art projects.

In relational creative practices, social engagement is the dominant feature, and it is possible to view this as above all means to enable encounters and interactions at the expense of more traditional, modernist concerns with and aesthetic qualities. Aesthetics and formalism continue to play an important role in creative practices but to be relational the practice must provide a vehicle for social encounters, real or imagined. (Adams & Owen, 2014, p. 23)

The question of who is in charge of the participatory art project and who has the right to contribute to and influence the production of art and knowledge, of participants' right as contributors and of artistic freedom and authorship leads further into the field of participatory design, where such issues are of equal importance to discuss as in the field of contemporary art.

PARTICIPATORY DESIGN

Participatory design emerged from the people's rights movements at work places in the 1960s and 1970s, and could in this respect be compared to the parallel development of socially engaged art during the same time period, such as politically engaged performances and happenings which were also influenced by the diverse expressions of the people's right's movements, and which often had a participatory character. Interestingly, the participatory design approach does not expect to deliver consensus among the different participants as a result of the participatory process, rather this approach allows for controversies and conflicts to emerge as a result of the process of negotiation and meaning-making, something which is similar to a participatory art approach. Participatory design is, simply stated, defined as the right for those affected by a design to have a say in the design process (Ehn, 2008).

Participatory design has its roots in movements towards democratization at work in the Scandinavian countries. In the 1970s participation and joint decision-making became important factors in relation to work places and the introduction of new technology. Participatory design started from the simple standpoint that those affected by a design should have a say in the design process. This was

a political conviction not expecting consensus, but also controversies and conflicts around an emerging design object. (Ehn, 2008, p.94)

Participatory design, in this sense, has the ambition to involve the end users as participants in the process of designing the tools, machines or systems which these users are going to work with. In practice, this means involving the people who are going to be affected by the design or use the design in the decision-making process, something which can take many forms, such as testing and evaluating design prototypes together with users during certain stages of the design process, or involving users as co-designers through the whole design process. Participatory design refers to a direct involvement of people in a collaborative design process, driven by the people who will be affected by the design of the technology (Simonsen & Robertson, 2014)

The Scandinavian approach to systems design

The Scandinavian approach to participatory design was built on ideas of work place democracy and of taking social and technological issues of design into consideration, simultaneously during the design and implementation of a new technology at a work place. The ideas of integrating social and technological issues into the process of design decision-making, was inspired by the findings of a research project which resulted in a proposal for a sociotechnical approach to system design (Trist & Bamforth, 1951). The sociotechnical approach was founded in the results of research by Trist and Bamforth (1951), on the social and psychological consequences for British coal mine workers in relation to the introduction a new technological work system. The conclusion in this study was that the design and implementation of a new technology could bring about radical and unexpected change to the social structure of a workplace. This unforeseen change of the work place's social structure would then subsequently cause such major problems for the workers, that the benefits of the new technology was overshadowed by the negative effects caused by the change in the

social structure. The sociotechnical approach to systems design (Trist & Bamforth, 1951) was further developed in the *Scandinavian approach to system design* (Bannon & Ehn, 2014).

Participatory design grew out of a concern about how design could support resource-weak groups when information technology was introduced to the work place. It also meant a clear positioning of the designer in controversies regarding how the design was implemented in use. (Ehn, 2008, p. 99)

In the Scandinavian version of the sociotechnical approach to systems design, the ideas of integrating social and technological issues in the design process was further developed in practice, via the idea to involve the end users in the design process, that is, through the use of participatory design methods (Bannon & Ehn, 2014). This version of participatory design was, as already mentioned, influenced by ideas from the workers' rights movements in Scandinavia, which had resulted in increased co-decision-making at workplaces. The Scandinavian approach developed in the era of computerization of work places in the 1980s, where the main task for the designers in charge of implementing the new technology was to support workers in understanding the way that computers and applications worked (Simonsen & Robertsen, 2014). In this early development of participatory design practices, the ideas of co-decision making was taken further in the design and implementation of the digital technology. Design of digital technology is unique as part of an industrial endeavour, as I see it, when it comes to the possibilities of allowing users to participate in the process of design and implementation. Compared to the possibilities to make changes in industrial machines based on hardware mechanics, it must have been fairly easy to reprogram one pre-programmed computer machine to transform into another kind of machine from an end user's perspective. In this sense, digital technology, as I understand it, also allowed for, or afforded for the participatory design involvement of the people who were going to use the computer machines at their work places.

Design of knowledge systems

Teaching and learning came to play an important role in the participatory design process of the new digital technology. Because the end users were the ones who were going to have to learn how to operate the new digital systems, participatory design included the collaborative development of user interfaces of such systems.

Participatory design was, in the first instance, about designing information technologies that would allow people to change and further develop their work practices to incorporate both the use of computer systems and improved work conditions. Its roots in the workplace democracy movement meant that those whose new work practices were being designed were centrally engaged in the process. (Simonsen & Robertson, 2013, p. 4)

The Scandinavian development of sociotechnical systems design involved a participatory design approach, which from the beginning was more about learning processes, as in finding ways of making users familiar with the new computer systems that were being installed at their workplaces, while adapting the computer systems to that particular workplace. However, according to the Scandinavian approach 'design was seen as the design of knowledge systems' (Bannon & Ehn, 2013, p. 43) where the designers had the ambition, also to turn things around by making the systems more flexible and changeable according to the users' preferences. Since the initiation of participatory design in connection to the digitalization of workplaces in the 1980s, participatory design has been further developed and influenced by for example, action research and user-initiated networking practices on the Internet (Simonsen & Robertson, 2013). Participatory design has been applied in various fields of practice, for example in: game design (Danielsson Öberg, 2010; Larsen & Majgaard, 2016); interactive art (Seevinck, 2017); crafts (Lindström & Ståhl, 2014; 2015); education (Emmanouil, 2015; Packer, 2012; Öberg & Hernwall, 2016); democracy and political decision making (DiSalvo, et al. 2013; Hansson, K. et al. 2015).

DESIGN FOR LEARNING

Learning cannot be designed. Ultimately it belongs to the realm of experience and practice. It follows the negotiation of meaning; it moves on its own terms. It slips through the cracks; it creates its own cracks. Learning happens, design or no design. (Wenger, 1998, p. 225)

Learning can not be designed for, it happens anyway, everyday throughout our whole lives. Learning is inherent in human nature, it is a continuous psychological, physical, neurological activity which is an integrated part of our everyday lives (Wenger, 1998; Bowlby, 1988; et al.) Still, as I have already claimed in the introduction of this thesis, my ambition is to contribute with new knowledge about how social relations and interactions affect the creative processes of students, to support design for creative learning environments. We cannot design learning, because learning is the outcome of a process, the change which we experience as individuals or as a group, a change as a result of many different factors or actors which have affected the process, where some can be influenced by our design attempts whereas others can not. There are few more urgent tasks than to design for social infrastructures which provides affordances for learning, according to learning researcher Etienne Wenger, who continues to write the following, after the text I just quoted in the introduction of this paragraph:

And yet, there few more urgent task than to design social infrastructure that fosters learning. This is true not only schools and universities, but also of all sorts of organizations and the public and private sectors, and even of entities usually not called organizations, like states and nations. In fact, the whole human world is itself fast becoming one large organization, which is the object of design and which must support the learning we need in order to ensure there is to be a tomorrow. (Wenger, 1998, p. 225)

When I talk about design for creative learning environments, I refer to Wenger's concept of design for learning, which was developed from ideas of situated learning, legitimate peripheral participation and communities of practice, previously developed in collaboration with ethnographer Jean Lave (Lave & Wenger, (2005[1991])). I have

decided to refer to design for creative learning environments, rather than design for creative learning. This is because I find it more appropriate to imagine designing a space for making art rather than to design for learning, because, as I see it, you learn by making art, and to design primarily for learning instead of designing for making would be counter-productive.

Communities of practice

The perspective on design for learning which Wenger represents, originates in research on informal learning systems, which are structured less hierarchically, and more like networks than learning systems based on traditional academic models. Design for learning was defined by Wenger (1998, p. 228) as a way of organizing time and space for a specific goal, which involves social design and which is both systemic and planned for, yet reflexive.

1) One can make sure that some artefacts are in place - tools, plans, procedures, schedules, curriculums - so that the future will have to be organized around them. 2) One can also make sure that the right people are at the right place in the right kind of relation to make something happen. (Wenger, 1998, p. 225)

The theories about situated learning, legitimate peripheral participation and communities of practice were based on long term observations of informal learning systems, where many of these systems proved to be structured in an unexpected way (Lave, 2011). The transmission of knowledge was not hierarchically organized under a teacher or a master, rather, participants learned from observing other participants, which were themselves at various stages of learning to master skills within the community of practice. Design for learning is a widespread concept today, however, I use the term in the same sociorelational respect, as it was originally conceptualized by Lave & Wenger (2005[1991]).

Learners' agency to design their own learning

Design for learning in educational researchers Staffan Selander and Guther Kress' version, is a concept covering the design of social processes, physical resources and technical prerequisites with consideration to a specific curriculum, aiming to create affordances for learning (Selander & Kress, p. 24). The learner in this version of design for learning, is involved in a continuous process of interpretation, transformation and representation of the affordances for learning. In this sense the learner has also a certain amount of agency to re-design these affordances, within the learner's own learning process (Selander & Kress, 2010). This potential agency of learners to re-design their own learning processes, as I see it, depends on how well these learners can realize the *recognition* and *realisation rules*, to be able to decode the curricular context (Bernstein, 2000, p. 17) within that specific learning environment in which they are positioned. When the learner successfully has decoded the curricular context and thereby created a space for agency within the learning environment, this facilitates for the process of interpretation, transformation and representation to be successful, where the results can be recognized as legitimate signs of learning according to Selander and Kress (2010, p. 25). In this respect, a successful process of learning from a design for learning perspective, can be considered as an act of agency, where the learner as an agent also re-interprets, transforms and re-presents not only information, but also the affordances for learning.

The participatory potential in design for learning

Design for learning can not be based on a division of labour between learners and nonlearners, Wenger claims (1998, p. 234), it can not be divided between those who organize learning and those who realize learning, referring to how the participants in a community of practice are involved in designing their own learning.

Whenever a process, course, or system is being designed, it is thus essential to involve the affected communities of practice. (Wenger, 1998, p. 234)

The community of practice could in this respect be regarded as a community, which bases its learning system on the practice of participatory design. Design for learning is, however, an interpretable concept which has the potential of being participatory, still, there is no guarantee that design for learning will be implemented as participatory design in educational practice.

A SOCIOTECHNICAL PERSPECTIVE ON DESIGN

I will conclude this chapter by returning to the famous case study of the British coal mine industry by Trist & Bamforth (1951). This study is being referred to as the origin of the sociotechnical design perspective from which the practices of participatory design then was further developed. In this study, the researchers came to the conclusion that the social design, which came along with the new technology was a factor which had been overseen in the design of the system.

It seems to the present writers, however, that a qualitative change will have to be effected in the general character of the method, so that the social as well as the technological whole can come into existence. (Trist & Bamforth, 1951, p. 37)

The social design was based on ideas of how to structure production to increase the productivity in 1800th century factories for mass production. When those assembly-line concepts were transferred to the mining situation, it caused a radical negative change to the social situation of the workers. The change in the social system affected the workers' social relations, where they previously had worked in partnership teams, being responsible for one another. It also changed their identity as masters of a craft which had taken years to learn, and it took away their freedom to evaluate the working conditions and the power to decide when it was safe to

work or not. The social system was changed so that the workers now became separate units in a production line where they lost both their influence and responsibility over working conditions, which also resulted in more accidents despite a safer technology.

These interactive technological and sociological patterns will be assumed to exist as forces having psychological effects in the life-space of the face-worker, who must either take the role and perform a task in the system they compose or abandon his attempt to work at the cole-face. (Trist & Bamforth, 1951, p. 5)

What is still interesting today with this example, is that the investment in new technology did not have the expected outcome in increased productivity, and this was not because technology failed. The improvement plan failed because the way the production was re-organized did not improve the workers situation from a social perspective, on the contrary, it virtually destroyed the former system which was built on craftsmanship, agency and strong social relationships between workers as teams. One can wonder, if this change in social design from craftsmanship to assembly-line production would have been possible to implement without the new technology as an overshadowing argument for better working conditions?

The learning environment as an actor network

The social is entangled with the technology in a work place situation as well as in an educational situation. Educational researchers Tara Fenwick and Richard Edwards suggests that actor network theory can be used in educational research to open up for new questions by looking at the ordinary entities in the school setting as networks and assemblages.

ANT's language can open up new questions and its approaches can sense phenomena in rich ways that discern the difficult ambivalences, messes, multiplicities and contradictions that are embedded in so many educational issues. (Fenwick and Edwards, 2001, p. 1)

To analyse complex situations in education, like design for learning or the learning environment, and perhaps even say something about influential ideas and concepts in the design, we need to be able to capture important information about what is happening in the interactions and relations in-between different actors. In this thesis I use the metaphor of an actor network (Latour, 2006) to facilitate for mapping out interactions and relations in-between different social and technological actors in the learning environment. To understand what is going on in such messy, real-life situations, we need to find ways of mapping the technological actors, the social design as an actor and perhaps even the ideology underpinning that design. And we need to follow the controversies of the actors in the real life environment where the system is implemented. What is involved here is not only the design of technology or the design of how production should be performed, but the ontological and epistemic beliefs inherent in those design concepts. When new technology and social design is implemented simultaneously, unpredicted outcome may appear and to be able to make sense of such situations, I propose that we need to work with progressive and process oriented research methods, along with participatory art and design practices.

3.

PROGRESSIVE INQUIRY

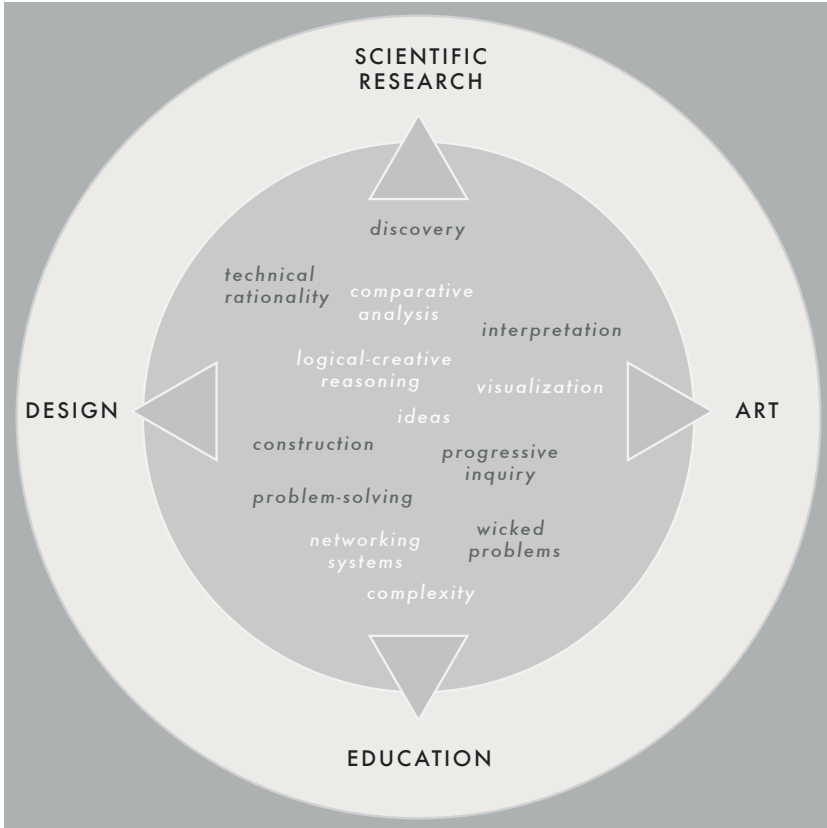


Figure 3.1. Interdisciplinary compass

The illustration above (Figure 3.1) was inspired by a compass, where the fields of education, art, design and scientific research have replaced the points of the compass. The illustration was constructed as a navigation tool, to map out some of the methodological concepts discussed in this, and in the following chapter. The concepts placed in the middle of this metaphoric compass, provide an example of how I have played around with positioning their locations, within the intersection of the four research fields, which I cross over in this thesis.

THE DETERMINING OF A GENUINE PROBLEM IS A PROGRESSIVE INQUIRY

Artists and designers are trained to solve problems rather than just studying them. Accordingly, the engagement in a research and development project for an artist or a designer might start with making tangible proposals for possible solutions, represented as sketches, models and prototypes. These tangible proposals for possible solutions may then serve as tools for further researching the problem or the situation in need of improvement. Art and design projects can be regarded as processes of iteration, starting with the artist or designer more or less immediately coming up with suggestions and almost simultaneously trying them out as ideas, to find out what works in real life, or in a simulated situation close to the real life problematic situation in focus of the investigation. The problem-solving approach to research and development work in art and design appears to be close to the formulation of social research as a *progressive inquiry* proposed by psychologist John Dewey in the early years of pragmatism.

Statement of a problematic situation in terms of a problem has no meaning save as the problem instituted has, in the very terms of its statement, reference to a possible solution. Just because a problem is well stated and on its way to solution, the determining of a genuine problem is a progressive inquiry; the cases in which a problem and its probable solution flash upon the inquirer are cases where much prior ingestion and digestion have occurred. (Dewey (1938) in Thayer, 1982, p. 323)

The epistemic roots of progressive inquiry, might, be traced back to the informal conversations about social research for change, that went on for several years between John Dewey and George Herbert Mead. Whereas Mead, with an interest in lecturing on social psychology and in doing socially engaged research, published less than Dewey, he still had a great influence on Dewey and further also on the development of pragmatism (Strauss foreword about Mead, in Mead & Strauss, 1956).

Science is occupied with finding what the problems are that exist in the social processes. It finds what the problems are, what processes have been definitely checked. Then it asks: How can things be so reconstructed that those processes which have been checked can be set going again? Now, how are we to get ahead and change those situations that need changing and yet preserve the security of them? (Mead, The problem of society, in Mead & Strauss, 1956, p. 22)

Mead indicated the need for a new kind of approach to research, a research engaged in social development, aiming to make a change. This new kind of socially engaged research, which Mead proposed, required new research methods that could be useful for practical problem-solving, process based research. within a Where the research process for social change, according to Mead ideally should be *incorporated into the order of society itself*. But how were these changes to take place, how could these new ideas be implemented in practice?

To bring about change is seemingly to destroy the given order, and yet society must change. That is the problem, to incorporate the methods of change into the order of society itself. (Mead, The problem of society, in Mead & Strauss, 1956, p. 21)

In 'The problem of society' Mead (Mead in Mead & Strauss, 1956) described a new way of looking at societal problems, as problems that can not be determined in advance. Such seemingly insoluble problems cannot be determined in advance, because the problematic situation demand a problem-solving process with open ends. In such an open-ended process the researchers may be well on their way, still, they would have to accept the fact that they don't yet know, where they are heading.

You see this is an advance in which we cannot state the goal toward which we are going. We do not know what the goal is. We are on the way but we do not know where. And yet we have to get some method of charting our progress. We do not know where the progress is supposed to terminate, where it is going. This is a seemingly insoluble problem. (Mead, The problem of society, in Mead & Strauss, 1956, p. 22)

To continue a research process without a clear goal or even a proper determination of the problem to be solved, would be a courageous

enterprise for the researchers, and Mead proposed that the researchers needed some kind of new method to support their process, to enable them to follow through with their enterprise. This new method supporting a progressive inquiry in social science, was then further elaborated with and developed in Dewey's work and presented as his well-known theory of *inquiry*.

Progressive inquiry in art and design

I have chosen to use the term *progressive inquiry* to describe my research approach, where the term progressive inquiry comes from one of Dewey's formulations of the social research process as a process of inquiry, as mentioned earlier, because the concept of progressive inquiry goes well with Mead's formulation of an open-ended research process without prior determination of the problem, and where a progressive determination of the problem is necessary. The problem, so well stated by Mead, of not really knowing in advance what the goal really is, or where we are heading in the process of research and development work, I see as typical for the open-ended creative processes of arts and design.

In the context of artistic research, artworks are the generators of that which we do not yet know. They thereby invite us to think. Artistic research is the articulation of unfinished thinking. (Borgdorff, 2014, p. 194).

Design is the ability to imagine that-which-does-not-yet-exist, to make it appear in concrete form as a new, purposeful addition to the real world. (Nelson & Stolterman, 2003 p. 10)

The progressive inquiry as well as the pragmatic research approach is connected to real situations and real social problems, where the inquiry includes an aim for social change, and the researcher wants to make a difference in the real life, for the people involved in the problematic situation which awoke the researcher's inquiry. The closeness to the real, and to solving real problems in the real world is, in this respect comparable to research and development processes within the field of design as research (Nelson &

Stolterman, 2003). Pragmatic or progressive inquiry, as described by Dewey and Mead, also resonates with the *comparative analysis and theoretical sampling* of grounded theory (Glaser & Strauss, (2006[1967]; Charmaz, 2006), where these pragmatic ideas were further developed. Pragmatic conceptions of the research process, as a problem-solving progressive inquiry, also serve as a methodological foundation for Donald Schön's notion of the *reflective practitioner* (Schön, 1982; 1987). The problem formulation of progressive inquiry as an enterprise in which we cannot determine the problem in advance, and thus cannot state the goal toward which we are going, has also been further elaborated with, and developed through the concept of *wicked problems* by architect Horst Rittel (1988), all of which I will come back to and discuss in further detail, throughout this chapter.

Progressive inquiry and grounded theory

In grounded theory, the *general method of comparative analysis* (Glasser & Strauss, 1967) can be regarded as rooted in pragmatism, where the procedures of comparative analysis and theoretical sampling matches the emergent development of ideas in Dewey's inquiry, well (Strübing, 2007).

Theoretical sampling is the process of data collection for generating theory whereby the analyst jointly collects, codes and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges. (Glaser & Strauss, 1967 p. 45).

Both methods of inquiry facilitates the progressive development of theory, firstly as vague suggestions, which can be subsequently developed into ideas, or themes through reasoning or memo writing, where the emergent ideas or themes are constantly compared and checked with the empirical data, both during the initial field work and during the following phase of reasoning and developing theory, where the researcher stays close to the field, and remains observant of the *in vivo patterns*, which refers to real life expressions, in the empirical data.

If the data are collected by theoretical sampling at the same time that they are analysed (as we suggest should be done) then integration of the theory is more likely to emerge by itself. By joint collection and analysis, the sociologist is tapping to the fullest extent the in vivo patterns of integration in the data itself; questions guide the collection of data to fill in gaps and to extend the theory - and this is also an integrative strategy. (Glaser & Strauss, 1967 p. 109).

To develop theory that is grounded then becomes an on-going process of reasoning and reality-checking which continues during the whole research project. The process of reasoning in Dewey's inquiry follows a similar path of progression, where ideas first come in the form of suggestions, suggestions which have to be developed and tested through reasoning, to transform into useful ideas.

Because inquiry is a progressive determination of a problem and its possible solution, ideas differ in grade according to the stage of inquiry reached. At first save in highly familiar matters, they are vague. They occur first simply as suggestions; suggestions just spring up, flash upon us, occur to us. They may then become stimuli to direct an overt activity but they have as yet no logical status. Every idea originates as a suggestion, but not every suggestion is an idea. The suggestion becomes an idea when it is examined with reference to its functional fitness; its capacity as a means of resolving the given situation. (Dewey, 1938; in Thyson p. 325)

Progressive inquiry and the reasoning of designers

The process of entangled inquiry where observing; selecting and collecting data; interpreting; making decisions; reasoning; reality-checking; and theorizing takes place *jointly*, at the same time, as described in pragmatism and grounded theory, resembles an artistic or designerly, *disorderly* or *messy* process. In *the reasoning of designers* this process, where sketching, modelling and prototyping parallels a very fast, intuitive process of idea-generation, reasoning and decision-making, all of these activities seem to occur almost simultaneously, and Rittel (1988) proposes that in the design process no clear separation can be made between the activities of problem definition, synthesis and evaluation.

The designer's reasoning is much more disorderly, disorderly not due to intellectual sloppiness, but due to the nature of design problems. There is no clear separation between the activities of problem definition, synthesis, and evaluation. All of these occur all the same time. A design problem keeps changing while it's treated, because the understanding of what ought to be accomplished, and how it might be accomplished is continually shifting. (Rittel, 1988; (2010 [1988] p. 188)

The design problem keeps changing within the design process, because the emergent understanding of what kind of solution that is needed to solve this specific problem, will change the problem formulation. Comparatively, progressive inquiry is also an unstable process, where the determination of a problem is dependent on a real-life, complex, problematic situation. To find a solution for a problematic situation in real life, is what makes the inquiry in both cases meaningful, that is, the connection to the real. In both cases the process of determining the problem needs time to develop, for if rushed, the inquiry can go completely astray:

If we assume prematurely that the problem involved is definite and clear, subsequent inquiry proceeds on the wrong track. Hence the question arises: How is the formation of a genuine problem so controlled that further inquiries will move towards a solution? The first step in answering this question is to recognize that no situation which is completely indeterminate can be converted into a problem having definite constituents. (Dewey, 1982 [1938].)

In art and design, what differs from Dewey's inquiry is the possibility to reality-check some of the emergent suggestions and ideas in practice. The almost instant process of coming up with ideas; making prototypes; and reality-checking; may serve as a short-cut to evaluation and provide the researcher with information about both the solution and the problem. The iterative process of coming up with tangible proposals for solutions and testing them against reality, as in art and design, says something about what needs to be improved for the next version of the prototype, that is, informs about the solution, but when proposed and tested as a solution to the problem, the tangible proposal for a solution will also reveal hidden aspects of the problem itself. I suggest that the *tangible proposal for a solution* in art and design processes, like a sketch,

model or prototype is equivalent to a *tangible idea or a tangible hypothesis*. These tangible ideas or hypotheses can be used as research instruments, for testing and verifying a possible solution, but also for further determination of the problem, as in progressive inquiry.

Researching complex situations causing wicked problems

In many cases, the researcher stands before complex situations of human's social relations and interactions in everyday life, where the problematic situation cannot be properly formulated in advance, or transferred into a research problem. In such complex situations the problem might not even be clearly identified or determined until the problem solving proposal fits the solution of the problem. In a situation like this, the formulation of the problem might even equal the formulation of the solution of the problem, because understanding the problem is not possible before solving it. Much like the insoluble problems that Mead described, which could not be determined in advance, the first property of a *wicked problem*, described by architect Horst Rittel is that this kind of problem has no definite formulation.

The first property is that wicked problems have no definitive formulation. This is a serious objection to the systems approach of the first generation, which has a first step of the box-car train of phases "understand the problem" before you go on solving it. This consideration shows that you cannot understand the problem without solving it, and solving the problem is the same as understanding the problem. But how can you understand the problem if you cannot have sufficient information without solving the problem? (Rittel, 2010[1972], p. 156)

Wicked problems can not be clearly formulated in advance, and in many cases the determination of the problem occurs with the solving of the problem. Tame problems, on the contrary can be determined and formulated in advance. Literally a tame problem can be written down as instructions on a piece of paper and handed

over to someone else, who can then read the instructions and solve the problem without needing any additional information. Tame problems are preferred as research objects before wicked problems according to Rittel, because wicked problems do not easily fit into the scientific models for hypothesis testing for verification of cause and effect in controlled environments.

Most research about creativity and problem-solving behaviour is about "tame" problems, because they are so easily manipulated and controlled. Unfortunately, little is known about the treatment of "wicked" problems or of people actually dealing with them, because "wicked" problems can not be simulated in a laboratory setting. (Rittel, 2010[1972], p. 155)

However, most of our essential problems in society involve human relations and are complex situations causing wicked problems, because of this. In education for example, the planning of education involves sociotechnical planning and design of complex learning situations and learning environments. In this sense, design of education could be understood as wicked problem-solving, which accordingly would benefit from being attended to with a different strategy than tame problem-solving.

HOW CAN WE DESIGN RESEARCH SUPPORT NOVEL THINKING?

The empirical part of this thesis is grounded in two participatory art interventions implemented in educational practice, with the two-folded aim to both research and improve practice. The participatory art interventions were designed and implemented during a period, when I was employed as an artist-in-residence at a Swedish university, to conduct educational development work with artistic practices. I was expected to involve my own artistic practices in the development work, such as contemporary conceptual and relational art, and also to make use of digital tools and new media. The artist-in-residence commission had particular specifications of expected results, as well as of how the development work was to be

performed. The results that the university expected from the artist-in-residence, such as development of novel educational practices involving contemporary art and new media, had little in common with expectations of results of traditional educational research. Because of the particular specifications of outcomes, as well as of how to perform the development work, I had to assemble and invent a suitable methodology, to meet these demands. In this case, the research design would need to support novel thinking, improvement of practice and opening up space for unexpected solutions, yet, in a format that would fit the complex reality of educational practice within a university. The demand for opening up space for novel thinking and inventing new educational practices, made it somewhat complicated for me to use an already established methodology. In this particular case, theory invisibly inherent in the methodology may cause an unintended influence on the research design, which could jeopardize the commission to develop novel thinking and new educational practices.

The risk of theory becoming a bias that hinders novel thinking

Theories are inherent in all methodology, thus theory will in this sense have a major influence on the study via the research project's methods, instruments and tools (Charmaz, 2016; Cohen et al., 2011; Denzin & Lincoln, 2011; Glaser & Strauss, 1967). In this respect, there is also a risk involved that epistemic and ontological beliefs inherent in theory and methodology, unintentionally will transform into biases, which will influence the researcher and limit the potential of novel thinking within the research process.

As we have frequently remarked, researchers often stifle potential insights by virtue of too strict adherence to existing theory, particularly "grand" theory. (Glaser & Strauss, 1967 p. 253).

In some cases theory inherent in methodology can serve as a lens that helps the researcher to focus on a particular subject, whereas in other cases this theoretical lens will diminish what is possible to

explore through the study. In a discussion about constructivist grounded theory as critical inquiry, sociologist Cathy Charmaz exemplifies how theory inherent in methodology can represent itself as a taken-for-granted worldview. In this example, when the inherent belief of *individualism* is adopted into methodology, this will highlight the analysing perspective of the individual as a singular entity, and diminish the analysing perspective of the whole situation, and of the individual as involved in social relations.

I argue that Anglo-North American worldviews, particularly those based on individualism, pervade much of qualitative inquiry and fosters adopted a taken-for-granted methodological individualism. Subsequently many researchers import preconceptions about individualism into their methodologies. They focus on individuals and emphasize the individual level of analysis without excavating the structural contexts, power arrangements and collective ideologies on which the specific analysis rests. (Charmaz, 2016, p. 2)

In some respect, theory is always inherent in all research methodology and methods, risking to become an unintended guiding worldview, invisible to the audience yet directing the show from behind the stage. Because of the risk of theory causing bias, we need new strategies to help researchers become aware of their internalized epistemic beliefs, Charmaz argues, and proposes a methodological self-consciousness, inspired by postmodern feminism, in addition to the constructivist grounded theory practice.

Methodological self-consciousness means detecting and dissection our worldviews, language and meanings and revealing how they enter our research in ways we had previously not realized. Thus, tacit individualism becomes visible. (Charmaz, 2016, p. 3)

Using already established theory can also mislead the researcher to adapt the data to fit into the theoretical framework, in different kind of ways. The choice and design of research tools and methods for gathering empirical data constructed according to a certain theory, with an unintended bias as a result. To take an example from education, taxonomies are criteria for evaluation which were originally constructed as instruments for evaluation of education, both for teachers to evaluate the outcome of education, that is, if

students learnt what they were supposed to learn, and for educational research purposes. However, although taxonomies were instruments constructed for evaluation, in practice they rapidly transformed into guide lines for how to design education.

Taxonomies exist to classify and to clarify, but they also serve to guide and to goad. People rapidly began to use Bloom (and related schemes) as frameworks for designing courses and programs. They used taxonomies to determine if they were putting too much emphasis on knowledge; if they were teaching for comprehension; if they were teaching for analysis or synthesis; if students at the end of a course were able to evaluate and make critical judgements about the relative value of alternative ways of making sense of the world. Quickly then, the taxonomies moved from being a scoring rubric and vehicle for communicating about test items, to being a heuristic for instructional design. (Shulman, 2004, p. 70)

Taxonomies can become ideologies

Well-established taxonomies are often taken for granted and Shulman (2004) points out that there is a risk that such taxonomies, like Blooms etc. become ideologies, because through the process of implementation in practice they become a sort of collective conscience among the practitioners.

This is how taxonomies often work: They become ideologies. A taxonomies rapid progression from analytic description to normative system - literally becoming a pedagogic conscience - warrants caution. Another thin that happens to taxonomies, and it happened to Bloom's, is that they come to be understood as making a theoretical claim about sequentially and hierarchy, suggesting that the only legitimate way to learn something is in this particular order. (Shulman, 2004, p. 70)

Taxonomies can in this sense influence teachers' instructional design, however taxonomies may also influence and bias educational researchers' design of research instruments, and affect how researchers construct their system for collecting data, resulting in, for example, the construction of presupposed categories to match a specific taxonomy. In this case, the taxonomy has transformed from being an instrument for educational evaluation to

becoming a theory that guides and restrains the data collection, resulting in an unintended bias at the very beginning of the research process. In this sense theory inherent in taxonomy categories for evaluation can bias the research process, something which has been described by psychologist Donald Schön in a discussion about technical rationality in design research:

Many practitioners have adopted this response to the dilemma of rigour and relevance, cutting the practice situation to fit professional knowledge. They do this in several ways. They may become selectively inattentive to data that fall outside their categories. Designers of management information stems may simply avoid noticing, for example, how their systems trigger games of control and evasion. They may use "junk categories" to explain discrepant data, as technical analysts sometimes attribute the failure of their recommendations to "personality" or "politics". Or they may try to force the situation into a mould which lends itself to the use of available techniques. (Schön, 1983, p. 44-45)

Research methods, tools and instruments for collecting and analysing data can in this sense be informed by inherent theory, and in some cases restrict the gathering of information, so that data that might have been crucial for a novel understanding of a problem is left out. The theory - or epistemic belief - that there is *general knowledge*, independent of real life learning situations, according to anthropologist Jean Lave, can bias the design of experiments in research of knowledge acquisition.

Knowledge acquisition may be considered (and organized in schools and experiments on cognition) as if the social context of activity had no critical effects on knowledge-in-use. Given this view, it is difficult to see how researchers could do anything but assume away complex relations among social situations, along with the situations themselves. It might be added that experiments, which after all are social situations, reflect and are produced by this theoretical position, for they have no multiple, well-formulated, actor-generated relations with other situations and activities in the lives of their subjects. (Lave, 1988, p. 41)

The conception of design in educational design research

The researcher's conception of the relationship between theory and practice, and which role theory should play in researching and developing practice, will have a strong influence on how the concept of design is interpreted and implemented in research practice. *Educational design research* (McKenney & Reeves, 2012) is a methodology where the aims and goals are to improve practice, a research and development strategy conducted in close relation to educational practice.

Unlike other forms of educational research, educational design research provides a direct link between research and practice, and thus the chances that it will have a meaningful impact are greatly enhanced. (Reeves et. al, 2011, p. 58)

However, there is a distinction between how the concept of *design* is interpreted in *educational design* research compared with art and design based research. This distinction originates in the conception of theory in relation to practice, where educational design research interventions are based on, and constructed from already established theory.

Educational design research engages practitioners and researchers in the creative activity of developing prototype solutions to these and other serious problems, based on existing design principles. Theory almost seems to be an afterthought in many other approaches to educational research, but in educational design research, it plays a primary role in the shaping of prototype innovations that address serious problems. (Reeves et. al, 2011)

The idea that the design process ideally should start with the framing and clear formulation of a problem has consequences for how the problem-solving-process is constructed. If the problem firstly becomes a well formulated problem, then it can easily be researched within a systematic analysing process of first collecting facts about the problem, then making the design proposal based on this rigorous analysis.

Technical rationality depends on an agreement about ends. When ends are fixed and clear, then the decision to act can present itself as an instrumental problem. But when ends are confused and conflicting, there is as yet no "problem" to solve. (Schön, 1983, p. 41)

The design proposal based on technical rationality can then be tested with test groups of users, for example in industrial design as a working prototype, or in educational design research (McKenney & Reeves, 2012), as an intervention. However, a clear formulation of the problem is not always possible, as I have mentioned earlier in the discussion of wicked problems, when the researched situation consists of complex environments involving human relations, then problems can be wicked as in hard to formulate. The research process then, becomes messy.

The dilemma of "rigour and relevance" arises more acutely in some areas of practice than in others. In the varied topography of professional practice, there is a high, hard ground where practitioners can make effective use of research-based theory and technique, and there is a swamp lowland where situations are confusing "messes" incapable of technical solution (Schön, 1983, p. 42)

Educational design research as progressive inquiry

Research and development work based on ideas from the field of design, can be founded in different epistemic beliefs, and accordingly be oriented towards different aims and goals. When the design process is directed by *technical rationality*, then implementing and testing the design proposals primarily aim for verification, as in testing the usefulness of the design proposal in quite a positivistic manner, for verification or falsification. The idea that prototypes should be shaped by theory, is an example of this approach to design. Within a positivist version of educational design research, the design of interventions might be based on so called *grand theories*, that is, theories which are so well established that they are easily taken for granted, for example, currently favoured taxonomies. When such *grand theories* inform the design of research interventions, they also risk influencing and becoming an

invisible part of the understanding and interpretation of the research results, without being questioned or discussed (Lave, 1988).

So suppose we shift the perspective away from a top-down view that looks at the problem as a matter of intervention and design (which too easily inverts its own view to argue that it's actually bottom up because it's all about building a serviceable program from first principles like competency). Instead, let's begin with learners at work, pay close attention to the spatial, contextual relations through which learning work takes place and of which it is part. (Martire & Lave, 2016, p. 259)

Of course, there is always the possibility to make use of unexpected contradictions occurring in the results, while implementing educational design research interventions. Then contradictions can serve as means to critically question and further develop existing theories, with arguments founded on one's empirical research results. When the educational design research process is directed by the acceptance of the complexity of educational practice, then design proposals can become tools for further investigating the researched situation as a wicked problem. The interventions can then become means in the process of formulating the problem more determinant and to be able to go through with the research process, even if the goal is still not clear. In educational design research, either design strategy could be used, the positivist or the progressive strategy, all depending on the researcher's preferences, aims and goals. I have preferred the progressive strategy, as my research aims and goals have been closely connected to developing novel educational practices, within the field of design for creative learning environments.

Mixed methodologies to open up space for novel thinking

Research strategies steaming from different methodological traditions may not always be regarded as compatible, for example an objectivist approach of generating theory through deduction, induction and scientific experiments versus a qualitative, interpretative approach to constructing theory. However, in an art

and design-based research process, artistic experimentation, participation in practice and interpretation of that practice can co-exist.

Research in the arts likewise generally aims at interpreting the particular and unique, but in this type of research practical experimentation is an essential element. Hence, the answer to the question of art research methodology is briefly that the research design incorporates both experimentation and participation in practice and the interpretation of that practice. (Borgdorff, 2012 p. 52)

I think of this artistic research approach and research design as a *mixed methodology*, rather than as mixed methods, because the methods are entangled with each other within the artistic intervention. Artistic and arts-based research design could in this sense be described as crossing over and intersecting seemingly incompatible traditional research approaches. The arts and design-based methodology which I have proposed here, may well be an iterative process, with a starting point in creating a first prototype, as in sketching, modelling and in the making of an art project or a design project. This creative starting point of the research process, contrasts with the theoretical starting point. The theoretical starting point would be to first clearly determine the problem. However, this clear determination of the problem, demands one to have an overview of the whole of the problematic situation, which might not always be possible in practice. The art project or the design prototype can be seen as a *tangible idea*, or an *artistic hypothesis*. The artistic hypothesis differs from a scientific hypothesis and the scientific experiment, as it is not built on already established theory, and does not aim to test the theory for verification or falsification. The artistic hypothesis is a tangible idea, which can be used as a means for further investigating the problematic situation, yet, at the same time, it is also the manifestation of the first tangible attempt to solve the problem. In this sense, the artistic hypothesis may well equal the solution. This iterative, prototyping problem-solving approach which is common in the fields of art and design can be especially useful for research situations where there is a need to develop novel, innovative solutions for complex problems.

The emergent systems thinking compound that constitutes design inquiry and action becomes a world-approach, in distinction to the way the scientific inquiry for description and explanation forms worldviews. An approach is action oriented, while view is passive and noninterventionist. A world-approach, like design depends on the reliability of effective worldviews but is inclined towards taking action as well. (Nelson & Stolterman, 2003 p. 89)

I argue that a progressive inquiry strategy based on art and design practices can be useful for starting up research of complex situations. In my case, researching the complex situation of students' interactions, relations and creative processes in creative learning environments, through participatory art interventions. Complex research situations and wicked problems, demands for us to start thinking in alternative and ways. The use of already established theories and methodologies might not be the best starting point for coming up with novel ideas and innovative solutions. The research design problem which I have been struggling with as an artist-in-residence, is how to find a way of working with an open-ended, messy research process that opens up space for novel thinking and new ideas, yet responds to the demands for rigour and credibility of qualitative social science. To face this problem, I have iteratively constructed a research design, combining relational and participatory practices from art and design with reflective practice (Schön, 1982; 1987), grounded theory (Glaser & Strauss (2006[1967]; Charmaz, 2006; et al.) and actor network theory (Latour, 2006) from a situated knowledges perspective (Haraway, 1991; Barad, 2003). This research design, where art and design practices, which implies art and design thinking, were entangled with social scientific methods in a holistic sense, resulted in a mixed methodology, rather than a mixed methods approach based on the common quantitative versus qualitative dichotomy.

4.

CONCEPTUALIZING PRACTICE

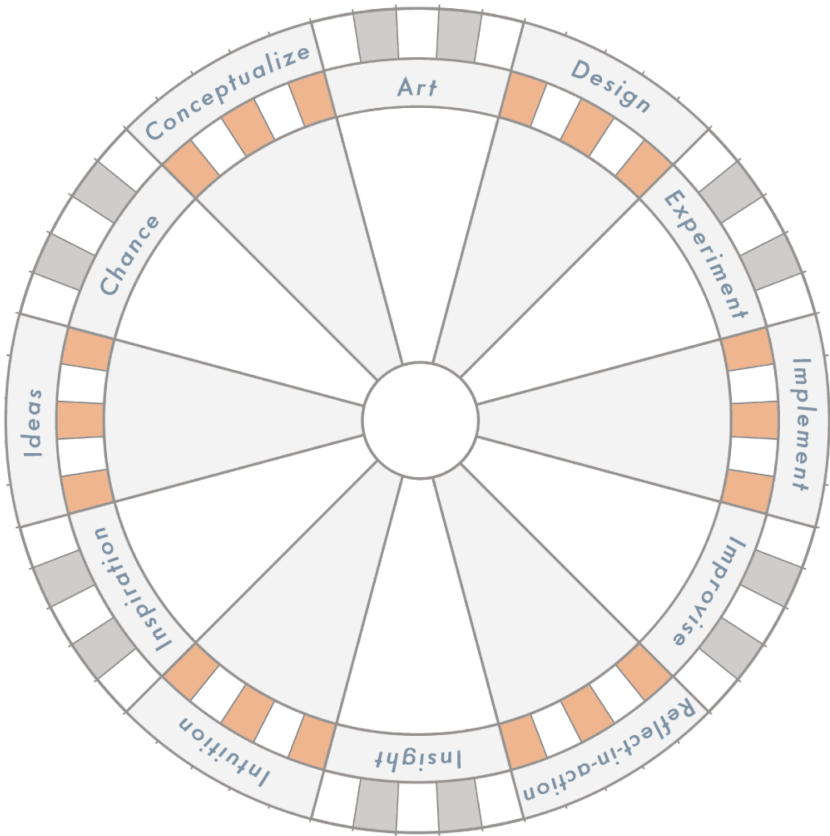


Figure 4.1. Progressive inquiry with art and design practices illustrated as a wheel of fortune - an open ended process which can start from anywhere

The image above (Figure 4.1) shows my idea of a progressive inquiry with art and design, illustrated as a wheel of fortune. The wheel of fortune symbolizes the indeterminate situation of a progressive inquiry, where *the researchers are on their way but do not yet know where they are going* (Mead in Mead & Strauss, 1956). In this model there is *no clear separation between the activities of problem definition, synthesis and evaluation* (Rittel, 1988) and the researcher develops suggestions, sketches, ideas, prototypes, art, design and theory as they emerge.

In the previous chapter I introduced the ideas of research as progressive inquiry based on concepts steaming from a pragmatic research approach to improve practice (Dewey, 1982[1938], Mead & Strauss, 2002[1956]) and mixed with ideas from participatory art and design practices (illustrated in figure 4.1). The two empirically based chapters five and six will provide examples of this progressive research design, when put to practice. The mixed methodology which I have assembled to be able to conduct my research and development work as an artist-in-residence, has also been inspired by ideas from the field of art and design, claiming that theory can be generated from thinking about and reflecting upon practice (Schön, 1983; 1987; Rittel, 2010[1972] [1988]). However, such pragmatic ideas of practice and practitioner's knowledge as a legitimate ground for theoretical development are not self-evident, on the contrary, in scientific research traditions there has been a hierarchical divide between theory and practice, to the advantage of theory.

THE HIERARCHICAL DIVIDE BETWEEN THEORY AND PRACTICE

When it comes to research and development work to improve practice, logically deduced theory has according to positivist traditions been regarded as the superior form of knowledge that should be applied to, or, imposed upon practice, informing how practice should be done (Schön, 1983). If theory, as in theoretical information constructed from logical deduction, is regarded as hierarchically superior to practitioner's knowledge, as in practice and practice based information, a chain of consequences follows from this. The belief in theory as a higher order of information, involves a belief in theoretical deduction and of technical rationality as a higher order of thinking. Consequently as theory is regarded as a higher order of thinking, then theory should inform practice, that is, how to do things the right way. Practice should then, consequently

apply theory, as in making applications informed by and designed from the superior theoretical knowledge.

This concept of "application" leads to a view of professional knowledge as a hierarchy in which "general principles" occupy the highest level and "concrete problem solving" the lowest (Schön, 1893, p. 24)

Knowledge will then, consequently be assumed to flow from rational theoretical deduction towards practice, influencing practice. Theoretical knowledge, within the ideal model of technical rationality, flows in one direction from theory to practice. The risk involved with this thinking-model is that practice will be regarded merely as a place for testing, evaluating and applying hypothetically deduced knowledge, which was never really grounded in practice, from the beginning.

As positivists became increasingly sophisticated in their efforts to explain and justify the exclusivity of scientific knowledge, they recognized to what extent observational statements were theory-laden, and found it necessary to ground empirical knowledge in irreducible elements of sensory experience. They began to see the laws of nature not as facts but as constructs created to explain observed phenomena, and science became for them a hypothetic-deductive system. In order to account for his observations, the scientist constructed hypotheses, abstract models of an unseen world which could be tested only indirectly through deductions susceptible to confirmation or disconfirmation by experiment. The heart of scientific inquiry consisted in the use of crucial experiments to choose among competing theories of explanation. In the light of positivist doctrines as these, practice appeared as a puzzling anomaly. Practical knowledge exists, but it does not fit neatly into positivist categories. We cannot readily treat it as a form of descriptive knowledge of the world, nor can we reduce it to the analytic schemas of logic and mathematics. (Schön, 1983, p. 33)

The epistemic belief in theory as a higher order of knowledge, based on an assumed hierarchical division of theory and practice, has, of course, been questioned and problematized a lot, especially since the post-modern turn. I have already discussed this, in the previous chapter, in relation to the concept of *wicked problems* (Rittel, (2010 [1972])). Wicked problems occur in complex research

and development situations, where the researched problem cannot be properly defined in advance, accordingly, wicked problems can not so easily be approached with a matching theory or methodology. In the previous chapter I also argued that design of tangible problem-solving proposals, such as artistic prototypes, can be used as mean for further investigating wicked situations, aiming to facilitate for better understanding complex situations.

How can theory be constructed out of practice?

The design of a participatory art project as a tangible, problem-solving hypothesis is thus, in the case of my research, not aimed to be used for verifying or falsifying a hypothetic theory, but aimed to be used as a means for progressing towards a firmer determination of a wicked problem. I have therefore argued that arts and design-based progressive inquiry can function well in development work to come up with a first problem-solving proposal, to initiate the investigation of a wicked problematic situation. However, questions follow from this argument, such as; how could this kind of arts and design-based progressive inquiry be used as means to construct a more conceptual kind of knowledge? How can theory be constructed out of artistic practice?

REFLECTIVE PRACTICE

The reflective practitioner's approach proposed by psychologist Donald Schön (1983) suggests that practitioners' continuously reflect-in-action upon their practice, and these reflections-in-action are practical, problem-solving oriented, as practitioners are constantly oriented towards improving their own capacity to deal with the divergent everyday problematic situations, occurring in their practice.

When a practitioner reflects in and on his practice, the possible objects of his reflection are as varied as the kinds of phenomena before him

and the systems of knowing-in-practice which he brings to them. He may reflect on the tacit norms and appreciations which underlie a judgement, or on the strategies and theories implicit in a pattern of behaviour. He may reflect on the feeling for a situation which has led him to adopt a particular course of action, on the way in which he has framed the problem he is trying to solve, or on the role he has constructed for himself within a larger institutional context. Reflection-in-action, in these several modes, is central to the art through which the practitioners sometimes cope with the troublesome 'divergent' situations of practice. (Schön, 1983, p. 62-63)

The reflective practitioner has prior knowledge, and knows how to deal with various problematic situations coming up in the everyday practice, a kind of system of knowing-in-action. This system of knowing-in-action sometimes needs to be questioned by the practitioner, through the reflected-in-action, usually because the situation at hand has not followed the familiar pattern, which has made the practitioner surprised, in some way.

Reflection-in-action on one's knowing-in-action

Reflection-in-action has a critical function, questioning the assumption structure of knowing-in-action we think critically about the thinking that got us into this fix or this opportunity; and we may, in the process restructure strategies of action, understandings of phenomena, or ways of framing problems. (Schön, 1987, p. 28)

When a practitioner *reflects-in-action*, Schön describes it as that this person becomes a researcher in the practice context. Reflecting-in-action facilitates for the practitioner to construct a new theory of the unique case, independently of pre-supposed categories of already established theory. As a form of open inquiry, reflection-in-action does not have pre-defined means and ends, but allows the practitioner to formulate means and ends, interactively along with the problematic situation.

When someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case. His inquiry is not limited to a deliberation about means which depends on a prior agreement about ends. He does not keep means and ends

separate, but define them interactively as he frames the problematic situation. He does not separate thinking from doing, ratiocinating his way to a decision, which he must later convert to action. Because his experimenting is a kind of action, implementation is built in to his inquiry. Thus reflection-in-action can proceed in situations of uncertainty or uniqueness, because it is not bound by the dichotomies of technical rationality. (Schön, 1983, p. 68-69)

While reflecting-in-action, thinking is not separated from doing while the practitioner is performing a kind of experimenting-in-action. In this sense, the implementation phase is entangled with the act of reasoning, in reflecting-in-action. From this perspective, practitioners create theory while working with practical problem-solving.

Reflection gives rise to on-the-spot experiment. We think up and try out new actions intended to explore the newly observed phenomena, test our tentative understandings of them or affirm the moves we have intended to change things for the better. (Schön, 1987, p. 28)

Reflective practice could, from this point of view, be used as an analysing method, to inform the development of theory about practice, derived from the practitioner's knowledge, where the practitioner's reflections could be considered to be data about how practice works, but there is a problem with this way of generating theory, compared to academically organized, deduced theory.

The problem of practical knowledge as implicit and therefore invisible

The problem is that knowledge or theory, constructed from practical reflection does not often become represented as explicit arguments via textual representation.

Like knowing-in-action, reflection-in-action is a process we can deliver without being able to say what we are doing. Skilful improvisers often become tongue-tied or give obviously inadequate accounts when asked to say what they do. Clearly, it is one thing to be able to reflect-in-action and quite another to be able to reflect on our reflection-in-action so as to produce a good verbal description of it; and it is still

another thing to be able to reflect on the resulting description (Schön, 1987, p. 31)

Practical theories about problem-solving are often represented only as implicit knowledge, entangled with practice, as tacit knowledge mixed with the 'the stuff at hand' (Schön, 1983). The problem of making implicit knowledge from reflective practice explicit, so that it can be analysed and perhaps also to some extent conceptualized, will be further discussed in this chapter in relation grounded theory (Glaser & Strauss, 1967; Charmaz, 2006), which provides strategies and procedures for constantly documenting your analysing process, as in memo writing and theoretical sampling.

Self-reflective practice

Reflective practice as a method for generating knowledge from practice, can be discussed from different perspectives, where the reflective practitioner's perspective provides useful insights in why it is important to start capturing and recording your own implicit, tacit knowledge, as a practitioner, in practice. However, reflective practice can also be useful to attend to the problem of bias as in presupposed ideas about what is to be expected of the problematic situation; theory inherent in methods and tools; how researchers interpret the problematic situation and come up with problem solving proposals due to prior experiences; education, cultural and socio-economical capital; etc. To come to terms with unintended bias the reflective practitioner's perspective need to be extended with a self-reflective dimension. This extended, self-reflective dimension is here represented by the situated researcher's perspective. Situatedness, and reflecting upon one's own entangled position as a researcher, influencing and being influenced by the researched situation was discussed by Donna Haraway (1991). This perspective has been further developed as self-reflective a critical awareness of one's own technological and cognitive *research apparatus* by Karen Barad, (2003). From my own reflective practitioner's perspective, the ideas of knowledge as situated, and

of the researcher as positioned in the middle of the situation being investigated, matches well. The situated researcher's awareness of being messed up in and entangled with the researched situation, is a useful complement to reflective practice.

SITUATED KNOWLEDGES

Situated knowledges was introduced by feminist techno science thinkers like Donna Haraway (1988) and philosophers of science like Sandra Harding (1986), applied to practice and further developed by ethnographer Jean Lave through her concept of *cognition in practice* (1988) and *situated learning* (Lave & Wenger, (2005[1991])). The ideas of situated knowledges and the situated researcher's position has also been taken forwards by Karen Barad (2003) in what we today refer to as new materialism. The ideas of knowledge as particular and situated and of *situated knowledges* as diverse and pluralistic, was a feminist post-modern critic of the unreflected, and unquestioned positivist claim for *objectivity* within scientific research.

Feminist objectivity is about limited location and situated knowledges, not about transcendence and splitting of subject and object. It allows us to become answerable for what we learn how to see.' (Haraway, Situated knowledges, 1991, p. 583)

To become *objective* the scientific researcher would have to transform into a bodiless, faceless and contextless knower, and this transformation of the researcher, from an individual embodied human being into something else, would take nothing less than a *god-trick* as Haraway ironically pointed out.

But of course, that view of infinite vision is an illusion, a god trick. I would like to suggest how our insisting metaphorically on the particularity and embodiment of all vision (although not necessarily organic embodiment and including technological mediation) and not giving in to the tempting myths of vision as a route to disembodiment and second-birthing allows us to construct a usable, but not an innocent, doctrine of objectivity. I want a feminist writing of the body

that metaphorically emphasizes vision again, because we need to reclaim that sense to find our way through all the visualizing tricks and powers of modern sciences and technologies that have transformed the objectivity debates. (Haraway, 1988, p. 582)

Situated knowledges involves implies a politics of location, where positioning yourself as a situated researcher, according to Lykke (2010) can serve as a way of overcoming the postmodern dilemma of wanting to take a clear moral stance, yet wishing to avoid claims for scientific, disembodied objectivity.

Partial objectivity

The situated researcher is always positioned in the middle of the analysed situation, being aware of her or his embodied, entangled position of both influencing and being influenced by the researched situation.

*According to Haraway the god-trick is an illusion. In their critic of positivist science, she and other feminist researchers who argue for a politics of location are, to a large extent, in line with post-modern philosophers of science. Like these, feminists critics of positivism stress that the knower is always **in medias res** (in the middle of), participant in and in compliance with the analysed world. (Lykke, 2010, p. 5)*

To find a way out of the postmodern dilemma, the idea is that the researcher can obtain *partial objective* knowledge, by consciously reflecting on her or his own situatedness and on her or his own research technologies. Partial objective knowledge then meaning, knowledge of the specific part of reality that she or he can see from the position where she or he is materially and discursively located (Haraway, 1992; Lykke, 2010).

So, not so perversely, objectivity turns out to be about particular and specific embodiment and definitely not about the false vision promising transcendence of all limits and responsibility. The moral is simple: only partial perspective promises objective vision. All Western cultural narratives about objectivity are allegories of the ideologies governing the relations of what we call mind and body, distance and responsibility. (Haraway, 1988, p. 582)

Partial objectivity also includes taking an ethical stance and becoming responsible for how you envision and visualize your own research. Haraway's claim that we must *insist metaphorically on the particularity and embodiment of all vision, to find our way through all the visualizing tricks and powers of modern sciences and technologies*, implies that we must claim that behind every scientific situation there is a human, embodied researcher in charge, who is responsible for making decisions of what is being envisioned, and what is not, and in which way, no matter how objective the technological apparatus might appear which he or she uses for recording and rendering the visualisations. To obtain partial objective knowledge you would, of course, need to become aware of your situated researcher's position through self-reflection. As a situated researcher, you would need to reflect on your *position*, as in *siting* or locating your self as an embodied person influencing and being influenced by all kinds of things or objects or agents or actors within the researched situation.

Situated knowledges require that the object of knowledge be pictured as an actor and agent, not as a screen or a ground or a resource, never finally as slave to the master that closes off the dialectic in his unique agency and his authorship of "objective" knowledge. (Haraway, 1988, p. 593)

The metaphor of the actor network

The situated researcher's position is placed within a researched situation that resembles a networking environment, according to Haraway' metaphor, an environment of actors or agents that will both influence and be influenced by the researcher. This is the metaphor which I have used while methodologically elaborating with the situated, reflective practitioner's approach, where the learning environment as a research situation has been regarded from such a networking perspective. This metaphorical networking environment could be conceptualized as a space, where actors and agents like people, concepts and machines are positioned without any hierarchical order in connected to each other.

A corollary of insistence that ethics and politics covertly or overtly provide the bases for objectivity in the sciences, is granting the status of an agent/actor to the "objects" of the world. Actors come in many and wonderful forms. Accounts of a "real" world do not, then, depend on a logic of "discovery" but on a power-charged social relation of "conversation". The world neither speaks itself nor disappears in favour of a master decoder. The codes of the world are not still, waiting to be read. (Haraway, 1988, p. 593)

This metaphorical networking environment, where the researcher is situated, could also be further conceptualized as a space in time, as in agential realism (Barad, 2003) or an actor network theory (Latour, 2005) where the connections between the agents or actors are not fixed, but more or less involved in a state of constant process of change.

Similarly, ANT claims that it is possible to trace more sturdy relations and discover more revealing patterns by finding a way to register the links between unstable and shifting frames of reference rather than by trying to keep one frame stable. (Latour, 2005, p. 24)

The codes of the world are not still, waiting to be read, as Haraway pointed out, rather they appear as intra-actions between actors or agents in an unstable and shifting network, and the challenge for the researcher, situated within this networking metaphor is to find appropriate ways to register links and relations to trace this constantly changing activity. When new technology and social design is implemented simultaneously, unpredicted outcome may appear and to be able to have some control how such situations will evolve, we need sociotechnical analysing methods. To analyse such complex situations with an agential realism or an actor network metaphor makes it possible to map out different actors like ideas, technology, social design and human beings (living organisms) to trace their relations and activities. Actor network theory (Latour, 2005) provides an analysing metaphor which is reduced in complexity, compared with, for example Engeströms (1987) *activity theory*, which was developed from Vygotskij's conception of *mediation* (Miller, 2011; Säljö, 2005), becoming a more complex version of the original theory, as I see it. And it is precisely this

reduction of complexity within the analysing model of the actor network that opens up space for analysing these complex and unpredictable sociotechnical situations, by reducing the prior expectations of what makes things work - or not. In an actor network all nodes which have some influence on the network are regarded as actors or agents, regardless if they could be categorized as living organisms, like human beings, animals and plants, or as non-living things, like ideas, and technological artefacts. Reducing agents or actors to the same symbolic hierarchical plane doesn't imply that hierarchies or power relations have dissolved, as I see it is merely a technique, a procedure providing for the analyst to map out relations and relationships between actors that may remain invisible with another analysing metaphor.

What counts is the possibility for the enquirer to register that kind of "networky" shape wherever possible, instead of having to cut off data in two heaps: one local, one global. To tell an actor-network story is to be able to capture those many connections without bungling them from the start by some a priori decision over what is the "true size" of an interaction or of some social aggregate. As should be clear by now, ANT is first of all an abstract projection principle for deploying any shape, not some concrete arbitrary decision about which shape should be on the map. (Latour, 2005, p. 178)

The actor network used as a method of qualitative analysis can help the researchers visualize how actors relate to each other in the symbolic space of their networks, and with this method we can also follow how these relations between actors keep changing over time. The actor network metaphor when used as an analysing method, in this sense provides opportunities for spatial and temporal visualization.

Sighting your research apparatus

As a situated researcher, you would not just need to reflect on your *position*, as in *siting* yourself in relation to the researched situation as a place in time, but you would also need to critically look at your

involvement in the situation of researching, as in *sighting* referring to the visual, eye sight and to visualizing.

Playing with the words "site" and "sight" Haraway emphasizes that we must reflect on our "siting" (localization) and our "sighting" (the ways in which our vision and optical systems are crafted in technological, ideological and bodily biological senses). (Lykke, 2010, p. 6)

Sighting would include looking at and reflecting upon your research apparatus, that is, the methodological, cognitive and technological tools and instruments that you were using in the research process.

From an agential realism perspective, this research apparatus influence the researched situation and the researcher, and must therefor not be regarded as neutral, rather, it's influence must be scrutinized.

In my further elaboration of this agential realist ontology, I argue that phenomena are not the mere result of laboratory exercises engineered by human subjects. Nor can the apparatuses that produce phenomena be understood as observational devices or mere laboratory instruments. (Barad, 2003)

As a situated researcher you might even have to deconstruct your research apparatus to some extent, to be able to take a closer look, to examine the smaller parts to understand how the construction of the apparatus. Designing parts of my research apparatus myself, like the participatory art interventions constructed as methods and means for researching and developing educational practice as well a digital process archive for conducting comparative analysis with multi-modal data have provided me with opportunities to consciously and systematically meta-reflection upon the design process of these parts of the research apparatus, from a reflective designer's perspective.

Importantly, apparatuses are themselves phenomena. For example, as scientists are well aware, apparatuses are not preformed interchangeable objects that sit atop a shelf waiting to serve a particular purpose. Apparatuses are constituted through particular practices that are perpetually open to rearrangements, rearticulations, and other reworkings. (Barad, 2003, p. 817)

From this perspective, the researcher as a designer and assembler of a research apparatus needs to be critically aware of how this apparatus is constructed and how it operates, as in influences and is influenced by all the other agents or actors in the researched situation as an actor network. In this respect metaphorical network representing the researched situation can also be viewed as a space in time which is reproduced through the researcher's mind, where the situated, meta-cognitive reflection becomes yet another dimension of sighting. As a situated researcher designing interventions, you will have designed parts of the research apparatus yourself, and because of this you will have an insider's perspective of how the apparatus was designed and assembled to operate *in a particular way for a particular purpose*.

This is part of the creativity and difficulty of doing science: getting the instrumentation to work in a particular way for a particular purpose (which is always open to the possibility of being changed during the experiment as different insights are gained). (Barad, 2003, p. 817)

With regards to the situated researcher's position described here, it becomes as important to reflect upon the research apparatus from the perspective of your own epistemic beliefs, to analyse how you have assembled the parts and constructed this apparatus, and to reveal what kind of theories that are inherent in the assemblage of cognitive and technological methods, instruments and tools. The position as a designer of methods and tools affords possibilities to reflect upon these methods and tools from a reflective designer's perspective, to trace the epistemic origins of ideas behind the design, while the methods and tool become objects of investigation.

GROUNDING THEORY IN PRACTICE

What are grounded theory methods? Simply stated, grounded theory methods consists of systematic, yet flexible guidelines for collecting and analysing qualitative data to construct theories grounded in the data themselves. (Charmaz, 2006 p. 2).

I have argued, so far, that a reflective practitioner's approach can generate knowledge about real life situations, and that the design of artistic prototypes can support the an open ended progressive inquiry. The participatory art projects can in my case be regarded as tangible ideas, or tangible hypotheses, which have served as means for further investigating and determining the complex research and development situation of creative learning environments in higher education. In this case, progressive inquiry with methods from art and design have functioned well as a problem-solving approach to research and development work. Reflective practice affords methods for conceptualizing practice, where the practitioner's reflections can be regarded as data about how practice works. However, to make use of the reflective practitioner's knowledge we need methods for capturing the internalized problem-solving process of reflecting-in-action, as well as the externalized process of reflecting-on-action. As I see it, grounded theory offers such strategies and procedures for capturing reflective processes in qualitative research. This is because in grounded theory, observations analyses and theoretical development are considered to be constantly on-going processes, starting at the first of the research project, continuing during field-work and going on until the project's end.

Our strategy of comparative analysis for generating theory puts a high emphasis on theory as process; that is, theory as an ever-developing entity, not a perfect product. (Glaser & Strauss, 1967, p. 32)

I decided to work with grounded theory, because *the general method of comparative analysis* (Glaser & Strauss, 1967) provides a set of procedures that could be used for systematically organizing rich multi-modal data generated from artistic methods, such as photos, video recordings, sound files, drawings, handwritten notebooks etc. Moreover, the open ended strategy of *theoretical*

sampling seemed promising for keeping track of an open-ended, messy, progressive inquiry process with art and design.

Indeed the trick is to line up what one takes as theoretically possible or probable with what one is finding in the field. Such existing sources of insights are to be cultivated, though not at the expense of insights generated by the qualitative research, which are still closer to the data. (Glaser & Strauss, 1967 p. 253)

The integration of inductive analysis, as in *what one is finding in the field* and deductive conceptualizing, as in *what one takes as theoretically possible*, in the process of theoretical sampling encourages the researcher to make sure that what happens in practice is continuously registered, analysed and conceptualized. With constant comparative analysis, emergent hypotheses are tested against the researched situation in practice, during the field work. In this respect, grounded theory also provides strategies for supporting and integrating the designer's reasoning process as a continuum of *problem definition, synthesis, and evaluation*, using Rittel's formulation quoted earlier in this chapter.

Learning what is the problem is the problem. Whatever the designer learns about the problem becomes a feature of its resolution. From the beginning the designer has an idea of "the whole" resolution of his problem which changes with increasing understanding of the problem, and the image of its resolution develops from blurry to sharp and back again, frequently being revised, altered, detailed and modified. The designer's focus alternates continually from small component parts, back to the whole problem, and back to other details. (Rittel, 2010 [1988] p. 189)

Rittel's progressive inquiry of design, involves similar parallel processes, where the designer in the process of learning more and more about the problem, constantly revises, alters, specifies and modifies the problem formulation.

Codifying procedures visualize the researcher's process

Qualitative research findings are based on, or constructed from the researcher's observations, collection and analysis of data. The analysing process in qualitative research is described as an intuitive process based on the researcher's interpretation and experiences as a professional scientist. (Clarke, 2005; Stake, 1988; Wertz, 2011). There is always a risk of bias involved in the process of data collection, because of the human factor, but also due to *the research apparatus*, such as technological and conceptual research instruments and methods, which are never entirely neutral, as discussed in the previous chapter, in relation to *situated knowledges*. Even when the researcher rigorously documents the collected data and continuously writes field notes, there is always a risk that parts of the analysing process from this field work period will remain undocumented, as the researcher might not even be fully aware of this intuitive process of *reflecting-in-action*. The project of codifying qualitative methods that Glaser & Strauss (1967) took on when they first developed their ideas of grounded theory, as I understand it, encouraged and influenced qualitative researchers to start thinking about how they performed their research.

Codifying qualitative research methods entailed specifying explicit strategies for conducting research and therefore demystified the research process. (Charmaz, 2006, p. 7)

I believe that, due to the fact of how the *general method of comparative analysis* (Glaser & Strauss 1967) was designed, as a particular and explicit set of procedures, the act of performing these procedures highlighted the researcher's own procedures. As I see it, this probably had the effect that researchers became more aware of the importance and impact of their analysing processes and procedures. Accordingly, the processes and procedures of analysing and making sense of empirical data, could no longer remain an invisible, mysterious activity that could go on in the dark, unnoticed and unreflected.

An alternative conceptualization of the analytic process

One of the main procedural strategies suggested by Glaser & Strauss (1967) in their first version of grounded theory, was for the researcher to start analysing data in the field and to document this process, through taking field notes, coding them and writing memos on the field notes. Memo writing was a strategy that allowed researchers to elaborate with the data and the field notes to start making sense of it, while combining analysis and interpretation. I believe that the strategy of integrating the collection, analysis and interpretation of data, as in the procedures of memo writing, implicated the importance of the researcher's own process of progression.

From the point of view of generating theory it is often useful to write memos on, as well as code, the copy of one's field notes. Memo writing on the field note provides an immediate illustration for an idea. (Glaser & Strauss, 1967 p. 61)

As I see it, the procedures of comparative analysis, when put to practice, implicated that the analysing process were of importance. This is because the procedures themselves implied a rigorous documentation of the analytic process, through coding and memo-writing, from the very start of the research project. I think that a consequence of this was that, rather than viewing the analysis and interpretation of data as a certain stage, which was separated from the collection of data and which would come in later in the research process; the collection, analysis and interpretation of data became an integrated process of reasoning, as researchers were encouraged to make sense of their data through memo writing in the field, day by day. The *general method of comparative analysis*, as well as the procedures of *theoretical sampling* was, as I see it, basically proposing for the researcher to take on, not just an alternative approach to the procedural process of doing research, as in the continuum of collecting, analysing and interpreting data. These procedures are also pushing the researcher to take on an alternative conceptualisation of the analytic process, as a valid process of

reasoning, which needs to be rigorously documented, something which is also occurs in practice, as consequence of following the procedures.

Theoretical sampling

Theoretical sampling, where *the analyst jointly collects, codes and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges* (Glaser & Strauss, 1967) is a research process where the researcher collects data in the field, with the intention to generate theory. In theoretical sampling, the researcher is engaged in activities representing several different stages of a traditional research process simultaneously. However, it is also a process where the researcher takes one step at the time, in progressing towards a more accurate determination of the problem. Theoretical sampling simultaneously involves induction and deduction. The researcher constantly shifts between the act of induction, as in sampling data (observing, collecting selecting and coding; and the act of deduction as in conceptualizing data (analysing and writing memos about leads emerging from the data). This form of inductive-deductive reasoning, particular for grounded theory, although inspired by pragmatism, was described and exemplified by Glaser & Strauss (1967) within the procedures of comparative analysis and theoretical sampling, and was later referred to as *abductive analysis* by Charmaz (2006) et al.

In this sense, theoretical sampling entails both of what we commonly refer to as inductive and deductive reasoning. The particular form of reasoning invoked in grounded theory makes it an abductive method, because grounded theory includes reasoning about experience for making theoretical conjectures and then checking them through further experience. Abductive reasoning about data starts with the data and subsequently moves towards hypothesis formation. In brief, abductive inference entails considering all possible theoretical explanations for the data, forming hypotheses for each possible explanation, checking them empirically by examining data, and pursuing the most plausible explanation. (Charmaz, 2006, p. 103)

Deduction and induction as subjective processes of logical-creative reasoning and decision-making

Deduction is the act of abstract reasoning where, *'through a sequence of formal steps of logic, from the general to the particular, a valid conclusion can be deduced from a valid premise'* (Denzin & Lincoln, 2011, p.4). The act of deduction is here also considered as a process where the researcher is logically imagining several different hypotheses and making decisions regarding which ones of these emergent hypotheses to further propose or to terminate. Because the possible universe of data must be delimited by the researcher, this process of reasoning is also subjective. Accordingly, the researcher's analysing and meaning-making of the sampled data is based on her or his judgements and decisions, can be viewed as a *logical-creative process of reasoning* which is forming or constructing the emergent outcomes of the research. The inductive process of observing, collecting, selecting and coding data follows a similar pattern of subjective decision-making resulting in a delimitation of the universe of data.

The universe of data that the constant comparative method uses is based on the reduction of the theory and the delimitation and saturation of categories. Thus, the collected universe of data is first delimited and then, if necessary, carefully extended by a return to data collection according to the requirements of theoretical sampling. Research resources are economized by this theoretical delimiting of the possible universe of data, since working within limits forces the analyst to spend time and effort only on data relevant to his categories. (Glaser & Strauss, 1967 p. 112)

Following from this, theoretical sampling, also referred to as *abductive analysis* (Charmaz, 2006) could then be described as a process of decision-making, comparable with the reasoning of designers proposed by Rittel, where the designer's reasoning appears as a process of argumentation, which eventually leads to the designer's making up her or his mind in favour of some of these proposed possible problem-solutions.

The designer's reasoning appears as a process of argumentation. He debates with himself or with others; issues come up, competing

positions are developed in response in response to them, and a search is made for their respective pros and cons; ultimately he makes up his mind in favour of some position, frequently after thorough modification of the positions. In this model design is an argumentation, the various issues are interconnected in intricate ways; usually several of them are "open" simultaneously, others are postponed or reopened. The designer finds himself in a field of positions with competing arguments which he assess in order to assume his own position. (Rittel, 2010, p. 189)

Obtaining partial objectivity as a situated researcher

But how can the researcher avoid ending up in the postmodern dilemma of wanting to take a clear moral stance, yet wishing to avoid claims for scientific, disembodied objectivity? Charmaz (2006; 2014) argues that abductive reasoning starts with the data and subsequently moves toward hypothesis formation

Abductive reasoning about data starts with the data and subsequently moves towards hypothesis formation. In brief, abductive inference entails considering all possible theoretical explanations for the data, forming hypotheses for each possible explanation, checking them empirically by examining data, and pursuing the most plausible explanation. (Charmaz, 2006, p. 103)

To imagine all possible theoretical explanations and forming hypotheses for each of these explanations, checking them against the empirical data is a difficult task to perform from a technical rationality or objectivist research's approach within a reasonable period of time, yet it is possible to perform from a *positioned, situated* researcher's perspective. Situated knowledges and the situated researcher's perspective becomes the way out of this postmodern dilemma, because the situated researchers *positioning* implies that the researcher no longer makes a claim for scientific objectivity, but for contributing with situated, partial objective knowledge, to a diverse field of knowledges. However, the situated researcher's *positioning* will make the researcher ethically

responsible for her or his decision-making in the process of partial objective knowledges production.

Positioning is, therefore, the key practice in grounding knowledge organized around the imagery of vision, and much Western scientific and philosophic discourse is organized in this way. Positioning implies responsibility for our enabling practices. It follows that politics and ethics ground struggles for and contests over what may count as rational knowledge. That is, admitted or not, politics and ethics ground struggles over knowledge project in the exact, natural, social and human sciences. Otherwise rationality is simply impossible, an optical illusion projected from nowhere comprehensively. (Haraway, 1991, p. 587)

Obtaining partial objectivity from a situated researcher's position implies being responsible for what you decide and for what you construct, and the situated researcher's position can in this sense be compared with the position of the artist or the designer. Design deliberations terminate with judgements, and with decisions made by the designer.

There is no neutral, objective design. Design is subjective. Of course. Why shouldn't it be? (Rittel, 2010[1988], p. 192).

From a situated knowledges paradigm, there is no neutral objective research, only partial objectivity can be obtained. Research is subjective. Of course. Why shouldn't it be?

PART II

THEORETICAL DEVELOPMENT

GROUNDED IN PRACTICE

5.

INTERVENTION IN A CAMPUS COURSE

1. Making and printing
original visual images



WINTER

2. Sound sessions
at preschools



3. Students transform
visual images



SPRING

4. Game maker make
video game



5. Preschool children
play video game



SUMMER

STORYLINE OF THE PARTICIPATORY ART PROJECT

1. Making and printing original visual images

I was invited to make some visual images for a sound art project with teacher students in a music for preschools course, by my colleague who was also working as an artist-in-residence. We discussed, negotiated and decided instead to do a larger interdisciplinary participatory art project, where visual arts students could be involved as well as music students. I would then be responsible for the visual arts part and my colleague for the sound part of the project. My colleague wanted us start up the project quickly, so I created sixteen visual images myself, had them printed and mounted so that they would work as inspirational play material for sound sessions to be held at the preschools. I designed the images to be interpretable, as art works, because I wanted to facilitate for the preschool children to imagine many different sound interpretations to each of the visual images.

2. Sound sessions at preschools

I handed over the printed and mounted images to my colleague, the sound artist, as he would be in charge of instructing the preschool teacher students who were going to perform the sound sessions at the three local preschools which had agreed to participate in the art project. The preschool teacher students were expected to perform sound sessions with children at local preschools as part of their teaching-practice, but normally they would just sing songs together with the children. The sound artist provided the students with sound recording equipment so that they could record the sound sessions. My visual images were shown to the preschool children who were asked to imagine what kind of things or creatures the visual images might represent, and to imitate sounds which the things or creatures of the visual images might make. The students recorded and edited the children's sound interpretations and they also took notes on what the children said about the visual images.

3. Students transform visual images

The project would now expand to involve visual art students and become a interdisciplinary participatory art collaboration between music and art. I implemented the participatory art project as an intervention in a graphic design course, where the students were asked to transform my original visual images into new images, following from the preschool children's sound interpretations. The graphic design students were given digital versions of those visual images which I had created for the sound sessions at the preschools. They also received digital sound files of the preschool children's sound interpretations, where each of the visual images would have a corresponding set of sound interpretations, accompanied by a written note describing what the preschool children had said about that image. The graphic design students worked with transforming and making new versions of the original images as an assignment integrated in one of their mandatory courses.

4. Game maker make video game

The overarching aim with the participatory art project was to provide opportunities for all participants to playfully investigate the relations between sounds and images, but we also wanted the project to result in some kind of tangible outcome in the form of art works or installations, not just a relational process. My colleague, the sound artist, wanted to use the recorded sounds in a sound art installation and I had ideas of making a video game for the pre school children. I had already asked a game maker who I knew, if he wanted to join the participatory art project, he agreed to this and designed and programmed a video game based on the all the artistic material assembled, both the recordings of the preschool children making sounds and the visual images which the graphic design students had created. Our agreement was that the game maker would make a video game especially for the preschool children who had participated in the project, and that the game would not be used for commercial purposes.

5. Preschool children play video game

The final step of the participatory art project was to return to the preschools so that the children could experience the tangible results of the art project which they had participated in and contributed to. The game maker the sound artist and I went out to the three local preschools which had participated in the project. We brought technical equipment with us to the preschools so that we could set up the game to be projected on a screen in their play hall, with professional studio monitors for the sound. The design of the game built on the idea of collaboration, that the preschool children should play and solve the video game together, as a group.

Collaboration between music and visual arts

The participatory art project described in this chapter was part of an artist-in-residence commission which I was employed to do for a Swedish University. We were two artists working as artists-in-residence at the same department, I was the artist-in residence representing visual arts and my colleague music. Both of us had just started working at the department when my colleague, a sound artist, asked me if I was interested in collaborating with him in a sound art project. The sound artist's students were preschool teachers who were going to perform teaching-practice at preschools, as part of the course plan. The sound artist wanted me to make some visual images to serve as inspiration for the preschool children. The idea was that the visual images would inspire and encouraged the children and the students to start playing around with sounds, to investigate sounds with their voices in an artistic experimental way, rather than to just sing songs as they were used to. I agreed to collaborate, although the sound artist's project idea did not really fit into the aims and goals of my employment. As an artist-in-residence in visual arts, I was expected to develop contemporary artistic practices together with students and teachers in the visual arts courses, and the sound artist's project only engaged students in a music course. Therefore, I suggested that we

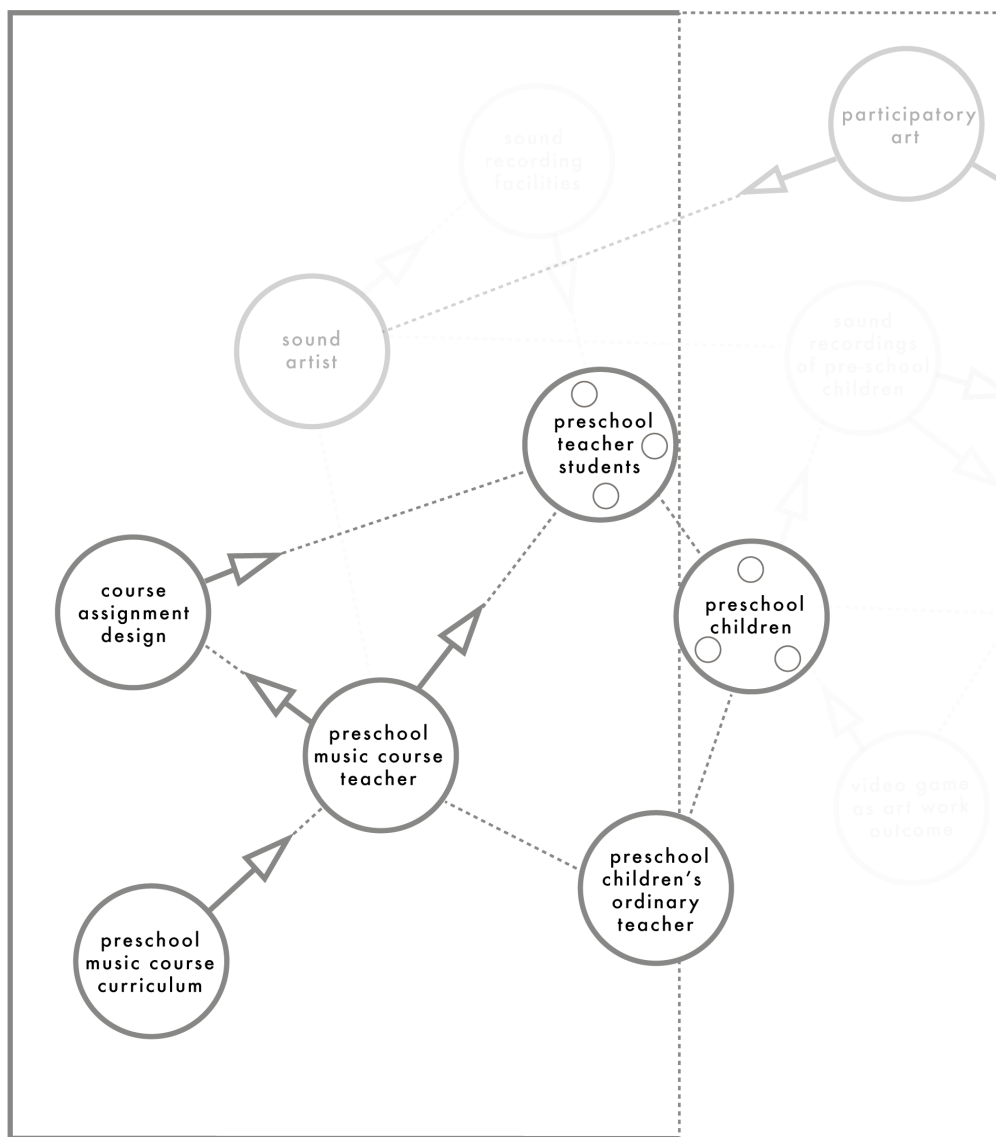
should formulate outlines for an interdisciplinary participatory art project instead, involving students and teachers from both music and visual arts. We discussed a common project formulation, where I suggested that we could investigate interpretation between visual images and sounds, based on the concept of semiotics and sound as language. The sound artist and I negotiated and formulated an overarching project description for an interdisciplinary participatory art project involving teachers and students in music and visual arts, which then was printed and used as a hand-out to inform the participating students, teachers, preschools and the head of the department.

The (name of participatory art project) is an artistic development work conducted at the (name of the department), by the (name of the visual artist) and (name of the sound artist). The idea is to investigate the relations between images and sounds, semiotics and semantics, visual language and sound as language. By using playful free associations we will create a new sound-image-language through the interpretation of images to sounds, where these sound interpretations will influence the making of new images. (Extract from the printed hand-out information about the participatory art project, my translation from Swedish)

The aims and goals of the participatory art project was to encourage all participants to creatively engage in an investigation of semiotics and semantics, by playfully interpreting and transforming visual images to sound language, and in a similar way to make images from interpretations of sounds. I have made two illustrations, to give an overview of the situation of the participatory art project. The first illustration (page 94-95) shows the situation at the initiation of the participatory art project, with the two separate university courses and the local preschools which were going to become involved. The second illustration (page 96-97) shows the situation during the implementation of the participatory art project, where the learning environment has turned into a creative network.

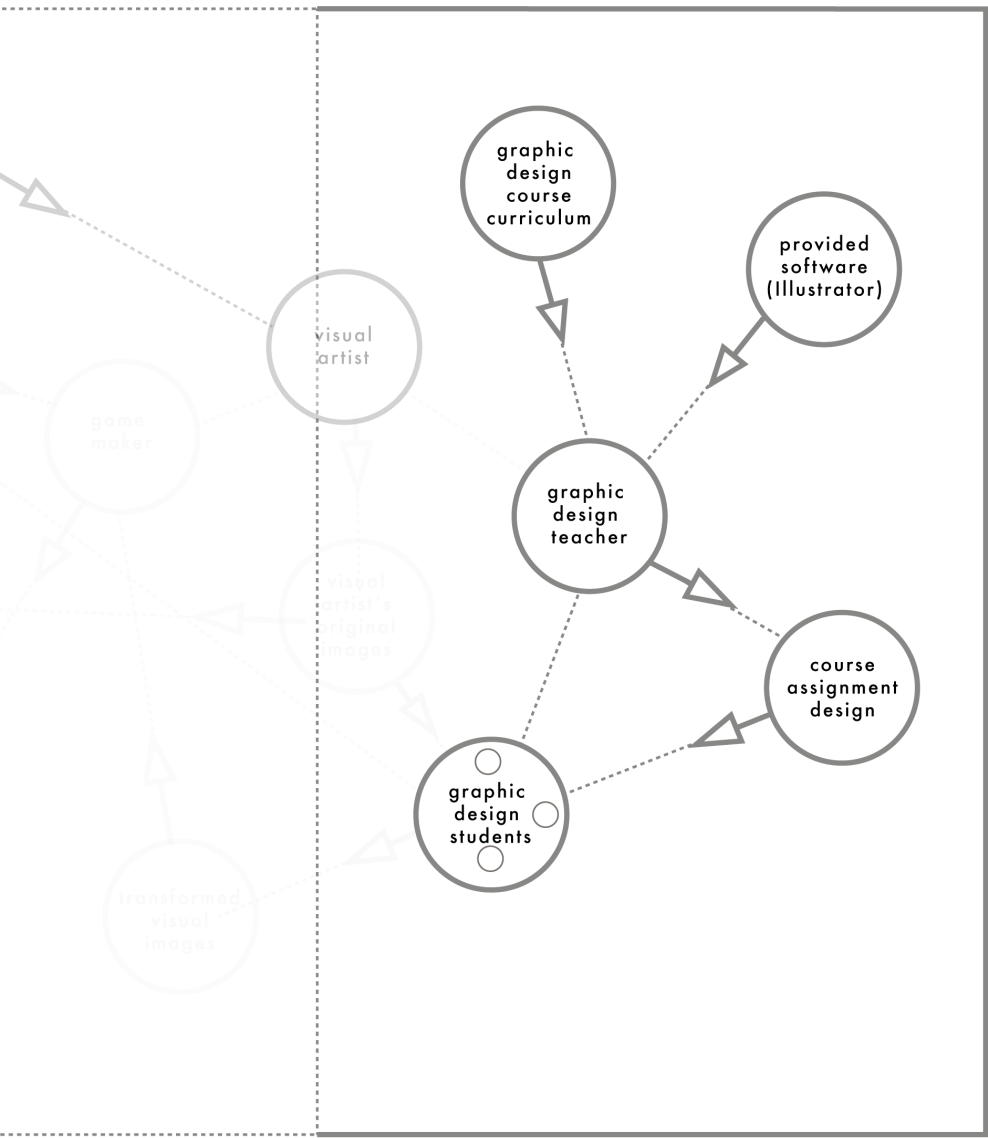
Overview of the chapter

This chapter provides an example of a participatory art project which was conducted as artistic development work in higher education. This can be seen as a point of departure for the overarching question in this thesis of what participatory art can do for higher education. For this purpose, the participatory art project will be described from my reflective practitioner's perspective as an artist-in-residence, as well as from the various perspectives and stories of other participants, such as the graphic design students and their teacher, the sound artist and the game maker. In this chapter I describe how the graphic design students interacted with and related to each other and other actors during the participatory art intervention, from an actor network perspective, to investigate in which ways the intervention influenced the students' creative processes. The learning environment is analysed as an actor network, where actors can be both human beings, artefacts, technology and ideas. To learn more about how the intervention affected the graphic design students' experiences of their creative processes, transcripts from the students' presentations have been focused coded from a relational perspective. My coding is focused on looking at what happened in-between the students and other actors in the learning environment, how the students thought about and related to those other actors, and how this subsequently influenced their creative processes. This chapter is concluded with an analysis of issues and ideas which have emerged during the narrative description of the participatory art intervention, where I both look at how the participatory art intervention influenced the students' creative process and the learning environment as a sociotechnical system.



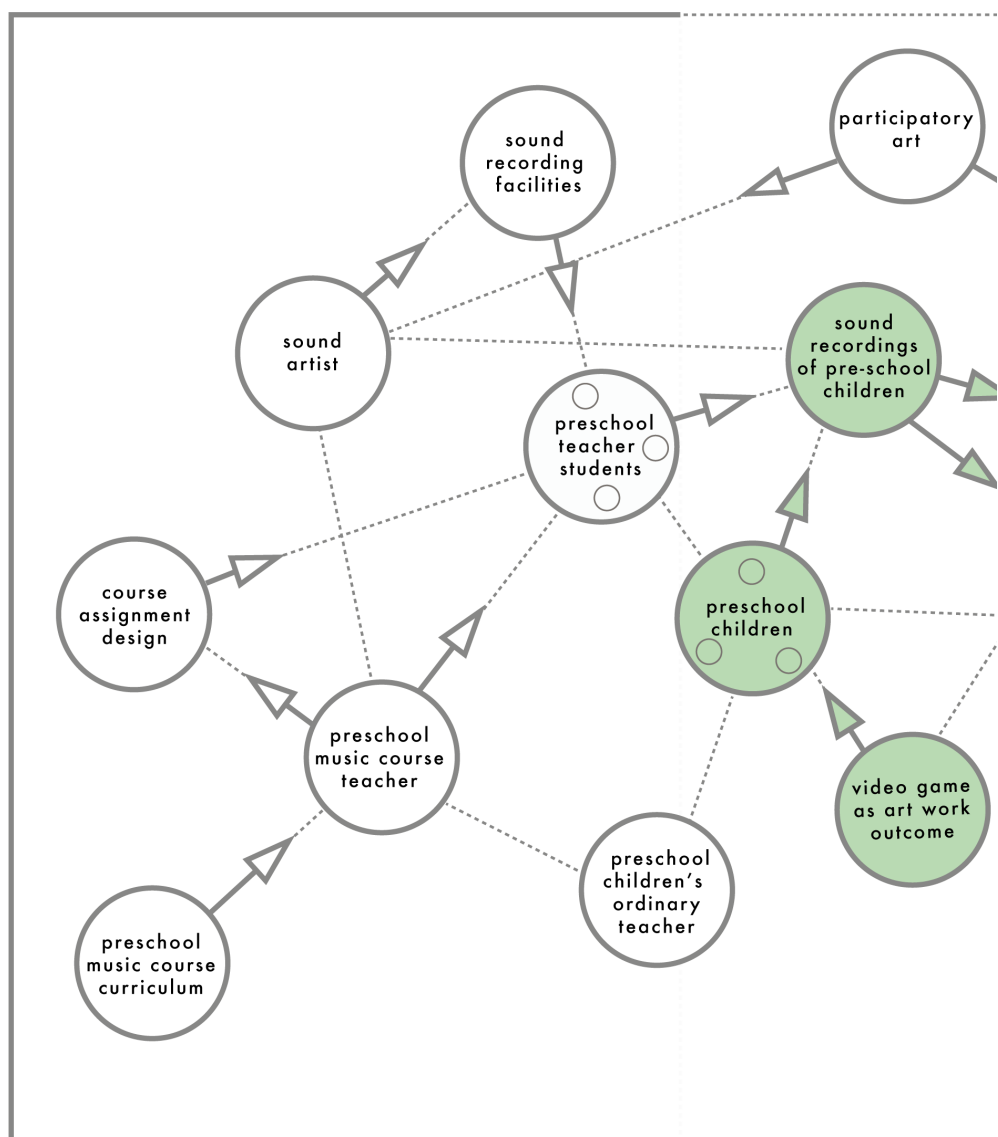
Music for preschools course

Collaborative space into



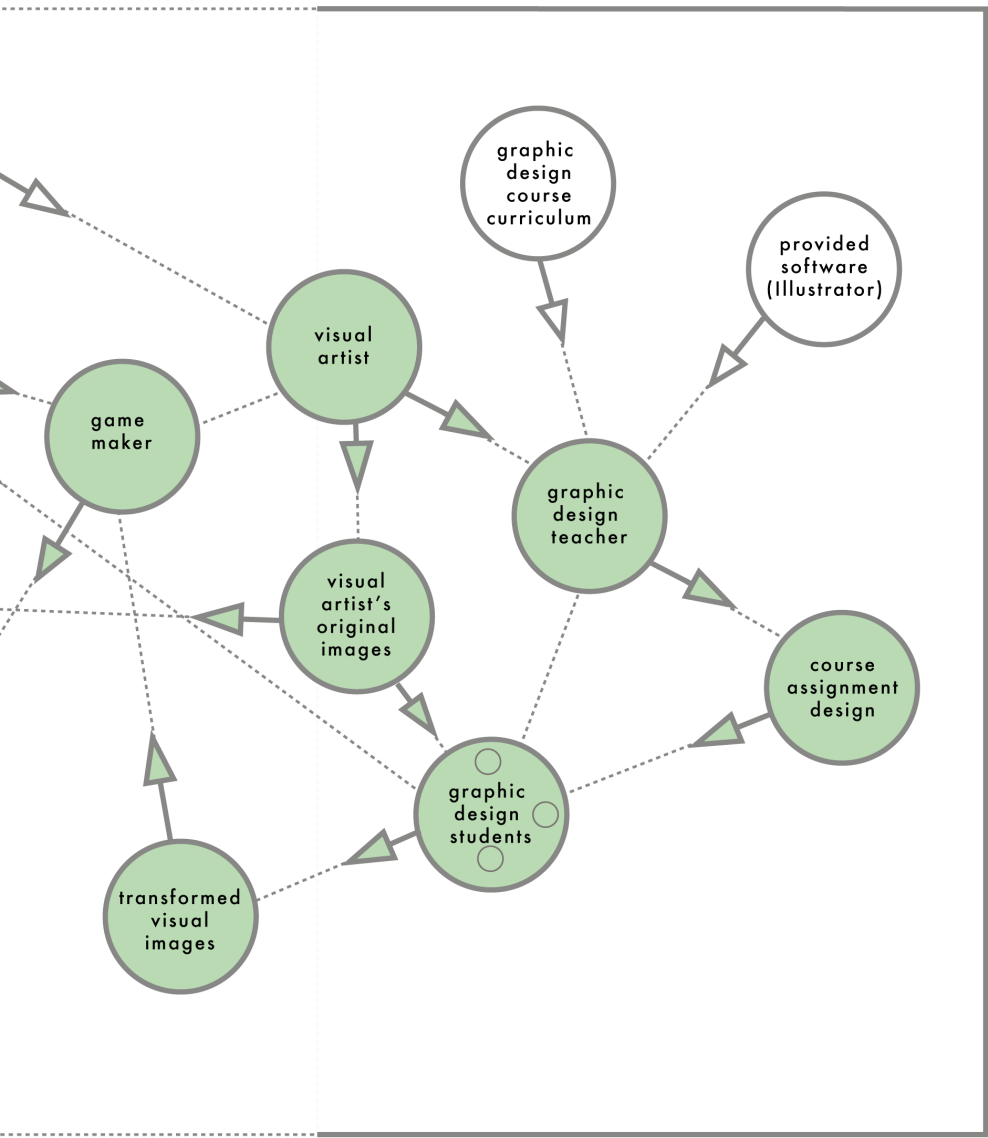
between the two courses

Graphic design course



Music for preschools course

Collaborative space int...



between the two courses

Graphic design course

PARTICIPANTS, DATA AND ETHICAL CONSIDERATIONS

The participatory art project became a cooperation between music and visual arts and technically one could say that it consisted of three parts, the sounds sessions at the preschools for which the sound artist took responsibility, my intervention in the graphic design course and the game maker's development of a video game. Because of this, there was also a natural division of labour and of responsibility, where each of us was in charge of our own small part of the larger participatory art project, with some overlapping, for example, I created the visual images as interpretable art works, as inspirational play material for the sound sessions at the preschools.

The graphic design students

I was responsible as an artist-in-residence, for the intervention in the graphic design course which was implemented in cooperation with the graphic design teacher and his students. I participated in the course as a guest artist, who came in to the ordinary course and had a dialogue with the graphic design students about how we were going to work with the participatory art intervention. The empirical data deriving from the intervention in the graphic design course which is studied in this chapter is based on several sources of information, such as my reflection-in-action as an artist-in-residence of designing and implementing the intervention, the graphic design student's presentations of their art works and creative processes, as well as reflective practitioners dialogues which I had with the teacher in relation to the intervention. The teacher and I had planned for the intervention a term in advance, and therefore he could also inform his students in advance, what we planned to do, and ask them if they were interested in participating. Because of this, the graphic design students had already agreed to participate and were familiar with the participatory art project, as I introduced the project on the first

day of a three week's course aiming for them to learn the software Adobe Illustrator. I introduced the students to the participatory art project and presented the ambition behind the interdisciplinary collaboration between music and visual arts, aiming to playfully investigate the relations between sounds and images. I also updated the students what had happened so far in the project, during the sound sessions at the preschools. The students were given a printed hand out with information about the storyline of the whole participatory art project. The hand-out presented steps already taken, such as the sound sessions performed at the preschools, steps to follow, such as their assignment to transform the visual images according to the preschool children's interpretations as well as the final step, to make art installations and a video game based on the images and sounds produced in the project, which were planned to be presented in an upcoming educational research conference in Sweden the same year.

Students' informed consent

The students had been informed about the participatory art project in advance by their teacher and the result of this was that all students had already decided that they wanted to participate in the art project. Because of this situation, I told the students that even if they did not give their consent to the research part of the project, they could then still participate in the participatory art project, so that they would not feel obliged to do both. I explained to the students that I, for example would be interested in finding out how they experienced working with the sounds and the visual images, to understand more about what had worked well or not so well with the participatory art project, so that I could share useful knowledge with others who wanted to work with participatory art projects in other courses. The students were informed about their rights to agree or disagree to participation, and how this right was based on the demand for informed consent according to guidelines of the Swedish Research Council at that period of time (Swedish Research

Council 2002; 2008; 2011). They were also informed that they could tell their teacher or contact me, if they had first agreed to participate and then decided that they wanted to withdraw their consent during the project period. All of the twenty students in the class gave their oral consent for me to research the intervention and to photo document them while they were working. None of the students withdraw their informed consent during the project period.

Reproduction of images

When the students gave their final presentation of their art works and creative processes, each student was asked individually if they allowed me to record their presentation for research purposes, and all students orally agreed to being sound recorded while doing their presentations. During the research process, the sound recordings of the graphic design student's presentations were anonymized through transcription into written text, and it is the textual transcripts which are considered as data for the study. That same day as the students held their final presentations we also had a discussion in class about the need for the students to either say yes or not to letting us use the visual images which the students had created for the next stage of the participatory art project. In the printed hand-out which the students had received we had stated that the results of the participatory art project, an artistic installation was planned to be presented at an upcoming conference for education and learning. I told the students that the sound artist was working on some kind of sound art installation and that I had contacted a game maker, who hopefully would make a video game for the preschool children based on the sound and images produced in the project. I informed the students that these art works, including the video game, would only be used for art and research, and not for commercial purposes. All students agreed that their images could be used for the next stage of the participatory art project, that is, the planned sound art installation and the video game. The students also agreed that their images could be

reproduced in research related presentations and publications which were not for commercial purposes and transferred their images to the hard drive of the school's computer for this purpose.

The graphic design teacher

The reflective practitioner's dialogue between the graphic design teacher and myself presented in this study is based on a recorded conversation with the teacher, which has been transcribed into written text, where the quotations used in this book were translated from Swedish into English. This dialogue was recorded five years after the project, partly to complement my memories of the student's work processes and partly because some questions had emerged while I was working with this book. These questions concerned that I wanted to learn more about how the learning environment as a system had been affected by the intervention, something which made me realize that it would be beneficial to do a follow-up together with the teacher. I had already organized documentary material from the intervention like video-clips and photographs for conference presentations, so I just prepared a PowerPoint presentation for the reflective practitioner's dialogue teacher. This presentation was constructed as a time-linear story of the whole of the participatory art project supported by images and sounds. The dialogue with the teacher also became a way for me to return to the ground data, where this dialogue might be regarded as a theoretical sampling from the perspective of grounded theory, a way to reality-check the emergent ideas which I was working with.

The sound artist and the preschools

The sound artist was in charge of the implementation of the sound sessions at the preschools, where preschool teacher students in a music for preschools course, would use my printed and mounted visual images as inspirational material, to playfully explore sounds together with preschool children and their ordinary teachers. The

sound artist organized the sound sessions, informed the preschool teacher students and the preschools about the participatory art project. I had regular dialogues with the sound artist about the participatory art project and the sound sessions at the preschools, during the year when we worked in collaboration. I recorded two of those reflective practitioner's dialogues, one at the mid time of the project and one just after the project's closure. I have transcribed these recorded dialogues into written text, as a way of anonymizing personal data, and translated the parts used in the thesis into English. The three local preschools which had agreed to participate in sound sessions had received a hand-out in advance, informing the parents and preschool children about the project. The parents had then signed an agreement which stated if their children were allowed to participate in the project or not, and if they agreed for their children to be photographed or video-documented. All preschool children were allowed to participate in the participatory art project, although some children were not allowed to be documented with photo or video. The preschool children's' ordinary teachers always accompanied their children, during the sound sessions at the beginning of the project, as well as during the video gaming sessions which were conducted at the end of the project. The preschool children's' ordinary teachers helped us and our students to keep track of children who were allowed to participate in the project, but who were not allowed to be documented. The preschool teacher students documented parts of their sound sessions at the preschools with their smart-phones, and I documented parts of the video game sessions at the preschools with photography and video. The photographs and video recordings at the preschools were only intended as documentation of the participatory art project, and have not been used as research data in this study.

The game maker

The game maker designed and programmed the video game especially for the preschool children in the participatory art project. I was already acquainted with the game maker who was a student and an indie-game developer, so I asked him a term in advance if he would be interested in making a non-commercial video game for us as part of his upcoming a study-practice. Because the game maker was a non-paid high school student while making the game he owns the copyright to his part of the game, that is the concept and programming, in a similar way as the graphic design students owns the copyright to their own visual images. The game maker has given his oral consent for the video game to be used and reproduced for artistic and research presentations. I have returned to my co-operators, which can be considered as empirical ground sources, to collect more data at various stages of this study, as a way of triangulating my emerging ideas against their versions of the project's reality. The reflective practitioner's dialogue with the game maker, was recorded at quite a late stage of the research process, during my final year of writing, while I was describing composing the pieces of the participatory art project together into a whole story. The quotations of the dialogue with the game maker in the following text are based on an edited transcript of a sound recording, partly translated from Swedish to English. The game maker has given his informed consent for this transcript to be used as data in this particular study, for research purposes, under the condition that he firstly has been allowed to read the transcript, and that parts of the recorded dialogue which concerned ideas about his current and future artistic programming projects were removed and not considered to be data for this study.

Ethical considerations in relation to research data

Data connected to persons in the participatory art project have been anonymized as far as this has been possible. Anonymization of personal data has been pursued, even though no ethically sensitive

data was produced in the participatory art project. I decided to anonymize data which could be connected to individual participants in the project with consideration to the European Union's General data protection regulation (EU, 2016; The Swedish Government, 2018) which recommend companies, researchers and authorities not to archive any unnecessary personal data of European citizens. In Sweden, research databases which are produced with governmental financing are regulated to be stored by the Swedish authorities, according to current recommendations archiving of research data (The Association of Swedish Higher Education Institutions, 2018). The Swedish research council (2015; 2017) has pointed out that, according to their interpretation of the current Swedish law (Swedish Government, 1949; 2009) such official databases could be viewed as public archives, simply because they are stored by the Swedish authorities. My conclusion is therefore that it is my ethical responsibility as a qualitative researcher to anonymize and minimize the use of unnecessary research data which holds personal information about participants in my art projects. I have decided upon the principle to anonymize and reproduce quite a lot of empirical data directly in the thesis, such as students' visual images, quotations of students' presentations and reflective practitioner's dialogues which I have had with the participating teachers and artists. This idea of this principle is to provide open access to a lot of my empirical data, and at the same time protect my participants from exposure by anonymizing the data. Photographs and video recordings of participants' are regarded as documentation belonging to the participatory art projects, and have not been considered as research data for the thesis. The aim is to protect personal data like for example photographs of participants, from the risk of being misused, which is a risk because all research data is to be archived in what might be considered as public archives, following the logic of GDPR (EU, 2016) in combination with how the current Swedish law might be interpreted (The Swedish research council, 2017; The Swedish Government, 2018).

THE PARTICIPATORY ART INTERVENTION IN THE GRAPHIC DESIGN COURSE

The following dialogue between the graphic design teacher and myself aimed to give an insight into what the three weeks' course the software Adobe Illustrator, would have been like normally without the participatory art intervention. I wanted to know this as starting point for a comparative approach, as I tried to figure out in which ways the intervention had affected the students' creative processes and the learning environment as a system.

Sol: What I get stuck at with this project is that, when I look at how the student's creative processes are influenced by the intervention, I need to find a way to compare this situation with what it would have been like, normally. As I remember it, the students were supposed to learn the software Adobe Illustrator and normally they would have had some kind of tutorials?

Teacher: Yes. That were aiming at the students learning various functions of the software.

Sol: Was it tutorials that came with the software?

Teacher: No, it was things that I had prepared for Illustrator, how to build it in various ways, how you can use structures and different elements of form.

Sol: Could you describe how the course would have proceeded normally?

Teacher: Firstly, there is a technical threshold, so that you understand where the tools are, with the toolbox and so, and then it is how different lines and forms relate to each other. That is, the balance between a plane and a line, where it is very important that it is neither too thick or too thin. That's like the next step, when you only focus in form contrast, as you call it in typography.

Sol: Mmm. Would you have done tutorials then?

Teacher: Yes I would have done tutorials on that and if we look at typographic letters, as we would have done, then you could see that this is used in various grades.

Sol: Mmm.

Teacher: And it is connected to the visual perception, how you experience a font. There are examples of when this does not work so well, the interaction between lines and strokes, I mean, thin and thick lines, which is very important. And above all, the proportions between the different parts of the font...

Sol: Mmm. Would they have worked in Illustrator, with some kind of typographic font design?

Teacher: We would only have gone through the parts, that is, no complete typographic font design, but we would have tested the effect of contrast in the type area as you call it.

Sol: Could one say that you would have designed tutorials that were more technically focused, so that they would understand?

Teacher: Yes. How it comes together in design of fonts, where there are good and bad design, and some fonts become popular in the discourse of graphic designers which is understandable, because that's a subtle visual language...

Sol: Did the students know Illustrator before they started the course or were there expectations that they should learn the software during the course?

Teacher: Yes, exactly, they should.

Sol: So, normally, there was some kind of content but more focused on knowledge about fonts?

Teacher: Yes, that's right.

Sol: And now the content became more focused around visual images, with quite simple images, but they provided a similar function for the students to learn Illustrator?

Teacher: Yes, that's right.

Normally during the three week course of the software Adobe Illustrator the graphic design students would have worked individually with some tutorials which the teacher had designed, with a content based on font composition, although they would not actually learn to compose fonts during the course. The students would have worked with some basic composition assignments and at the same time they would learn some of the tools and functionality of the software. With the intervention the students worked with the assignment to transform visual images according to

preschool children's sound interpretations, while at the same time learning the software and learning about graphic composition as well.

How I introduced the students to the participatory art project

I introduced the students in the graphic design course to the participatory art project. During this introduction, I also presented the assignment to transform visual images according to the preschool children's sound interpretations, which the students were going to work with during the three course weeks. I showed the students the original images which were printed and mounted in plastic and explained how these images had been used in the sound sessions at the preschools. The students were informed about my basic expectations of their artistic contribution and I told them that the good thing with this assignment was that they couldn't misunderstand it or fail, because they were asked to work with artistic interpretation and whichever way they would choose to solve the assignment would be fine with me. All students who wanted to contribute with their visual images to the common art work could do so, and there would be no competition. I also told the students that I was interested in studying what would happen in the course from an artistic researcher's perspective. I explained to the students that, as an artist, I was curious to see what would happen with the visual images and my ideas about the art project, when they would interpret the sounds and transform the images and put my ideas to practice.

The graphic design students' presentations of their artworks

The graphic design students' final presentations included displaying their art works as well as talking about their creative processes. The students had received vector-based digital versions of my original

images along with digital sound files of the preschool children's interpretations, which corresponded to each of the specific images. The students had then created transformations, mutations or novel versions of those images, according to the preschool children's sound interpretations. The students' presentations began as a negotiation of how to perform the presentations. Because of the various media involved in the project, and due to the fact that none of us had done this before, we needed to decide together, which was the best way of doing it. This initiating conversation which is quoted in the following pages (figure 5.2) took place between the teacher, myself as a guest artist and the student who was going to present first. The rest of the class acted as an active audience. This kind of small talk can also be regarded as a strategy for setting the stage for the following discussion about design. Setting the stage with this kind of discussing, negotiating and deciding together about the order of things, I believe facilitated for the students to feel invited and encouraged to discuss their design, artistic processes, interpretations and reflections in relation to the other participants and to the art project.

Coding focused on interactions and relations

In the following text, the quotations of the students presentations are represented in the right column of the table and in the left column there are codes which I have done from a reflective practitioner's perspective. This coding is focused on studying how the students relate to and interact with other participants, artefacts and technology in the learning environment, as a sociotechnical actor network. The selection of students' presentations quoted here aims to serve as examples of how students related to other actors. Both human actors, such as the pre-school children and non-human actors are represented here, such as my original visual images and the instructions for the assignment. The purpose of this relational focused coding of the students' presentations is to investigate what has happened in-between actors in the learning environment as a

sociotechnical actor network. The idea with the focused coding is to follow the students as actors, to visualize how they interacted with other actors, to show how they thought about and related to those other actors, and to investigate how this interaction subsequently influenced their creative processes.

The students helped me learn more about participatory art

I find it important to clarify that what I am studying here is my own design of the participatory art intervention, where the students stories help me understand what worked in my design, and in which ways it worked. This means that I am not analysing the students' art works or creative processes per se, the students presentations are only studied to mirror the outcomes of my own design. Why is this important to clarify? Well, because the coding could easily be mistaken for an evaluation of the students' performances according to some kind of educational taxonomy. It is important to understand that my intention here is not to evaluate the students' presentations or performances, I am merely being assisted by the students' descriptions of their creative processes, to evaluate my own design of the participatory art project. The focused coding highlights how the students relate to and interact with some of the actors in the learning environment. Examples of actors in this case are; the original visual images which I had designed and which the students had received as vector based files, the digital sound files carrying the recordings of the preschool children, but also the preschool children themselves, as creators of the sounds and as receivers of student's visual images via video game that we planned to make.



Figure 5.1. A student's transformation of one of my original visual images according to the preschool children's sound interpretations

The image above (figure 5.1) shows my original visual image in the upper left corner, as it was presented to the preschool children at the sound sessions. The other three images were created by a graphic design student as transformations according to the preschool children's sound interpretations. The student who made these images told us that had decided that she should first try to listen to the children's sound interpretations, and not pay so much attention to the written information about what the children had said, that came along with the sound files.

<p><i>(The initial negotiation about the order of things invited the students to participate in an open-ended discussion)</i></p> <p>relates to written information</p> <p>design decisions</p> <p>relates to sound</p> <p>reflects on how sound and original image affected comprehension</p> <p>design decisions</p> <p>relates to preschool children as both creators</p>	<p><i>Student: Should I start with showing the original image?</i></p> <p><i>Teacher: Yes, because we want to compare them, and to see the starting point.</i></p> <p><i>Student: And perhaps I should play the sound?</i></p> <p><i>Teacher: In which order do you think we should take it, Sol?</i></p> <p><i>Sol: Well, yes, that which is most interesting for the audience, and that is perhaps to hear the sound?</i></p> <p><i>Student: Then I will play the sound too.</i></p> <p><i>Teacher: Perhaps it is interesting to hear the sound first, shall we do so? Because the sound was the starting point.</i></p> <p><i>Student: Yes. And here is the sound (plays the sounds). The first image (shows the first image) I was thinking, well, the explanation said that it was an insect and a bum that was farting, so, the I tried to make something that looked a bit bum-ish, perhaps. With quite dim colours, and then light and I think that this 'pssssss' (imitates a sound that she has just played) sounds like wings, as it flies. The second image, a bit bum-ish, and the third (shows image two and three).</i></p> <p><i>Teacher: What kind of expectations or presumptions did you have? Or Sol, perhaps you would like to comment first?</i></p> <p><i>Sol: Really nice! I'm wondering what you were thinking while doing the work, did you imagine working for these children?</i></p> <p><i>Student: At first I was thinking, now I will only listen to the sound, and work from that. But it was difficult, because when you have seen the image you already have a notion of what it might be. So, then I started with the presumption that it was an insect and that I would keep it simplistic.</i></p> <p><i>Sol: Did you think about the, so to say, target group? (referring to the pre school children)</i></p> <p><i>Student: Well, yeah, I guess I was thinking that it was children, and that the children should still be able to</i></p>
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and receivers	<i>recognize what it is, when you show it to them.</i>
relates to design of original image and preschool children as receivers	<p><i>Sol: How did this affect you?</i></p> <p><i>Student: I thought that the original image is very simplistic and children-friendly so to say, so I wanted to keep it like that and not to make it too diverse.</i></p>

Figure 5.2. Example of a student's final presentation of her artworks and creative process

This student quoted above (figure 5.2) told us that she had first had an idea that she should try to listen to the sounds, that is, to the recordings of the preschool children's sound interpretations and work with her visual images with the sounds as a starting point. She told us that, she had soon realized that other sources of information, such as the written notes about what the preschool children had said about their interpretations, and the original visual image in itself affected the way she interpreted the sound recordings. I can see how the student went through these steps of approaching the task from different angles, because the assignment in itself was open for interpretation. The focused coding shows how the student related to various non-human actors such as the sound recordings, my original visual image, and the written information about the preschool children's interpretations. The student made a decision to compromise, and created one image based on the combination of the two sounds and interpretations and then made a series of variations originating from her image. The coding also shows how the student's creative process was influenced by the preschool children as actors, as she was thinking about the preschool children both as co-creators of the sound art and as the target group, that is, the receivers of the results.



Figure 5.3. Example of a student's new versions of the original image.

The image above (figure 5.3) shows my original visual image in the upper left corner. The three other images are the graphic design student's transformations of the original image or, in this case, rather new visual image, as interpretations of the children's sound interpretations. The following passage (figure 5.4) shows how the student reflects on the creative process during her final presentation in class. This student had been engaged in a problem of discrepancy, which she found between how she experienced the children's sounds while listening to them, that is, her own interpretation of the sounds, and how they had been described in the written information.

<p>relates to sound design decision</p> <p>relates to the preschool children as creators via the written information</p> <p>design decision of wicked problem</p> <p>refers both to sounds and to written information and finds no contradiction</p>	<p><i>Teacher: Now it's time for the next image.</i></p> <p><i>Student: Okay, this is the original (shows the original image) And the sound for the first, oh my what is this (plays a swishing sound) I thought it sounded like a wind swishing by, so I made this image (shows the first image)</i></p> <p><i>But the kid thought it sounded like someone whistling so then it had to become this instead (shows the second image)</i></p> <p><i>Sol: It was the comment of the sound?</i></p> <p><i>Student: Yes, precisely.</i></p> <p><i>Sol: Then, the child could probably not whistle, because you don't learn that at such an early age.</i></p> <p><i>Student: But I made two variations of it, because I thought that their sounds sounded like a wind.</i></p> <p><i>Student: The, the second sound (plays a sound that goes brrrrmmm) the children thought sounded like a boat (shows the third image) (plays yet another sound that sound like a chord of rreeiiiiinn rreeiiiiinn) And both these sounds are the same, that it rains, so that was really easy. The image looks like this (shows the fourth image)</i></p>
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Figure 5.4. Example of a student's final presentation of her artworks and creative process

The student quoted above told us how she had worked with the problem of the discrepancy between her own interpretation of a sound, and what the written information stated that the children had said about that same sound. The student solved the problem which I would think of this as a *wicked* design problem, referring to Rittel (2010 [1972]), by making two versions of the image. The student decided to compromise by making one version according to what she learned from the written information about the children's intentional meaning of the sound, and one version according to her own experience and interpretation of the sound, while listening to the sound files.



Figure 5.5. Example of a student's transformation of an original visual image, according to the preschool children's sound interpretations

The image above (figure 5.5) shows my original visual image in the upper left corner. The three other images are transformations created by the graphic design student whose presentation is quoted in the following passage. During this student's presentation (figure 5.6) the issue of interpretability came up to discussion again, but now from another perspective. The student opened the presentation with reasoning about the clock as a strong symbol which the children already had learned to connect to certain sounds. The student suggested that because the clock was such a strong symbol which the children were very acquainted with, a result of this

might be that the space for the children to interpret was delimited by the design of the original image. I confirmed that the student was right, and started to explain and talk about, some of my design decisions with the student and the class. I told them that the image of the clock was an example of an image which I deliberately had designed to be less interpretable and more connected to a specific sound, to make it easier for the children to get going.

<p>relates to the original image and the assignment</p> <p>reasons about how the children have come to the sound interpretations</p> <p>design decision</p> <p>(I confirmed the student and shared some of my thinking behind the design of the original images with the students)</p>	<p><i>Student: (plays a sound where the children say rrrriii rrrriii). I thought it was difficult to start with a clock because it's a pretty strong symbol which all children already know. (plays the next sound where the children goes koo-koo-koo-koo) (and plays yet another sound where the children say tick-tack-tick-tack) It feels like all of these sounds are such things which they have learned to relate specifically to the clock, so all I have done is to clarify that.</i></p> <p><i>Sol: I choose to make some of the visual images very easy to interpret and very tightly connected to sounds, because we didn't know if they (referring to the preschool children) would be totally confused and not be able to come up with anything. And then I made some images very easy to associate to certain sounds, so that there would be some images which could function as an entrance.</i></p> <p><i>Student: This sounded like an alarm clock.</i></p> <p><i>Teacher: Yes, right.</i></p> <p><i>Sol: And this is also an analogue clock, which is interesting because it's easier to make an analogue thing into a symbol, as all digital things look pretty much the same.</i></p> <p><i>Teacher: Yes, that's true.</i></p> <p><i>Student: Yes, I was thinking about this with the clock as a symbol, that perhaps it will not look like a clock much longer, but more like something digital.</i></p> <p><i>Student: (shows the next image) Here is the cuckoo clock.</i></p>
<p>relates to sound</p>	
<p>refers to the semiotic problem</p>	

	<p><i>Teacher: And there is a cuckoo there, as well.</i></p> <p><i>Sol: I see what you mean, that some of the visual images don't have as much interpretative space as others, and that the assignment varied depending on which image you got.</i></p> <p><i>Teacher: Yes, some are more understandable, or specific.</i></p> <p><i>Sol: And some images are not possible to identify as something concrete.</i></p> <p><i>Teacher: This in itself is interesting.</i></p>
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Figure 5.6. Example of a student's final presentation of her artworks and creative process

The realism factor

In the example presented above, what I refer to as the realism factor in the design of the original visual image had caused an anticipated sound interpretation. The more realistic images were designed to look almost like something that the preschool children would recognize as connected to a sound, for example a clock, an insect or a bird. My idea behind this design was that if some of the visual images appeared as familiar to the children, this would make them feel at home and secure to start exploring the world of sounds. I thought that this would be particularly important in the beginning of the sound sessions at the preschools, so I made a few images which were really easy to associate with familiar sounds. Just like the student had realized, this original image was designed to be recognized by the children as familiar and to create a feeling that it was safe to start making sounds. My main intention with the design of the original visual images was to stimulate the preschool children's creativity, so that they would feel encouraged to make sound interpretations to the images. Some images were designed to be more predictable than open for interpretation. These images were designed to feel familiar and easily associated to a well-known sound, aiming for the children to feel safe and brave enough to get going, to start imagining and making sounds, so that they could

then continue to make sound to the more abstract visual images. In the follow-up dialogue which I had with the game maker, I asked him how he had experienced these design issues, because I remembered that we had discussed them during the project period.

Sol: When I made these images, which were iconographic, I didn't design them to be immediately recognizable as in a sign for a Post office, but I designed them to be interpretable. Some images were designed for recognition connected to a sound, for the children to get encouraged to start making sounds and then continue with the more difficult images, whereas some of the images were designed to be interpretable in a very broad sense

Game maker: I remember that you had some sort of a scale, where images were more or less interpretable, and some were in-between, and as I understood it you were also interested in seeing what this would result in, if the abstract images would give more interpretations, to get a confirmation of that

Sol: I retrospect, yes, from the beginning I designed the images for the participants, I made for example an image which I understood that they would interpret as an owl, because I thought if I only make abstract images which you don't recognize at all, you can become afraid and scared and a little anxious for starting, and therefore I made some images that would be easier to connect to a sound, for the children to get going and feel that this is easy. Since then I have read in a book that this is called priming.

Game maker: Mmm

Sol: You sort of familiarize the brain with patterns that it already knows, to help it see other patterns which it has never seen before. But I didn't think of it that way, I was thinking of it more like a secure base to have something which you are familiar with makes you feel secure.

Game maker: Yeah, I was thinking like that back then, and this was something which we discussed at one occasion

Sol: Yes

Game maker: When you showed some image which were more clear in what it was supposed to mediate, and I asked, don't you want to make it more abstract, but you said, no, some images are going to be, and then we talked about that. I was thinking that it is very designed and that this is good, because you also need a frame of reference to what

kind of things there are, and what kind of area of interpretation we are placed in, roughly speaking

Sol: Mmm

Game maker: It's not about abstract themes like love or friendship, it's about objects, and what kind of objects, often single objects

Sol: Mmm

Game maker: Because otherwise you could interpret it as anything, and then it becomes very difficult to move around in that room of interpretation.

Sol: No, it was creatures or things, that's what it was

Game maker: So, with this, what you referred to as priming, you also put up the framework for which sort of interpretation you are going to work with.

Sol: Yes.

Game maker: So that they can, in that context, think of how to interpret this thing, and oh, this is unclear, and then it becomes various renderings, where the priming makes them aware of where they are, of the context.

The game maker suggested that my design of the original visual images acted as a frame of reference for the preschool children. He argued that I had framed a certain category of things with the design of the visual images, concrete things rather than abstract concepts. The things represented by the images would then serve as a frame for the children to understand what kind of world they were placed in, what kind of area of interpretation. He suggested that this had probably made it easier for the preschool children to understand what kind of interpretations they were expected to do.^{*/}

The abstraction factor

Some of my original visual images were designed to be interpretable in a broader sense, and I thought about these images as being more abstract. I was thinking about this design intention as a kind of artistic premise, where the visual images should be interpretable, more as works of art than works of design. The idea

was to facilitate for the children to feel more free to come up with and follow whatever ideas that occurred at the moment, to provide prerequisites for fluency and originality in the sound interpretations to occur. However, if many of the visual images would appear as too unfamiliar, I thought that this might cause problems by making the children feel insecure and not comfortable enough to freely explore what the images might sound like. The design premise for the original visual images of the project was that they should serve as tools for initiating a creative processes, where the most important function was to inspire preschool children to feel invited to participate in the experience of creatively inventing sounds. In a normal product design situation, the designer would have the intention to make the users feel familiar and safe, and design for a situation where users immediately would recognize the idea of the product and understand how to use it (Colborne, 2011; Norman 2013; et al.). However, in the case of designing art, the design intention would differ from this, as one of the traditional core aspects of art is that it is expected to be open to interpretation. In that sense one could also say that art it is not fully expressed until it interacts with it's audience.

Art's openness for interpretation

The issue of art's openness for interpretation came up to discussion in the dialogue with the game maker. I introduced the dilemma of students often feeling anxious about making art, and related this to self-expression and to the individuation process which starts when you are a child, and continues through adolescence and adulthood. The unease regarding artistic self-expression can also be considered in relation to artistic freedom and existential anxiety, which implies being personally responsible for your artistic expression and which may require an expanded individuation process. In this dialogue, I proposed that art's openness for interpretation provides opportunities to practice this kind of expanded individuation through artistic self expression. In the reflective practitioner's

dialogue with the game maker we also discussed wicked problem solving in art. In art you will experience that there can be various different ways of looking at a problem and formulating that problem, depending on which individual you will ask. In art, none of these answers is the right answer, and that all of these answers will to some extent represent part of the truth, from different individuals' perspectives.

Game maker: I think that, what was investigated here was the border between the pictograms which are quite clear and art which is interpretable

Sol: Yes

Game maker: I see art as, that you have your own intentions and you use it to investigate or to process things, but the product, the exhibition, the work of art is a material of discussion, art is something which is used to create opportunities for discussions, and the tangible work of art which becomes the primer for those who are present and who are experiencing the art

Sol: Mmm

Game maker: And in a similar way, within this smaller project we have created a primer for the children to explore and interpret this concept of art which involves all kinds of possible renderings created by those who participate in making the participatory art work. This becomes especially evident as we go through the whole circle and involve everything which they have created (refers to all participants) in even more art (refers to the video game made as a result of the participatory art intervention). I think this is interesting.

Sol: Yes, and what you point out is also the difference between art and design, because you design for the user to understand, not for a space of interpretation.

Game maker: No, you work against the interpretability (refers to, in design), whereas in art you try to frame a certain space for interpretation, a space which covers some controversies and contrasting ideas which are interesting without making that space to grand because then you can avoid this anxiety. Because the grander this space becomes, the more you have to take in and ponder about, and the more energy it takes, perhaps to experience such art. The art which I think is most uninteresting is the art which come close to

design, where there are quite clear messages which you understand that they try to communicate.

In my design of the original visual images I had to take both the realism and the abstraction factors into consideration. The realism factor as in the designer's perspective of aiming to make the visual images appear familiar and understandable and the abstraction factor as in the artist's perspective of aiming to make the visual images open for interpretation. Whereas design for recognition and understanding would be the common goal in product design, in fine arts the goal would rather be to design the artworks for interpretability. Artist Jennifer Seevinck (2017) discuss a similar way of thinking about design in her writings about making participatory interactive art. where she talks about design for unpredictability and understanding.

There is a tension between influence of the artwork and control of the artwork. Emergence, with its characteristic unpredictability, pushes the envelope of how we may design and understand participant emergent. It can point towards more complex experiences of creativity and ambiguity. Designing these can, however be challenging because participants can disengage. If they are frustrated they may give up and leave. These concerns relates to unpredictability. Unpredictability is valuable given its necessity for novelty, creativity and emergence. But how can we engender these aspects while sustaining participant emergent? One answer is to facilitate participant understanding of what is going on in the system, at least in part. That is, to design for participant anticipation of the events and to generate system feedback to respond to participants actions.

In her design of interactive art, Seevinck uses priming techniques, inspired by computer aided visualization research (Ware, 2004), which make users prepared to look out for emergent and unfamiliar patterns, by first showing them some familiar ones. So the techniques are helping participants to feel at ease with the unknown situation, by showing them something which they are already familiar with. This is a similar way of reasoning, compared to when I designed the images for the preschool sound sessions.

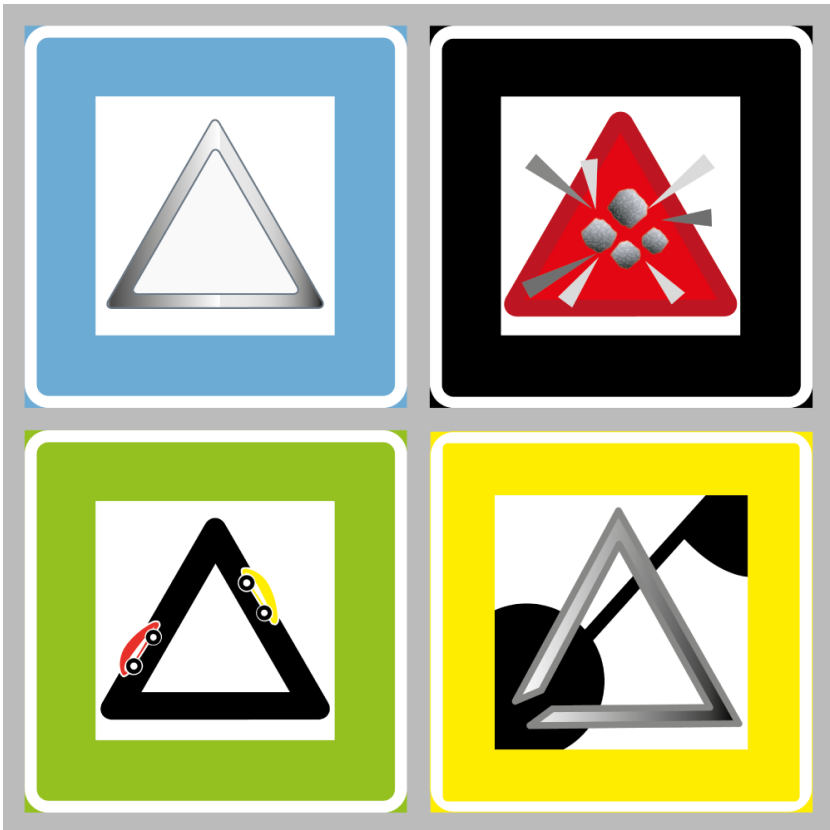


Figure 5.7. Example of a student's transformation of an original visual image, according to the preschool children's sound interpretations

The image above (figure 5.7) shows my original visual image in the upper left corner. The three other images, are transformations created by the graphic design student, based on a mix of the original image and on the children's sound interpretations. This student (quoted in figure 5.8) had worked with an image with a similar design intention as the previous one, namely to feel familiar and easily connected to a sound. I had designed this image so that it could be associated to the small metal triangle which is often used as a music instrument in preschool music lessons.

relates to sound and written information	<p><i>Student: I had taken out three different sounds (plays the first sound). This is what the image originally looked like (shows the original visual image).</i></p> <p><i>Sol: What did they say? (refers to the written information concerning the preschool children's interpretations)</i></p>
design decision	<p><i>Student: They said that it was throwing something at a sign, and that was sort of what I heard as well. And then I tried to make that appear, somehow (shows the first image and giggles) Then I thought that you could have a sign as the foundation against which something is being thrown and that it was a bit dangerous, so I put some darker colours and so on.</i></p>
relates to the preschool children as creators and receivers	<p><i>(plays a sound and giggles) Here, you could sense what they were thinking (refers to the preschool children) and then I made this first, it is a stock car race track for children, and I thought that they would look fast being thin at the front and broad at the back (refers to the cars) and with happy colours. Then I made this which was even more abstract, where the triangle became like a road (the image is not represented above).</i></p>
design decision	
refers to sounds reasons about interpretation of original image	<p><i>(plays the third sound which goes pling pling) This was when they thought that it was a triangle, most of the sounds were, it was such a one which you played when you were little. And I tried to be a bit more abstract than just adding a stick and so on. And I was thinking that, perhaps they don't know (refers to preschool children) how music notes, that you can see it immediately, that it is a sound, anyway, and pretty light colours because it is a light sound.</i></p>
relates to preschool children as receivers of novel information	

Figure 5.8. Example of a student's final presentation of her artworks and creative process

My design intention with this specific image was to make it easier for the children to start thinking in terms of sounds and sounding rather than being occupied with trying to figure out what the images were supposed to be or represent. While designing the original images I had to take into consideration the complexity of the possible reactions of the participating children and from that work with the

balance of combining realism with abstraction to support art's openness for interpretation yet create a safe space where the preschool children would feel encouraged to start exploring the creative process. The student confirmed (figure 5.8) that most of the sound interpretation had been connected to the triangle as a music instrument, but that the children had also presented alternative interpretations, such as a slot car racing track and a signboard which someone was throwing stones at. This student referred to colours and sounds as connected to each other, where light sounds should be represented with light colours. She also made connections between darker colours and potential danger, and told us that happy colours had been used for the slot cars. The student pointed out that a music note had been added to the background of one of the images, because the student thought that the children might not know that you can recognize that it is a sound, directly through the music notes. This student had obviously been interested in the problem of transitions between different sensory languages which was expressed in terms of a creative mixture of colours representing sounds and affective states and of signs representing sounds and so on, something which was of course, in line with the ideas behind the participatory art project.



Figure 5.9. Example of a student's visual images, created according to the preschool children's sound interpretations and her own interpretations

The image above (figure 5.9) shows my original visual image in the upper left corner and three images are made by two different students, who had worked with the same original image, as a starting point. During the student's presentations (where one of the students is quoted in figure 5.10) it became clear that students who had worked with the same image as a reference, were aware of each other's processes and had approached the problems in similar ways, but with slightly different outcomes. The students seemed to have been more interested in comparing their artworks-in-progress with the children's sound interpretations, and more concerned about

how the children would experience their images, than they had been in comparing each other's work. Perhaps this was partly due to the fact that there was no competitive element in the assignment, as all students who wanted to participate with their images to the production of video game were free to do so.

<p>relates to written information and compares with sounds</p> <p>relates to other student's image design decision</p> <p>relates to how receivers of the image would see it</p>	<p><i>Student: (shows the original image) (plays the first sound which sounds like eating) It was just ginger bread cookie, but I thought that this sounds like the other sound, which was eating, as well, perhaps I should have added that. (shows the first image) It looks like this, it looks a bit like yours (refers to the other student who had worked with the same original image as a starting point) I just changed the form a little, and made it somewhat happy. It is a ginger bread cookie which someone has eaten a piece of and I thought that if you have it like a star then it is possible that you don't see what it is, but if you take a bite of it then you see that it is a ginger bread cookie.</i></p>
<p>relates to other student's image</p>	<p><i>Then the next sound (plays a sound that goes brrrrriiiiiibrrrrriiiiiii) (shows the second image) It was a bit of the same thinking there, but I had thought that I would do a surrounding tunnel as well, but I thought that these could have been rounded. I thought is a similar way, that it was a train coming (refers to another student who has worked with the same original image as a starting point) and I was thinking about symbols for trains. And I was thinking that perhaps one should have done an old fashioned locomotive so they understand (refers to the preschool children) but I really think that those who are children nowadays perhaps would see this more as a train (laughs)</i></p>
<p>relates to semiotic problem</p> <p>relates to preschool children as receivers</p> <p>(I reconnected to the work-in-progress as I became curious of the student's decision process)</p>	<p><i>Sol: When I went around and photographed you last week, someone had made a train against a red background which looked very modern, could that have been you?</i></p> <p><i>Student: Yes, I was working on that first</i></p> <p><i>Sol: A black train that looked a lot like a traffic sign?</i></p>

<p>relates to colours and feelings</p> <p>relates to written information</p> <p>relates to assignment</p> <p>thinks about sound</p> <p>design decision</p> <p>(I confirm that the student's were free to work anyway they wanted)</p>	<p>Student: Mmm</p> <p>Sol: And then you continued to work on that?</p> <p>Student: Yes, I wanted to make some happier colours, it was too gloomy I thought.</p> <p>Student: Then it was a sound in the end which had a question mark (refers to the written information about the preschool children's sound interpretations) which was just, and then I thought I could interpret it somewhat how I wanted (laughs and plays the third sound twice, because it is very short) It was a question mark so I sat down and thought about what this could be, and then I came up with, that it might be a little fox, just out of the blue (laughs) and I kept some of the form up here, but I thought that the sound felt a bit pointier, and happier, this is a bit heavy (refers to the original image) so I made it like this (shows the third image)</p> <p>Teacher: Any comments?</p> <p>Sol: It's good that you have allowed yourselves to work and to interpret in various ways, just like you describe right now, that you have worked both freely and a bit more controlled.</p>
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Figure 5.10. Example of a student's final presentation of her artworks and creative process

When this student presented her work (figure 5.9 and 5.10), she related both to the sounds as she had perceived them, to the written information and to her peer student's artworks, as they had been working with transforming the same original image. She then started to talk about, what I refer to as a semiotic problem that, made her re-work one of her visual images, which was an image of a train. I found this interesting. I had noticed her other versions of the train when I was visiting the classroom the week before, some were old fashioned and some were modern, but they were all very nice from a graphic design perspective, I had thought. What was interesting was that she had created so many alternatives, and that she had been thinking about how children today would imagine that

a train looked like. Unfortunately this student did not show any of these previous, alternative images at her final presentation, and this was because I had not deliberately asked the students to present the works that they had deselected. I experienced that the student was a bit worried about presenting her own interpretation of a sound which had no written information, that is, the little fox. I could also sense that she had really enjoyed making that image, and that it was most probably her favourite.

Preschool children's expectations of music

While designing the original images I had to take into consideration the complexity of the possible reactions of the participating children and from that work with the balance of combining realism with abstraction to support art's openness for interpretation yet create a safe space where the preschool children would feel encouraged to start exploring the creative process. However, some of the preschool children's interpretations really surprised me, like seeing a train coming out of a tunnel in my original image presented above. Although the preschool children's sound interpretations are not objects of research here, however, regarded as art works they had a major influence on the participatory art project as a whole, and in particular on the graphic design students' art works and creative processes. I discussed this issue with the sound artist in the second one of the recorded dialogues that we had where he talked about his expectations of his sound project at the preschools, and of the creativity of preschool children.

Sol: And, we had quite a long talk before and we had like two projects to compare the results of, and I know that we came to the conclusion that the younger the children were, the less layers of normative prejudice they had, against what is music and what is art, they're much more open to just listening to sounds, and you said that the teacher students were much harder to, that you have to peel off the layers of culture that they have achieved, to make them open to sound.

Sound artist: Yes, that's quite interesting cause the children don't have any preconceptions about what music is, they just do things in the

present, they don't evaluate in the same way as when you grow up, as you say, all these layers, you think you learn something about music but you almost forget to be in the present.

Sol: Mmm.

Sound artist: And try to be open-minded and discover things. It's very interesting to work with children in that sense, because they are so open-minded.

Sol: Yeah, it makes me think of, you know like the 60s with Yoko Ono and John Cage, how they approached this subject of just listening to sounds, the graphic notation of music, I'm thinking that maybe you're inspired by those kind of theories?

Sound artist: Yeah, I think it's very interesting both working as a composer and with ideas about education, and try to explore different ways of communicating with music and sounds.

The sound artist's opinion was that preschool children are more open-minded than older children and adults, when it comes to listening to sound art and that they can appreciate sound art without prejudice. His experience were that the younger the children were, the less expectations they had about what music sound like. When I discussed the unexpected and surprising sound interpretations which the preschool children had come up with, with the teacher, he said the assignment had been good because it turned things around.

Sol: I'm wondering about the difference between how the students would have worked normally and how they worked now, because now they worked with one and the same image during the whole period, and in this sense they explored this image thoroughly. How do you think this affected the students' creative processes?

Teacher: I can imagine that in this situation, the students were thinking and reflecting more during the process, and above all mainly thinking along new lines, and this thinking in new lines might also make you change your own interpretation of what you create.

Sol: How do you mean?

Teacher: Well, you often have preconceived ideas about what something should be like, or look like, but art turns that on edge and makes us see things from another direction, which we are unfamiliar with. And this goes for typography as well, where solutions can be

better or worse, but sometimes solutions that are really appropriate are solutions that one didn't even think of as possible.

Sol: Unexpected solutions?

Teacher: Yes, precisely, and this is sort of a working method to encourage that.

Sol: Because the children interpret in a fantastic way, like this image of an insect which becomes a butt that farts, it's the creativity of the children, do you think that sort of infected the students?

Teacher: Yes, I'm pretty sure of that, yes, I am.

Sol: Did they play the sounds aloud now and then?

Teacher: Yes, they did, yes, they did. So, this was a way of provoking you to think in other ways.

Sol: Because of the sound files, I think also, because it would have been different with only words describing how the children had interpreted the images?

Teacher: Yes, the auditoria factor is important too, I haven't worked with sounds before...

The teacher said that he thought that the intervention had provoked the students to think in new ways, along new lines, about interpretation and about the visual images that they were making. He connected this to students being inspired by the creativity of the children.

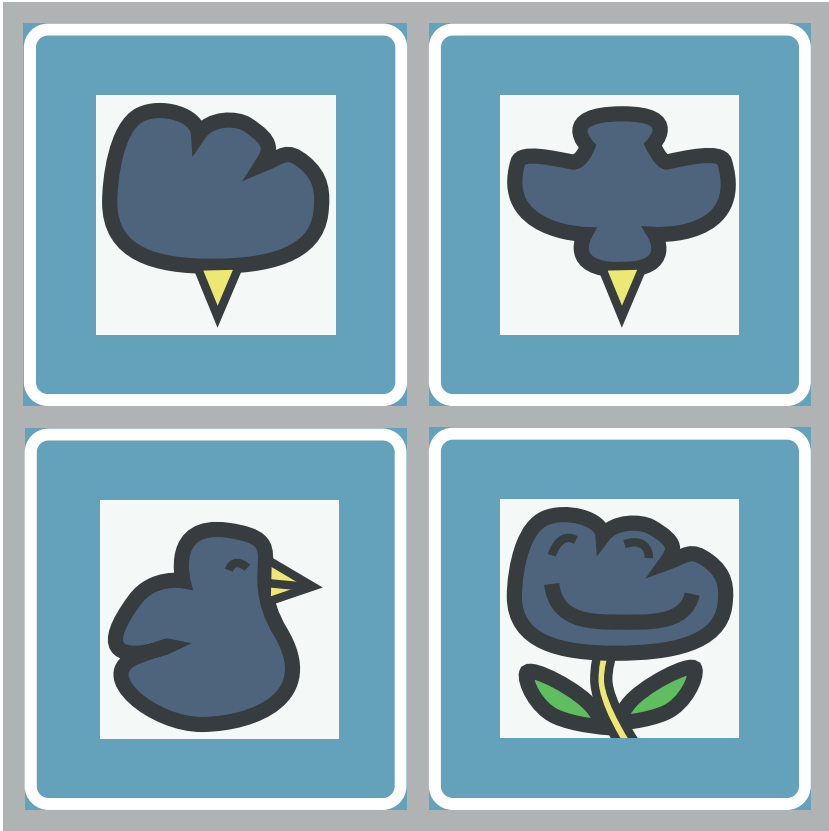


Figure 5.11. Example of a student's transformation of an original visual image, according to the preschool children's sound interpretations

The image above (figure 5.11) shows my original visual image in the upper left corner. The other images, are transformations created by the graphic design student, whose presentation is quoted in the table on the following pages (figure 5.12). In this case the original image had generated many different sound interpretations from the preschool children, and the student showed us six different variations which ha had developed from the original image.

<p>relates to original image and interpretations</p> <p>refers to written information</p> <p>relates to how the preschool children might have seen the original image when they made their interpretation</p> <p>design decision</p>	<p>Student: I have made an image where I gathered all of my interpretations, to make it simple to compare them. The images which I have worked with can be interpreted in many different ways (shows original image). There were five interpretations and I did them all. Yes, I can start with the sounds. (Plays the first sound which is a swishing sound (laughs). Yes, I interpreted it like this (shows an image) and if we compare it to the original, this is a bird which is flying. Then I interpret this as wings and tail feathers and I was thinking that it should be that way, that they make of it (refers to the preschool children) if it should fly, anyway. But I felt that I wanted to keep it quite close to the original form.</p> <p>That was a pretty much, how I tried to work, by thinking: What in this, will be interpreted as a bird?</p> <p>(plays the next sound and shows the next image) This is then, licking on an ice cream, and I just marked some kind of cone, no major change.</p>
<p>points out problem in assignment</p> <p>relates to the preschool children as creators</p> <p>design decision</p>	<p>(plays the next sound where the children sound happy and say ja-ja-ja) (shows the next image. And then we have a happy flower (other students in the audience laughs) Yes, it is very happy, and this was the trickiest, to see how this could be a happy flower, so if you look at the image (shows the original image again) so, happy? Yes, I don't know but I think that it must be this form (points out a line in the projected image). Then I marked that by adding a small mouth there, then I thought that it became a bit like the logo of the Social Democrats, yet blue, some sort of rose with a face.</p>
<p>refers to sound and written information</p>	<p>(plays the next sound and shows the next image) And this is lightning. And then I went on the cloud and the yellow as the lightning. (plays the next sound which goes pip pip pip) Then we're back at a bird, and then I thought that if you turn the image a bit, I thought and then I marked the beak and added an eye.</p> <p>Sol: This bird had another character than the first one, which was more like a diving bird of prey.</p> <p>Student: Yes, that one is flying.</p> <p>Sol: Like an eagle or something and this one is a rather</p>

<p>relates directly to the sound</p> <p>(I shared some reflection-in-action as a designer of the original images with the students)</p> <p>imagines how the images might have been shown at the sound sessions</p>	<p>cuter.</p> <p>Student: Yes it's the pip pip pip (imitates the sound) Sol: So, it is the sounds that have affected you?</p> <p>Student: Yes, yes, yes (shows an image with all six images) If you want to see them together</p> <p>Sol: Because we discussed this: how much does the text where you can read how the children have interpreted it influence you? But in this case there are two variations of a bird, influenced by the sounds as well?</p> <p>Student: Yes</p> <p>Sol: You didn't just have the bird as a starting point but also thought about the sound, if it was a mild sound or a dangerous sound. It feels like these images which are more open are better, I mean, that they generate more interpretations, and that it becomes more fun for those who take over, than with the images which are very closely connected to a concrete thing.</p> <p>Student: Yes, it was rewarding because it is possible to see a bird both from here and from here (refers to that the images were square and possible to turn around while showing them, and there were no marked up or down) I don't know how you showed them?</p> <p>Sol: I think they were instructed that there were no particular up or down.</p>
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Figure 5.12. Example of a student's final presentation of her artworks and creative process

This student (figure 5.11 and 5.12) described his work process and explained how he had investigated the original image, in each case, trying to recognize precisely what it was in the image that had made the children interpret it in that way. He had listened to the sounds and tried to imagine the way the children might have looked at the original image, to see if he could understand the children. We discussed the two different bird interpretations, and the student told us how he had come to the conclusion that the original image had most probably been turned around, to generate the difference in

what kind of bird that the children had recognized. I find it interesting that the student had spent so much time trying to figure out the most probable relations between how the preschool children had perceived the image to come up with certain sounds, in a way, like tracing the path of a creative process. The happy flower appeared to be the most puzzling interpretation for the student, and I agree that this interpretation was one of the unexpected ones. I wanted to know how the teacher had experienced this notion that I got, that the students seemed to have formed an empathic relationship with to the children, via the sound interpretations.

Sol: I think it is very interesting that the students connected to the children via the digital sharing of the sound recordings, that they formed a relationship with them, something which you can also see happening in the Internet between people who have never met in real life, like attachments formed in social networks, and via exchange or digital information, which was also the case in this project, and I also found that the learning environment changed from being more hierarchic where they were going to learn a software to becoming more of a networking environment, where they contributed with knowledge

Teacher: It must be pretty optimal to do like this, mustn't it, to have this interaction between each other.

Sol: Yeah, I interpreted it so that when they were trusted with responsibility, they also felt valuable, and then you become more engaged. This is a problem, when you view people as learners and not at contributors, which is one of the ideas which I'm elaborating with. But, can you agree to this, that there was a change in the structure?

Teacher: Yes, it did, it was a structure which we had never worked with before, but I could see that it gave results.

Sol: But it was demanding that you would step down from your hierarchical position as a teacher.

Teacher: Yes.

Sol: And let go of this, no you can't come in here and do this art project because we have to do this, and they have to learn this. You just went along and could see the possibilities. You stepped down and went into this group and started to develop your way of working.

Teacher: Yes, I thought that this was very stimulating, that this was something new which I was very curious of and I thought that was great fun to be in this, and the students thought it was fun as well.

Sol: It demanded of you to become a co-creator

Teacher: Yes, of course

Sol: Because, according to what you just told me, you developed your method of teaching, by seeing that you could use the images instead, and for this you had to use your creativity and shift from being in a hierarchical structure to becoming a person who participates in creating something new.

Teacher: Yes, but it was interesting and a bit of a challenge as well. It's good to have new inputs, otherwise you just grow at the same place and get stuck there, like a tree. When things like this happen, you should be happy and simply enter unconditionally. It created new inputs and one got sort of another kind of dialogue with the students, and everything that happened, the results, I think it is very fascinating visually as well. And from a learning methodological perspective it is fantastic, it is inventions that are made, grounds which you haven't stepped on earlier.

By the end of the reflective practitioner's conversation with the graphic design teacher, I understood what the teacher had tried to explain to me, about instructing the students to work with composition based on a balance between what the teacher referred to as form elements. I realized this because I started to think about typography which I had some prior experience of working with. What the teacher wanted his students to start thinking about, is actually all there is to play with when you design fonts in typography, there is only the composition of thinner or thicker lines and strokes in relation to a type area and nothing else. I looked at the images again and I could suddenly see that the teacher had encouraged the students to practice a similar kind of thinking about graphic composition as in font design, while working with the transformation of my original images. All of the students had been working with a balance between thinner and heavier lines and had added subtle details which changed the original visual images more than expected, just like the teacher had pointed out to me. This was quite clear when I looked at the student's transformed images, once

I knew it, but I had not thought about it before our conversation. It took me a while to understand that the teacher had actually transformed his teaching in relation to the participatory art project. The teacher's active interest in the project had been important for the progression of the intervention. He contributed to making the intervention work within the course by being flexible about how to apply the content of the curriculum to go along with the art assignment.

Sol: Did the students have discussions, while working with the images in the class room, and do they normally have that?

Teacher: Yes, they normally have a dialogue with each other, and in this specific case the students were fascinated by the fact that the images altered so much, and they hadn't really thought about that you could interpret the image in this way or in that way.

Sol: Did they move around in the class room to see what other students were doing?

Teacher: Yes, they did, because they thought this was very thrilling and they were curious to see what kind of solution their class mates had come up with

Sol: Would they have done that normally?

Teacher: No, not necessarily.

Sol: Because this is the situation in a preparatory art school, that you walk around to see how other students work, because you don't work in the same way and then it doesn't bother people because it's not like you're spying or peeking, but you learn from one another because everybody's got their own way of solving the problem, so you get inspired by seeing how others have solved theirs differently.

Teacher: This was something different, which we had not done in the graphic design course before, and it was actually good because of that, because it liberated things, and I could connect my knowledge to this. I could talk about how the image could be altered by changing the elements of the form, without telling the students exactly how, because you interpret things your own way, for example, in this image, in two different ways.



Figure 5.13. Example of two different student's transformations of an original image, according to the preschool children's sound interpretations

This image above (figure 5.13) shows my original image in the upper left corner. The upper right corner shows an image which was made by the student quoted in the table on the opposite page. The two images below were made by another student, who had worked with the same original image. Both students had in this case been occupied with the same problem, which was, how to represent the sounds of the potentially dangerous animals, the tiger and the bear, which the preschool children had imitated, while doing their sound interpretations.

<p>relates to written information</p> <p>relates to sound</p> <p>relates to children as creators and receivers</p> <p>design decision affected by thinking about the children</p> <p>relates to original image</p> <p>(I share my reflection-in-action with the students of semiotic issues arising)</p>	<p><i>Student: This image, it was quite clear, what it was. (the student plays two sound interpretations related to the image) The first sound was a bear and the second sound a lion. It became quite concrete what it was, a bear and a lion and first I tried various facial expressions, the sounds were very powerful, if I may say so, they sounded angry. So I thought about if I should make them crazy, but I felt, no, the feeling of making it for children and that children had had made it, probably took over, because they (the images of the bear and the lion) became quite friendly in the end. It didn't feel right to do them with a lot of bones and blood in their mouths, I don't know, I started quite detailed but removed some stuff to make it more clear.</i></p> <p><i>Teacher: They are quite concrete these (the student's images of the bear and the lion) if we look at the printed original image, perhaps one makes associations to that as well, or how do you interpret it? I would interpret it as a bear and that is because of the ears.</i></p> <p><i>Student : Yes, normally one would think so, with a round head.</i></p> <p><i>Sol: It is a bit interesting that I tried to make this image quite abstract, but they (meaning the children) have interpreted it as a bear and as a face, which is really quite interesting, when it is only a circle with some... (laughs)</i></p> <p><i>Student: ... with the minimal that one needs.</i></p> <p><i>Sol: So what is language really? How little is needed for such small children? (several people discuss with each other at the same time)</i></p> <p><i>[...]</i></p>
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Figure 5.14. Example of one of the student's final presentation of his artworks, where he discussed his design process in relation to the preschool children, both as co-creators and receivers of his artworks

The students in this case discussed this problem of how to design their visual images in relation to the children as co-creators in the participatory art project, of the sounds as artworks, and also the audience, as the receivers of the students' images. The children had

actually succeed to sound quite fierce in their sound interpretations of the bear and the tiger and the students discussed the dilemma with this, thinking about if they really should they stay true to the children's scary sound interpretations. Bot students adapted the expressions of their visual images of the animals, not only according to the preschool children sound interpretations, but to the imagined affect which the students thought that the images would have on the children. The result was that the animals looked more friendly on the student's images (figure 5.13) than they sounded like in the children's sound interpretations. The student quoted here told us how he started out making quite a fierce version of the tiger and the bear, with blood and bones in their mouths, because he thought that the children's sound interpretations were very powerful and angry. He told us how he had investigated several different facial expressions, but somehow, the images had changed during the work-in-progress so that they became rather friendly by the end of the course. This student stated that; *the feeling of making it for children and that children had had made it, probably took over*, which I think is quite an evident example of the empathic relationship which the students developed to the preschool children, during the creative process.

STUDENTS' INTERPRETATIONS OF CHILDREN'S INTERPRETATIONS

The graphic design students in this intervention, could decide if they themselves should try to interpret the sound files by listening to them, that is, to the sound interpretations which the preschool children had made, or, if they should also take the written descriptions of what the children said about the images, into consideration. The relational coding of the students' presentations in the table shows that, the students had approached this problem using a variation of strategies. Many of the students had related both to the original visual images, the sound recordings, the written

information, and to the preschool children as creators and receivers. Some students discussed the dilemma of the openness for interpretation in the assignment, and how they had solved it. Some students admitted that they were aware of the fact that choosing to work mainly with the written descriptions as a starting point, was easier than to work with another layer of interpretation. Some students highlighted the dilemma that they had experienced, by having to make a choice between their own interpretations of the children's sounds, and what the written information stated. Other students described how they had tried to listen carefully to the sounds which the children had made, but that it had been difficult, not to take the written information into consideration as well. Some students had worked in a more free way, getting inspiration from more than one of the different sound interpretations which the children had made to the same original image. Whereas, other students had transformed the original image according to their own interpretation of the sound files.

The dilemma of artistic interpretation

During the design students final presentations, it became apparent that many students had experienced this dilemma of various contrasting interpretations. The students had reflected upon this problem and had been engaged in listening to the sounds which the children had made, while looking at the original images, trying to understand how the children had come to this or that interpretation. The written information sometimes served as a clue and sometimes seem to have caused confusion and distraction. The students did not get exact instructions of how they should attend to the interpretation and transformation problem, they were only instructed to make variations of the original images, and I had also told them that they could solve this assignment in whatever way they liked, that there was no right or wrong way of doing it. The students had also received the preschool children's' sound interpretations together with some written information about what the children had

said about the images, what kind of creatures or thing they had thought of. The effect of the openness in the assignment, of how to solve the problem of interpretation and transformation, was that most students had to face the dilemma of artistic interpretation. Why is artistic interpretation so interesting? Well, firstly, you can experience that your own interpretation of an art work differs from another person's interpretation of the same work. Secondly, you can experience that the same artwork can be interpreted in various different ways, by the same person. This is an interesting experience, which is important for understanding others. In art, what appears as the right interpretation for you, is not necessarily in conflict with what appears to be right for others. Various interpretations of artworks is allowed to co-exist. I think the dilemma of artistic interpretation and transformation was both interesting and demanding for the students participating in the intervention. As the students interacted with the sound interpretations of the preschool children, they had to reflect upon the various forms of interpretation, and they had to decide which way they were going to approach this dilemma. Another aspect of this, what I would refer to as a *wicked problem* (Rittel, (2010 [1972])), was the students knew all along that the images which they were making, according to the preschool children's' sound interpretations, were also going to be exhibited to the same preschool children, as part of a video game.

Thinking about how others think

The fact that the students knew that the preschool children who had made the sound interpretations were going to be the audience of their artworks, caused a kind of double relationship to the children. The students had first related to the preschool children as co-creators and collaborators in the participatory art project. They had been listening to the children's sound interpretations, trying to understand how the children had experienced the original images to interpret them in such a way as they had done. Then, as the students were working with transforming the images, according to the

children's interpretations, again, they had tried to imagine how the children as an audience, would experience the images that the students were in the process of making. The students had to think about the preschool children both as co-creators in the common creative process and receivers of their images as artworks. According to contemporary psychology, this can be regarded as a process of *mentalization* (Fonagy, 2001), which means to think about how others think in an open and reflective way, trying to imagine how others may experience something, in a different way than you do. In this case, the students became engaged in mentalizing about how the preschool children might have experienced and interpreted things, to make the visual images match the children's creative sound interpretations. This was enhanced by the collaborative structure of the project, where the students felt responsible for the children.

A VIDEO GAME FOR COLLABORATION

The participatory art project was finalized with a revisit to the preschools which had participated. This time the sound artist, the game maker and I, went together to the preschools, equipped with a projector, a screen, some loudspeakers, two game controllers, a midi keyboard and two computers to set up the stage for the preschool children and their teachers to experience the artworks results of the project.

Game maker: I have designed the game world based on the colours and the way the students had worked with lines, and how you had worked from the beginning. Because I have tried to keep this iconographic feeling, so I also worked with thicker lines and so on, when I made that. I also thought a lot about that I wanted to connect the children's sounds with the new visual interpretations in a natural way, so that they became a couple, so that they could be fitted together.

Sol: Yes, that's right.

Game maker: That was a challenge, and that's why every time an image is shown you get the sound as well, so that you understand that it is that image. And then I did not investigate, which would have been interesting as well, the interpretations in relation to each other, but I did investigate to connect the students' images with the children's sounds. Because the children didn't know that the students had made the images to the sounds, so for them the images were new. So then I had to introduce the images together with the sounds, so that you would understand the connection.

Sol: Yes, it was smart to solve it with a memory game.

The video game was not designed for individuals to compete, but for two players to collaborate and for the whole group of children to help out in solving the problem of the game. The game was designed on the theme of memory games, using the images and sounds from the project as the characters. The two players in charge of the controllers directed a little cloud each, one black and one white.

Game maker: I didn't want it to be a game for one player, because I knew that would be boring, and now we had to adapt to the circumstances, but I wanted them to depend upon remembering together, that's probably why it became a memory game as well. I had this idea that they would move around in a world and when you hear this sound, you have to find out where, and then they would say, I have heard it here and this way they would remember together as a group to solve it.

Sol: Aha

Game maker: A bit like old role playing games where it was more about the communication within a group than about gaming. This idea came into the game, for example when the memory card was shaking and simultaneously making a sound, then someone could focus on remembering that, and help, because many things are happening at the same time, and the memory cards move away, but if someone follows a certain memory card, that person can say where it is, so this was a possibility of collaboration. Then the game didn't turn out to be very difficult, or hard

Sol: No, but all of the children helped out and shouted where the memory cards were, because they moved as well.



Figure 5.15. Example of a student's transformation of an original visual image, according to the preschool children's sound interpretations

The series of images above (figure 5.15) shows how the two clouds, one white and one black had to collaborate to hit the images and to turn the corresponding images around synchronously. When the players succeeding in finding a pair of corresponding images and hit them at the same time, those images would then turn into clouds and vaporize. To win the game, the two players had to collaborate by finding the corresponding pair of images, which were turned upside down as in an ordinary memory game, only in this sound memory game the images would also randomly shake a bit and give away their special sound.

The two players had to hit the corresponding images synchronized, and this was a bit tricky as the images would move around and hide behind the bubbles and even start changing colours at the more advanced levels of the game. This was also why the whole group was needed to solve the problem, because they could help the players to keep track of where the images went. In the dialogue with the game maker he told me that what he found sympathetic in this project was that the participants were at the centre of the project, and that the project was designed for them and not for an external show or art production. The game maker said that he thought that this was important, that it had created a factor of security for the participants to feel that they were there also for their own sake.

Game maker: Yes, well it is an interpretation of a memory game, and there are many things in the video game which you cannot find in an ordinary memory game, because it is sounds and movements, and that there is an environment which is out of control, where you cannot remove things to see, but you have to use the joysticks to steer the clouds. So there were many interesting things for them (referring to the preschool children) and I wanted to share that world with them. So, when you say that the experience and knowledge production of the participants is that main goal, what I wanted was to give them an entrance to that world so that they would get a feeling for what was possible in a short time, not necessarily that it would be the coolest game ever.

Sol: No, but I think they (referring to the preschool children) were pleased by recognizing their own voices and the voices of their friends, and they even said that they had made a video game, they even referred to the names of their peer preschool children when they heard the sounds, and they really recognized that they had participated in making the video game.

Game maker: Because I didn't want to make a game where the children's voices were glued into the game, for example it could have been a role playing game where a character which is super designed have a head which is one of the images and one could perhaps click on play and there would be a sound, that would have felt like it was their material inside another material.

Sol: I see, but now the whole game idea were based on their material, and on the fact that one could have a sound memory.

Game maker: Yes, the whole game idea and the mechanics of the game. And because this was not our plan from the beginning, there is a genuineness to it. I created this whole game idea and the world of the game from what they had contributed with and from what had happened, not from a preconceived plan.

When I proposed to the game maker that the participatory art intervention was designed to be on the participants' term, on the students' term and on the preschool children's term, then he added that the participatory art intervention hadn't just been designed on the terms of the participants, but the project were actually designed for the participants, and not for any other purpose. I agreed to this. The game maker had been presented with a kind of ready-made material, which he was expected to assemble, conceptualize, design and program an art work from, resulting in a video game. We came to the conclusion that the role of the game maker in the participatory art project was comparable with the role of a film editor in a film production, with a limited amount of influence in the project as a whole.

Game maker: It was also a kind of collage technique, putting things in relation to each other.

Sol: I'm thinking that you worked like a film editor.

Game maker: Yes, but an interactive film editor, that's a very good metaphor.

Sol: Yeah, you received visual images, sounds and sort of the story and then you were to edit these together.

Game maker: And I edited it to bring out the relations in the film which I wanted to feature, in this case the relations between the students and the children, the sounds and the images, so that there would be a clear connection between the interpretations. At the same time I also worked with the ideas of programming, gaming and possibilities of exploring the art work. So, yes, I have edited the story in the format of a video game.

When we revisited the preschools to let the children and their teachers try out the video game, all children in the room participated in helping the two players remember where the images were, as the images were moving around, hiding and changing

colours, while randomly shaking and making sounds. The preschool children seemed to remember and connect the sounds to the previous experience of the sound sessions. Many of the children expressed that they recognized the sounds, by imitating the sounds as they were played with the keyboard that we had brought and while playing the game and some of the children commented that they recognized the voices and sounds of some other children in their preschool group. They were saying things like - *I remember, you can hear the sounds, I remember* (while pointing at the projection of the game on the screen towards the object making the sound) - *there, that's ...* (the name of a child)!' The children seemed happy and proud of having participated in the project, something which was confirmed in the evaluation dialogues with their ordinary preschool teachers, who said that they wanted us to come back and do another project. Some children even commented this while playing the game, by stating - *We have made a video game!*

ANALYSIS OF THE CAMPUS COURSE INTERVENTION

In this chapter I have presented the storyline of the participatory art project through student's presentation of their creative processes of making visual images and how they related to the preschool children's sound interpretations, comments from a reflective practitioner's perspective and dialogues with the teacher, the game maker and the sound artist. I will conclude this chapter with an analysis of issues and ideas that have emerged from my reflection-on-action of the empirical data. My ambition is say something about how the participatory art intervention have influenced the students' creative processes and the learning environment as a creative space. In this chapter I have used the metaphor of an actor network (Latour, 2005) as an analytic thinking model in parallel with constant comparative methods of grounded theory (Charmaz, 2006). Actor network theory should not really be understood as a scientific theory, according to Latour (2005) it should rather be regarded more as a method for analysing complex social situations, to trace unstable relations, links and patterns between shifting frames of references. Actors in an actor network can be, for example, human beings, artefacts, technology or ideas. Actor network theory can be regarded as quite open to interpretation and has accordingly been appreciated and applied in various ways (Underwood, 2008; Fenwick, 2011).

The actor network as a thinking model

In this study my point of departure is Latour's version of actor network theory (Latour 1993; 2005) where all of these human and non-human actors are considered to be influential in one way or another, as a part of the actor network. The illustrations presented earlier in this chapter (on pages 94-97) provides an equivalent example of how I have worked with artistic visualization departing from the actor network metaphor, to help me map out interactions and relations between actors in the learning environment. Drawing

network illustrations have been a method for me to understand, by identifying actors, and track their relations and interactions in the network. I have also visualized the change taking place in the learning environment, with the implementation of the intervention. The two different maps (on pages 94-97) compare what happened in the learning environment during the participatory art intervention, with what would have taken place in the learning environments of the two university courses involved in the project, in a regular case. When I started to look into the concepts of actor networks and agential realism, I related these ideas to Deleuze and Guattari's (2004) rhizome, as another non-hierarchical thinking models which I was already familiar with, a metaphor inspired by the early development of the Internet (Deleuze & Parnet, 1987). For me, there is a connection between these theoretical metaphors, the development of digital technology and the Internet, and the way digital actors play a part in the participatory art project studied in this chapter. I have also considered the connection between the role of non-human actors and Vygotskij's theory of mediation, where the mediating tool is regarded as having an important influence on the subject's communication of information (Engeström, 1987). In this particular case, such ideas become interesting to consider, because there were many potentially influential non-human actors involved in the creative process of the participatory art project. For example, my original visual images, where the vector-based format made it possible for the students to open the files directly in the software and continue to work on them, by editing the lines and fields the students could in this way transform the original images. The sound files carrying the recorded voices of the preschool children were not neutral objects either, they became influential actors in the network as they came to represent the presence of the preschool children in the classroom of the graphic design students, in a way that I had not foreseen. In this sense all mediators are actors, and will have an influence on whatever information they transport as well as on other actors in the network. In the following conclusion of this chapter I will present some categories emerging from the study of how

various actors have become more or less influential during the participatory art intervention. The actor network analysis has been complemented with a comparative method from grounded theory, namely axial coding (Charmaz, 2006; Strauss & Corbin, 1990). The tables on pages 152-153 illustrates with axial coding, how various actors in the participatory art intervention influenced the graphic design students' creative processes and how the participatory art intervention affected the learning environment as sociotechnical system.

Making art is always for real

The participatory art intervention influenced the graphic design students as actors, and their creative processes in several different ways. Compared to what would have happened in the course normally, the students' focus in relation to the course assignment shifted from all students working with the same tutorials to learn a software, to each student creating their own unique visual images for a common participatory art project. When I introduced the students to the assignment to make new versions of the original visual images according to the preschool children's sound interpretations, I stated that there was no right or wrong way of solving this task, and that all students' work would be regarded equally valid as contributions to the participatory artworks. Each student knew that her or his contribution would be validated as important for the end result. My reflection-on-action about the thinking behind this is that, making artworks is not the same as doing tutorials or ordinary assignments. I argue that, because of art's openness for interpretation, making art is in a sense always for real. Making art is never just for practice or for learning as it is never a question of memorizing and repeating old knowledge, but always involves processes of interpretation and creative transformation of information. The system changed from learning a software via tutorials to collaborative artistic production where the students' were participating not just for the sake of learning, but for real.

<i>actors</i>	<i>students interactions, relations and creative processes</i>	<i>the learning environment as a sociotechnical system</i>
<i>original visual images</i>	Digital sharing allowed for students to interact directly with my original images by opening the vector based files in the software and start to work with transforming the digital images. Students had reflected upon the design of the original images critically, in relation to their openness for interpretation, and how this affected their design decisions.	The original visual images which I created to start up the project became a red thread, stitching the project together. The digital format made it possible for me to share the original files with the students. In this sense, the technology opened up space for a new way of learning via digital sharing and collaborative, creative transformation of visual images.
<i>visual artist</i>	I influenced how the students' related to the assignment by giving them instructions. I claimed that there was no right or wrong way of solving the assignment and that all students artworks would be considered equally important, for the common production of the video game, as participatory artwork.	Each student worked with their own unique images, and they all knew that their contribution would be valued as important for the end result. I changed the system of learning a software via tutorials to a system of collaborative artistic production where the students' were participating not just for the sake of learning, but for real.
<i>course assignment design</i>	The students focus within the assignment changed from just doing the same tutorials to learn a software, to making visual images as artworks and contributing to a common work of art. This changed the students learning processes to become creative processes.	The learning environment changed from being an environment where students were the objects of education, to a system where the students were invited as legitimate participants in a common production of art. The system became more of a situated learning system, because the students, as well as the preschool children were trusted as creators.
<i>teacher</i>	The teacher adapted his way of teaching form and composition, so that it became part of a dialogue which he had with the students, about the images they were making. He said that the interactions between him and the students changed in the way that they had more open discussions about graphic composition in the classroom.	The teachers role in the learning environment as a system changed. He became less focused on teaching the students how to operate the software and more engaged in talking with the students and participating in the project of making art together. He said that the project resulted in a system which was new to him.
<i>software</i>	The students could continue to work with my original images in the software, which was beneficial for quick starting their creative processes. The affordances of digital sharing in the software had influenced my design of the assignment. Learning the software became an integrated part of the students' creative process of making new images.	The role of the software as an actor changed, from being the central learning goal, which the sociotechnical design of the learning environment had been focused around, to becoming a means for making artworks. The software became less dominant as an actor in the sociotechnical system.

<i>actors</i>	<i>students interactions, relations and creative processes</i>	<i>the learning environment as a sociotechnical system</i>
<i>sound recordings</i>	The students listened to the recordings of the preschool childrens' sound interpretations of my original images. The students were collaborating with the children, as they continued to work with the childrens'sound interpretations. The relation to the children's work, to their creativity, affected the students creative processes.	The sound recordings came to represent the preschool children as collaborating participants in the production of the common artwork. The the children were present in the learning environment, via the sound recordings, both as creators of sound interpretations as art, and as the target audience group for the video game.
<i>preschool children</i>	The students constantly thought about the preschool children, even though the children were not physically present in the classroom. They formed a empathic relation to the preschool children, while trying to understand the sound interpretations. The students tried to understand how the children were seeing and thinking (mentalize).	The preschool children were respected as artists in this project. Their contribution of sounds as art to the production of the participatory artwork was regarded as equally important as the students' contribution, or as my contribution. This affected the hierarchy of the learning environment as system, to become less hierachical.
<i>students as peers</i>	Without the participatory art intervention the students would have worked individually with the same tutorials, aiming for them to learn the software. Now, as the students became creatively engaged in making unique visual images, they walked around more in the classroom and talked to eachother about their work.	The system changed from a system where students worked individually, spending time on learning, without making something with a value of its own, to a system where all students were engaged in a shared creative production of art, which would become of value for others.
<i>transformed visual images</i>	Making art works is not the same as doing tutorials or assignments. Making art is in a sense always for real, and in this case there was also a real audience, a real target group for the final results. This target group, the preschool children, were also involved in the artistic process, as collaborating participants, for which the students were responsible.	Students were respected as artists and the visual images they created were valued as a real contribution to the production of a common work of art. The visual images which the students created were made for the preschool children and were also depending on the children's sound art, the images were in this sense woven into a web of relations.
<i>video game</i>	Making images for a video game, which the students knew that the preschool children participating in the project was going to play, influenced the students creative processes. The students worked for the children, in collaboration with their art works and with concideration to how they thought the children were going to view the final results.	The children as a target audience for the video game, became a central focus for all other participants in the project. Imagining the children playing, and thinking about how the children were going to experience the visual images in relation to their sound art, changed what was of central value in the system. Value overruled evaluation, and in some respect changed the system's taxonomy.

Students created value for others

The participatory art project affected the graphic design students learning processes, from being focused on learning the basic functions of a software, to becoming creative processes of making unique visual images for a common work of art. In this specific case, the students were also working for a real audience, that is, the preschool children. The children as the target audience for the common production of an art work in the format of a video game, became central for the students while working with the visual images. Imagining the children playing, and thinking about how the children were going to experience the visual images in relation to their own sound interpretations, changed the students attention of what was to be valued in the process. I argue that, to create value by doing art works for the preschool children overruled being evaluated on learning a software, for the graphic design students. I think that this, in some respect, also changed the taxonomy of the learning environment as a system. The system changed from a system where students worked individually, spending time on learning without making something with a value of its own, to becoming a system where all students were engaged in a shared creative production of art, which would become valuable for others.

Collaboration, empathy and mentalization

The graphic design students felt responsible for the production of the video game in relation to the preschool children. This was expressed by the students when they talked about their creative processes, and they were showing an empathic concern for the preschool children, both as co-creators and as the audience of their visual images. The students listened carefully to the recordings of the preschool children's' sound interpretations of my original images, while they were working. In some respect the students were collaborating with the children, even though the children were not physically present in the classroom, as they continued to work with the children's sound interpretations. The student's formed social

relations with the preschool children via their recorded sounds, and were affected by the children's creativity. The students constantly thought about the children and they formed empathic relations to the children, while trying to understand their sound interpretations. The students also tried to understand how the children were seeing the world, how they were experiencing things and how they were thinking, as in mentalizing about the children. Making images for a video game, which the students knew that the preschool children participating in the project was going to play, influenced the students' creative processes. The students worked with the children in mind, in collaboration with the children's sound art works and with consideration to how they imagined that the children were going to view their visual images and the final art work results.

Digital sharing

The original visual images which I created to start up the participatory art project became a red thread, stitching the project together. The digital format made it possible for me to share the original files with the graphic design students. The students could interact directly with my original images, by opening the vector based files in the software. This became a way for the students to quick starting the creative process, where the affordances for digital sharing in the software had influenced my design of the assignment. The role of the software changed, from being the central learning goal, which the sociotechnical design of the learning environment had been focused around, to becoming a means for making artworks. The software became less dominant as an actor in the sociotechnical system. The teacher's role in the learning environment as a system also changed. He became less focused on teaching the students how to operate the software and more engaged in talking with the students and participating in the project of making art together. In this sense, the technology opened up space for a new way of learning via digital sharing and collaboration,

where learning the software became an integrated part of the students' creative processes of making art.

The system became a web of relations

The participatory art intervention affected the learning environment from being a system focused on students as objects in need of learning a software, to become a creative space, where students became active subjects needed in a collaborative creative process. With the participatory art intervention, the system became less hierarchical, because the students as well as the preschool children were respected as artists, where their visual images and sound interpretations were regarded as equally important legitimate contributions to the common production of art and knowledge. In this system the teacher and I also participated as learners and none of us really knew what was going to happen. The teacher had to improvise and recreate his teaching along the way. The sound recordings came to represent the preschool children as collaborating participants in the production of the common artwork. The children were digitally present in the learning environment, via the sound recordings, both as creators of sound interpretations as art, and as the target audience group for the video game. The visual images which the students created were made for the preschool children as an audience, but were also depending on the children as creators of the sound interpretations. In this respect, the system became a web of relations, where participants both depended on other participants artworks and were responsible for interpreting and continuing to work with other participants artworks, something which gave the system a more relational and networking structure.

6.

INTERVENTION IN A DISTANCE COURSE



Figure 6.1. Map of distance students' hometowns

The virtual art studio intervention was implemented in a distance course of visual arts. The participating students lived in different areas of Sweden and they had to travel to attend to campus meetings at the university two or three times per semester. The virtual art studio intervention was designed to support students in staying connected with each other in-between the campus meetings. The illustration above (figure 6.1) shows the locations of the students' home towns in Sweden.

STUDENTS TALK ABOUT THE VIRTUAL ART STUDIO

Student 1: When people ask - how can you study visual arts as a distance education? - then I tell them that we blog and upload images from the process and give each other comments. And then, many of them are very impressed, and it is a smart method, it is like a digital art studio. It is like sharing an art studio with others but on a digital platform, and it's not really as open as when you share an art studio, but as open as you like it to be.

Student 2: In the four other courses that I have studied here at the (name of the town) university I have felt that, in-between the campus meetings you have been completely left alone, and that the process have vanished. Many times you have done everything in the last minute just because you have a deadline, and you forget what you are actually making, and you have no idea of what the others are making. But now, you get, as you were saying (looking and nodding at the first student) a sense of community and belonging. And I feel that there are other people who see what I make, and I see what they make. And due to this you become more aware of your own process.

Student 2: Yes, precisely.

Student 1: Because if I work completely alone, then I don't reflect on my own process. I know because I have studied at an art school and shared a studio with others for four years and after that I was completely alone and during that year I didn't have a clue what I was doing. And now, due to the blog I get that reflection again...

Student 2: And you can also, if you're stuck just complain that now it's not going that well and you can get some encouragement - or - if you have done something really fun and want to share it with someone, you can do that, and get sort of response to that...

Student 3: (who has just entered the room) And then you will progress faster, when you get to know what the others think straight away, then you'll open up immediately, the very second that you hear the question, otherwise a month may pass and, yes... [...]

This quotation originates from an informal discussion, which I had with some of the students who had participated in the virtual art studio intervention. The discussion took place during a break in-between a more formal discussion where students were invited to contribute to the evaluation of the whole course. What these students express here, the sense of belonging and being part of

community between the campus meetings and how this supported the continuity of the creative process, is equivalent with what I sensed and experienced as a reflective practitioner during the implementation of the intervention.

Overview of the chapter

In this chapter I describe an Internet based participatory art intervention, *the virtual art studio*, which I designed to support distance students' creative processes, by facilitating for them to stay connected with each other in-between the campus meetings. In this chapter I describe how the students interacted and communicated with each other in the virtual art studio, from a reflective practitioner's perspective. When I designed and implemented the virtual art studio intervention described in this chapter, I had already experiences of designing similar Internet based platforms to support art students creative processes in other educational contexts. In this case, I was interested doing research on my practice, to identify connections between the design of the virtual art studio platform and the influence that the intervention had on students' interaction, communication and creative processes. To be able to achieve this, I asked the students and the main teacher in the course to help me learn more about the virtual art studio, by testing it in practice and in this respect, the participatory art intervention was conducted with a participatory design approach. The object of study in this chapter is the design and implementation of the virtual art studio in this particular distance course in visual arts. Whereas the previous empirical chapter had an overarching perspective of investigating students relations to other actors and the learning environment as an actor network, this chapter closer targets students' interactions, communication and forming of social relations with each other. This chapter therefore provides rich, vicarious examples of students blog posts and of their comments on each other's blog posts in the virtual art studio. The intervention is described as a storyline, building on the students' blog posts. The blog posts and comments

of the students are presented chronologically, to illustrate the progression of students' creative processes during the eight course weeks. The data presented has been translated, anonymized and coded according to various constant comparative methods and procedures of grounded theory. In-between the empirical examples of data from the virtual art studio, I highlight and comment some important issues and ideas, emerging from the coding of that data and from my reflection-on-action. The emerging issues and ideas are also commented and discussed through a reflective practitioner's dialogue with the main teacher. I end this chapter with an analytic conclusion of some important issues and ideas emerging from the narrative description of the virtual art studio intervention.

Developing educational practices with art and digital media

The distance course intervention described in this chapter was conducted as part of an artist-in-residence for a Swedish University. The background and prerequisites for this commission has already described in the introduction of this thesis. In short, as an artist-in-residence I was expected to create art projects together with students and staff at a University department which was educating students in creative subjects like visual arts, crafts and music. The aim of the artistic development work was to envision new ways of involving contemporary art and digital media in the educational practice of the department. These expectations from the employer led to a work situation where I was searching for suitable practices both in art and design. As described in chapter two, I ended up combining participatory practices from art and design. I also performed a kind of adaptation procedure to make the artistic practices go together with the educational practices of the department, to be able achieve the aims and goals of the artist-in-residence commission. The practical starting point for the intervention discussed in this chapter, was my ambition to design a

creative online environment, to support distance course students at the department.

Distance education for lifelong learning

Distance courses in creative subjects like visual arts, crafts and music had been developed since a few years back at the department of the Swedish University where the virtual art studio intervention was implemented. The distance courses at the department had been developed mainly to serve a demand for further education of teachers who were already working at schools but needed to complete their exams to meet the new demands of a professional teacher's legitimation announced by the Swedish Department of education (Statens Skolverk, 2011; Sveriges Riksdag, 2010:800) . Whereas the *massive open online courses* have been of major interest for students in many other parts of the world as a cheap alternative to ordinary University education, distance education in Scandinavia was development on other premises. The main reason for this is that University education in Scandinavia has been free of charge, and students that have been able to support their studies through governmental maintenance grants and student loans since the 1960s (The Swedish higher education authority, 2018). Because of this situation there has not been much interest from private companies to develop the type of distance education which is significant for the massive open online courses, namely that they are free of charge for anyone to enter and the business idea is that you pay for your exam as you leave instead, that is, if you make it through the course. The selling point with the massive open online courses is that you can try out an education and see if you can make it without having to pay a fee for trying. This is a selling point which becomes irrelevant in a country where education is free anyway. So, the smaller versions of massive open online courses in Sweden have been developed from another starting point and for somewhat other reasons. In Sweden various forms of distance education and online courses have been designed primarily to meet demands for further

education. Such courses have been offered by Swedish Universities since a decade back or more, and I had prior experiences of working as an online teacher for a year in the smaller versions of massive open online courses, where students never met in real life. Some of these courses were designed in such a way so that the students could help each other with technical problems and questions about the assignments. The courses then had special forum for each assignment, where students could post questions and get answers either from me as a teacher or from their fellow students. This was good because all students didn't work office hours like I did as a teacher, and via these forum they had an opportunity to get off hours support, from a fellow student instead. Another advantage with the forum was that the questions which had been posed and answered remained in the forum and became a source of information for students as in frequently asked questions. The virtual learning environment in those small online courses, where students never meet in real life had been developed to continuously support students throughout the course period, which was normally around eight weeks. The design of the learning environment in those smaller versions of open online courses were quite different compared with the distance course where the virtual art studio intervention was implemented, where the students met in real life two or three times per term, but there was no online support designed for supporting the continuity of the course in-between the campus meetings.

Online support for distance education

In recent years the interest for online support in distance education in Sweden has increased, partly as a consequence of large scale educational reforms in Scandinavia. In Sweden and Denmark for example, the educational reform for professionalization of teacher education has raised the qualification demands for teachers already at work, as already mentioned, so that they needed to get a formal diploma and a professional legitimization in all subjects in which they

were currently teaching. The expected benefits with distance education online at a larger scale in Scandinavia were for example that education becomes available for students who would otherwise be restrained from attending further education. Here the arguments pro distance education have been that there are various practical and sociocultural issues which could make it difficult for people to become lifelong learners otherwise. Such hindrances could for example be citizens' permanent work situation in combination with the geographical position of their home towns, amongst other socio-cultural and economical factors related to moving from the place where you live. The benefits of distance education have resulted in the fact that, students in many cases have accepted the downsides of distance learning situations and online learning environments; *"such as a lack of teacher presence and teacher feedback, increased feelings of social isolation and online platforms that fail in creating collaborative, engaging and creative learning experiences"* (Petersen and Gundersen 2016, p. 180). There are other challenges for the designers and researchers of distance courses dependent on online learning environments, such as how to support students' positive experiences and outcome of the learning process. For example, learning a profession is not just about gaining information about the profession but about learning to become a professional, so one challenge with online education is how to connect students to their professional communities of practice (Fisher, 2015). The challenges and possibilities of distance education are important to study from a global educational perspective as well, as the demands for life long learning for example, in rural areas have become of an increasingly concern.

PARTICIPANTS, DATA COLLECTION AND ETHICAL CONSIDERATIONS

The virtual art studio intervention was implemented in a distance course of visual arts which lasted for two terms, starting in the Autumn and ending in Spring, where the course was conducted as part-time studies. The intervention was implemented in the very beginning of the course in early Autumn. I conducted the intervention in close cooperation with the main teacher of the course, where we started to discuss and plan for the virtual art studio intervention a term in advance. In this course I was going to be involved both as an artist conducting research and development work and as a teacher. This situation had to be taken into consideration from an ethical perspective, because students are in a subordinate position and dependent on the teacher, which can make research complicated. Students might be careful about what they say as participants in an art or design project, if they know that the researcher is going to grade them as a teacher in the same project. During the planning of the intervention I discussed this situation with the main teacher and we decided that I should not be involved as a teacher at all in the first part of the course during Autumn, only in the second part of the course in Spring. This division of labour resulted in the fact that I was involved in the distance course, merely as an artist in charge of designing and implementing the virtual art studio intervention for research and development purposes during the Autumn, whereas during the Spring term, I had the role of a teacher in charge an assignment in the course. The result was that the main teacher became responsible for evaluating and grading the Land art, Street art and Place specific art assignment which the students worked with during the virtual art studio intervention. During the intervention, I merely functioned as a facilitator and a technical support for students working in the virtual art studio environment.

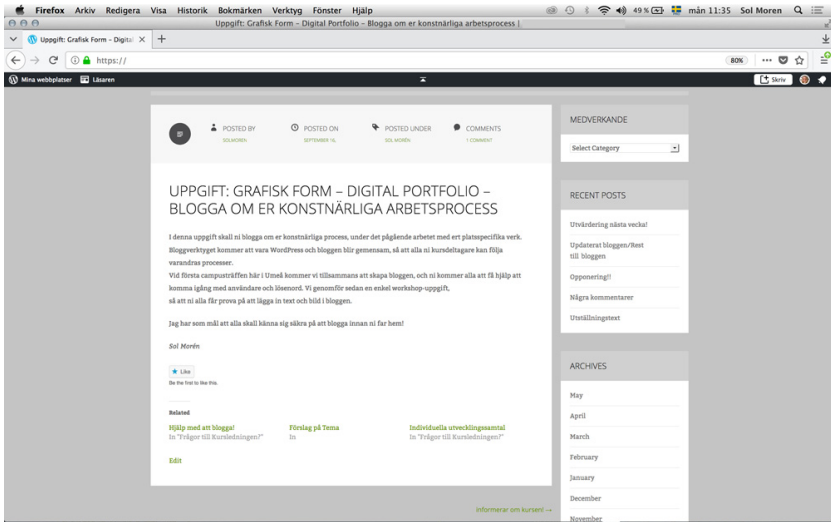


Figure 6.2. Interface of the virtual art studio

In the beginning of the Autumn I met the visual art students in the distance course at their first campus meeting. The students had travelled from their home towns to visit an upstart meeting at the university, which lasted for three days. In my workshop, the students were both introduced to the assignment involving the virtual art studio and to my aims and purpose of studying this intervention for research purposes. Because the virtual art studio was an interwoven part of the assignment in the course, which was due to the fact that it was part of an in-house development project, the students were obliged to participate in doing the assignment in the virtual art studio according to how the main teacher and I had planned the assignment. However, the students were not obliged to participate in my research project. The image below (figure 6.2) shows the interface of the virtual art studio with a post about the assignment, which I had prepared for the workshop with the students at the first campus meeting.

The story behind my research interest in relational creativity

During my workshop I also told the visual art students about my previous experiences of implementing similar online spaces to support students in other art courses. When I showed the students the interface of the virtual art studio that I had prepared for the course, I also presented some examples from other courses and told them about what students in those courses had said about working in this online environment. For example, I told the students about a course in Relational aesthetics which I had performed as a guest teacher at a preparatory art school. That course was held twice, with different students but with similar results. In that case the virtual environment had been used as an online environment, additional to the regular learning environment, complementing the meetings and discussions that we had each day at the art school. Students in those courses said for example, that they had understood each other in a different way during the course week than they had done in the past two years, which they had spent together in real life at the art school. They also said that it was like they shared each other's ideas and thoughts in another way, than in real life. I told my students in the intervention that, what had happened at that art school course made me start thinking about creativity as a socio-relational phenomenon. The students seemed to become increasingly inspired by each other's ideas, sketches and photos of their work in progress which they uploaded constantly around the clock in that course. This was the way I presented my research interest to the students in the distance course, by telling the background story and showing the students practical examples from previous courses, what I had experienced as a reflective practitioner, and how this had sparked my interest for studying creativity from a relational perspective.

I asked the students to help me evaluate the virtual art studio

I informed the visual art students that the virtual art studio intervention was a further developed prototype on the same design idea, aiming to provide them with an opportunity to share and support each other's creative processes. In the case of the course in Relational aesthetics, students had met in real life every day at the art school and I told the students that I was curious to find out what would happen if we tried to do something similar together in this distance course. In this way, I asked the students to help me try out my design, to test the ideas and to contribute to my research project with their practical experiences of working in the virtual art studio. In this respect, the intervention studied in this chapter can be regarded as a *participatory design* intervention. I also told the students that my intention was both to present the results of the intervention at research conferences as well as publishing the results for the purpose of research and development, and that my aim was to share knowledge which could be useful for other practitioners and researchers who worked with questions of how to design for creative learning environments.

Negotiating formal evaluation with the students

At the first campus meeting the teacher of the distance course and I had an open discussion with the students about the prerequisites of the virtual art studio. The visual art students had already agreed to share their creative work processes with the other students in the online networking environment. Because the intervention was a research project as well as part of a course assignment, we invited the students to discuss the conditions of their participation in the online networking environment. During this discussion, it became clear that the students were positive to share their creative processes in the online networking environment on one condition, and that condition was that quite clearly stated by the students. This condition concerned that they did not want any teacher to evaluate

any of the content in their blog posts for grading purposes. We continued the discussion which had turned into a negotiation and the students said that they could compromise and allow the teachers to count posts and comments, to check if they had followed the instructions when it came to how many posts they were to upload, according to the instructions for the assignment in the course plan. When I designed the online networking environment, my basic idea was to support the students creative processes by giving them an opportunity to keep in contact with each other. This design intention was based on my own experiences of the advantages of being able to share ideas in the open space the common art studio of a preparatory art school. I was also inspired by peer-to-peer sharing of knowledge concerning creative use digital technology, such as photography and indie-game programming on various internet forums (Morén, 2012). So, my design intention was for the online networking environment to function as a support for the students, and therefore I totally agreed when the students pointed out that they would feel surveyed and that they would not be able to freely share their thoughts concerning their creative processes if they knew that the teacher would evaluate their posts and comments for grading purposes. Because of the fact that participating in the online networking environment was part of the assignment, the main teacher still needed to be able to have the possibility to check if that part of the assignment had been fulfilled by the students, so, the agreement of the teacher being allowed to count posts and comments, but not allowed to evaluate the content of them became the result of the discussion, or negotiation between the students, the teacher and myself. The students could also choose if they wanted to participate in the research project or not, that is, if they agreed to let me quote their posts and images for this research project, something which they agreed to orally in the beginning of the project and finally give their written consent or disagreement to, by the end of the course. The students thought that it was fine for teachers to read their posts and follow their conversations with each other in the online networking environment,

as long as the teachers did not judge or look at the content with evaluating and grading eyes. To function as an online networking environment, the virtual studio had to be protected from evaluation, measuring and grading of the individuals involved in the networking, but it didn't have to be protected from the teacher or the researcher as technical support and curious, non-judgemental visitors.

The visual art students informed consent

The visual art students were informed about their rights to say no to participating in the research which I was planning to about the virtual art studio intervention. I informed them about the procedures around informed consent according to guidelines of the Swedish Research Council at that period of time (2002; 2008; 2011). They were also informed that even if they first agreed to be part of the research project and then changed their minds they could tell me or their main teacher that they had decided to withdraw their consent at any time during the course year. In practice, this meant that the students would make their final decisions about participating in the research at the last meeting of the distance course in the end of Spring. At the end of the course year, I asked the students who were present at the last campus meeting to give me some comments on the virtual art studio in writing. I asked if they would agree to let me use their oral and written comments for research purposes, and I asked them to write a statement together with their written comments about the project, to tell me if they agreed or disagreed to let me use their blog posts for research purposes. At this occasion, eight students agreed, and one student disagreed to participate in the research project. I had also informed the students that this might also involve reproducing some images of their art works, but only for research and not for commercial purposes. For this study I have only used blog posts as data from students who had signed the agreement, although some students who were not present at campus meeting that final day had agreed to participating in the research project, earlier during the study year.

However, some of those students had left the course and some were at risk of not finalizing it, so I decided only to use data from students who had given me their informed consent at that campus meeting by the end of the course.

Ethical considerations in relation to research data

In this study, data which could be connected to individual participants have been anonymized or removed, with consideration to the European Union's *General Data Protection Regulation* (GDPR) (EU, 2016; The Swedish research council, 2017; The Swedish Government, 2018). According to how I interpret the regulation, I have decided to minimize the use of research data which holds personal information about participants in my projects. As a consequence of this, I have restricted the use of data in the study of this chapter, to data which is necessary and meaningful for conducting the investigation according to my research objectives. My general ethical approach to data collection and long term archiving of data has already been described in detail in chapter five (page 103-104). Blog posts, comments and the screen shots from the virtual art studio platform, as well as students' written comments and recorded conversations about the project can be considered to include personal information. This kind of data have been anonymized as far as this has been possible. Names and dates have been removed from the screen shots reproduced in this study, blog posts and comments have been edited to remove irrelevant personal information concerning the students' private lives and conditions. This editing of unnecessary personal data have been pursued even though there were no ethically sensitive data produced in the project.

A reflective practitioner's dialogue with the main teacher

At quite a late stage of my research process I asked the main teacher if he/she could have a reflective practitioner's dialogue with me about the virtual art studio intervention. This dialogue with the teacher served as a way of comparing issues and emergent ideas about the case, which had come up while I was working with the data. The quotations from the dialogue between the main teacher and myself presented in this chapter were based on a video recording, which was partly transcribed into Swedish as written text and partly just summarized directly in English, where the quotations selected for this chapter were then later translated from Swedish into English. Only the transcripts and not the video recordings are considered as data for this study, for protection of anonymity reasons. To start off the dialogue with the teacher I used two different PowerPoint presentations which I had prepared for research conferences, presenting issues and visual data, and meant to work both as a reminder of the project and a trigger for discussion. I told the teacher that during the research process, I had come to focus on questions concerning which ideas and issues in the design that had been of importance for the students to experience the virtual environment as a creative environment. The teacher and I were looking at a land art work by one of the students, and I asked the teacher if the prerequisites of the course were the same for the students in the distance course today, as they were when we implemented the intervention some years ago.

Sol: The prerequisites for the distance courses, are they about the same today as when we implemented the intervention?

Teacher: We don't have a blog.

Sol: Yes, but there was no blog in the courses back then either, that was what the intervention was about.

Teacher: Yes, yes.

Sol: I mean, is it the same layout, that they meet three times per term and so on?

Teacher: Yes, yes, the layout is the same.

The teacher told me that course design is still the same, that the students meet only two or three times per term, with more or less two to three teachers involved, and some guest teachers who have single lectures. The themes are also the same, with a Land art project carried out in nature and a place specific art project, which can also be a performance, the only change is that the street art project is no longer carried out in real life, only presented as a proposal in the format of a digital photo montage. I asked the teacher if the students still had an opportunity to see images of how the other students worked with their Land art projects, during the processes. In the presentation that I showed the teacher I had an example of this, where two students who have both worked with water and material from nature, like leaves, fruits and berries had the opportunity to become inspired by each other's processes.

The storyline and my focused coding of students' blog posts

In the following paragraphs I will present the storyline of the virtual art studio intervention, which I had designed and set up as a shared social network for the visual art students, based on the open source platform, *Wordpress*. The story of the virtual art studio is here presented through a selection of students' blog posts. I have chosen examples of blog posts by students which represent the general discussion that was going on in the shared blog, and blog posts that in one way or another also represent issues which emerged while I studied and coded the data of the intervention. The blog posts are presented following a chronological time line, starting with the oldest posts from the beginning of the eight weeks course. Comments to each of the posts are presented in direct connection to that same post which they commented. The storyline also chronologically follows the different stages of students' creative processes, where the identified issues and ideas are discussed under sub headings within the framework of this time linear narrative.

Students' blog posts together with comments from their peer-students are presented in the right column of tables, together with a focused coding, presented in the left column of the same tables. In this case the focused coding of the students' blog posts is based on ideas derived from some of the most significant of my earlier codes, which I have decided to build upon further, according to what is custom in the process of grounded theory (Charmaz, 2006). Through the focused coding in this chapter, I take a closer look at students interactions via the communication in the blog, where the aim is to find out what is going on, what issues that emerge as important, and how this is connected to the sociotechnical design of the virtual art studio intervention.

THE VIRTUAL ART STUDIO IN PRACTICE

The students in the distance course were introduced to the virtual art studio in my workshop, by trying it out in practice. In the beginning of Autumn, all students who had been accepted for the distance course in visual arts travelled from their home towns to meet up at the university. The students were introduced to the course as a whole and to their first assignments in workshops during a campus meeting which lasted for three days. Even though the course was referred to as a distance course, students had two to three mandatory campus meetings per term, and during those meetings they participated in workshops introducing the assignments in various techniques connected to arts and crafts. At this first campus meeting of the distance course intervention, I met up with the students on day three, when the students had already been introduced by their main teacher to the design of the distance course and to their first assignment of making Land art, Street art and Place specific art.

The virtual art studio as a shared digital portfolio

At my workshop I introduced the virtual art studio as a kind of shared digital portfolio, aiming to support the students' creative processes during the course period when they were going to work individually with Land art, Street art and Place specific art. During this period the students would be working in their own home towns in a widespread area of Sweden (as illustrated in figure 6.1) so the students would be far away from each other. According to the curriculum the students were expected to blog about their artistic processes by uploading a post in the shared online environment of the virtual art studio once a week. One could say that the students were expected to narrate their artistic processes through the posts, which included sketches, photographs and reflections of the work-in-progress. This documentation of the process would take place while the students were making their Land art, Street art and Place specific art projects during the eight week period that was scheduled for that assignment.

Getting to know each other while learning the technology

During the workshop students were asked to post presentations of themselves in text and to upload a photo. They worked in groups, where they were encouraged to help each other take photos or solve technical problems, as I went around and assisted the groups. The image on the opposite page (figure 6.3) shows an example of a student presenting herself as an artist. The presentations which the students made of themselves as artists were the first post which all students were instructed to upload at the workshop that I held during the introductory campus meeting. The quotation below provides a translated example of a student's first post, the presentation.

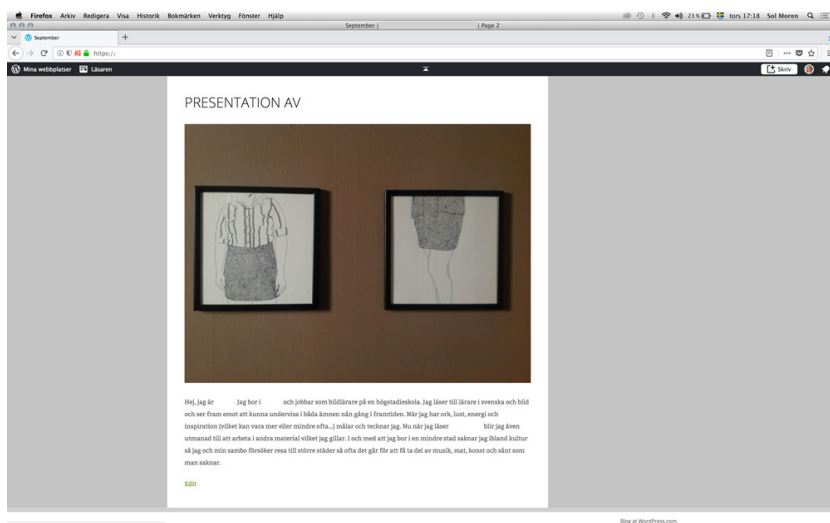


Figure 6.3. Example of a student's first blog post

<p>(this student had already attended other distance courses at the university)</p> <p>credits</p> <p>encourages</p>	<p><u>Presentation of (name of student)</u></p> <p>Post: Hi, I'm (name of student). I live in (student's hometown) and I work as an art teacher in an upper secondary school. I'm studying Swedish and Visual Arts and I'm looking forward to being able to teach in both of those subjects in the future. When I have the energy and mood and inspiration (which can be more or less often) I draw and paint. While studying here at (name of the university) I'm challenged to work in different materials than I'm used to, which I enjoy. As I live in a small town I miss culture, so me and my partner try to travel to larger cities to take part in music, food, art and such cultural things you miss out on.</p> <p>Comment: I have been inspired by your way of working before. I'm looking forward to seeing what you will do next. Friendly greetings (name of student)</p>
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Figure 6.4. Example of a student's first blog post with a comment from a peer student

This student quoted in the table above (figure 6.4) presented herself as an artist, by uploading a photograph of some of her drawings (figure 6.3). She also shared some personal information about her work, family and what she liked to do in her leisure time. Her peer student commented her presentation by stating that she had been inspired by the student's earlier artworks. This is because they already knew each other, as they had studied together in a few other distance courses at the same university. According to my experience, students who participate in an introductory workshop where they are encouraged and obliged to upload a first post in the platform which they are going to work with, seldom have any problems to continue to make posts on their own after that workshop. Students who do not go through with uploading a first post in real life at an introductory workshop, will more often get stuck and need technical support when they are on their own and about to start up the posting, according to my experience from having conducted similar online projects in other courses. In this course, we had five students on a waiting-list who started later than the other students and most of them needed more technical support to get going with the blogging. I acted as a technical support for the students, as showed in the following quotation.

<p><i>(example of my presence in the virtual art studio as technical support)</i></p>	<p><u><i>It disappeared</i></u></p> <p><i>Post: I can't get back to reader where all the students presentations are. I pushed something so that it disappeared. Hmm.</i></p> <p><i>Sol: Try clicking the words (name of the course) in the left corner of the blog.</i></p> <p><i>Post: Thanks. Now it works. (Another students name) is looking for you to get some help to start up the blog, just so that you know. Friendly greetings (students name)</i></p>
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Figure 6.5. Example of a students' post, asking for technical support

In this case, the student quoted in the table above (figure 6.5) had some problems with navigating in the interface of the platform, so she asked me for help with this. In this post she also mentioned that another student had problems with logging in to the blog. This student had joined the course later than the others, because there was a waiting list for vacancies, and had missed the introduction at campus. Following from this, she needed a step-by-step telephone support to be able to go through the first technical threshold, even though I had uploaded visual instructions of how to use the interface. The student had read the instructions and she did everything right, step-by-step as I was on the phone with her. I took a while for me to convince her to try, and she was very stressed from having to do this on her own because she had missed the workshop. I thought this was interesting, because, as I guided her, it turned out that the student actually knew how to do it, according to my previous instructions. So, she basically needed my technical support merely to get the courage to try. Another of the students on the waiting list, who was familiar with blogging set up a blog of his/her own, as she misunderstood the idea behind the assignment, which was understandable, because in most cases when blogs are used in education, students have their individual blog. This student could follow what the others did in the shared blog, but posted his/her documentation of the process in her own blog, and somehow didn't understand the difference until some weeks had passed.

Blogs as social networking

The virtual art studio was based on an open source platform for blogging called *Wordpress*. I had got the idea to customize the otherwise single-user blog to function for social networking, somewhere during my practice as an artist coding homepages and setting up blogs. In a previous study I had also interviewed young female photo bloggers in Sweden and become interested in researching blogs and blogging as a way of sharing knowledge (Morén, 2010). I was already familiar with the fact that blogging was

not just a form of self expression and I had learned that the blogging culture involved development of advanced networking strategies. Because I had coded home pages myself, I came to the conclusion that these networking strategies were probably developed by the bloggers for strategic reasons. Blogs, as well as homepages, were linked to each other in networks by various programmed systems which rated your blog according to how many comments you got from other bloggers, or in the case of homepages, how many links that led to your page. The young females which I interviewed were not always aware of the programming behind those systemic preferences, but I understood that they knew how it worked on a practical level, and that they had more or less consciously developed strategies to make use of those systemic preferences, as well as of some other side effects of internet communication (Morén, 2010; 2012). If you see it from this perspective, blogs can be regarded as a form of social networking, where individual blogs can be connected to and act as nodes in a common network. In this sense the virtual art studio was inspired by my previous study of blogs and bloggers, although I choose to design the virtual art studio in a different way than as a network of connected individual blogs, even though it would have been possible to do it like that, something which will be further discussed in the final chapter. What is unique with the design idea behind the virtual art studio is really that all students share the same blog. Interestingly enough, many people who I have talked to have a problem to understand my design idea behind the shared blog. Perhaps because you expect a blog (short for web-log), even though it is most often publically displayed, to be a kind of personal log book connected to an individual. The students' presentations of themselves, which they had uploaded during the workshop at the first campus meeting did not just serve as a way of learning the technology of the online platform, it served as a way of getting to know each other as well.

STUDENTS PRESENT AND DISCUSS THEIR IDEAS

When the students had returned to their home towns after the first meeting on campus they started to upload posts about their ideas for the three different art work assignments. In the virtual studio students briefed each other on their various ideas about places, choice of material, artistic concepts and thinking in general about how to go through with making the land art, street art and place specific art works. Students posted photos of possible places in their home towns where they thought about conducting their art works, they described many different ideas in text, and some students posted sketches. The following quotation (figure 6.6) represents such an idea presentation, where the student tells a story about how the idea for a street art project starts to take form. In this post the student describes how she planned and prepared for the art work and how a coincidence that happened while she was cleaning the house during the weekend, sparked the creative process.

<p>shares information of how the idea came up</p> <p>shares conceptual background</p> <p>presents plan for production and where to place the art work</p> <p>encourages ideas</p> <p>credits sketch</p>	<p><i>Paste up 1</i></p> <p><i>Post: After some technical problems I am finally here. [...] When it comes to street art, I think I'm going to use a poem which I wrote a couple of years ago. It was left in a drawer, forgotten, until I cleaned there last weekend. When I wrote it I felt pressured by the free school company for which I was working at that time. The poem could be seen as an argument in the debate about work hours and work load or perhaps be about what we do with our time and with our lives in general. My plan is to place it at the train station where commuters start their mornings. I don't want to do graffiti, so I'm thinking about using posters that look more like advertisements. I will do more sketches on those. When it comes to land art [...]</i></p> <p><i>Comment 1: I like your ideas a lot [...]</i></p> <p><i>Comment 2: Hi (students name)! [...] Street Art: The poem is on the spot and very strong and with a good image to it</i></p>
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<p>shares associations</p> <p>reflects on format and material</p> <p>thanks</p> <p>reflects further on comments and questions</p>	<p><i>(Ulrike Meinhoff?) to draw attention, and present it as any commercial poster? Then people will read and wonder WHO the sender is [...]</i></p> <p><i>Post: Thanks for the comments (names of students)! [...] Amusing that you thought that it was Ulrike Meinhoff on the image - no it's just me! Perfect that I am not recognizable! No, my poem is not very short but there is not a lot happening here in (name of town) so it is quite easy to draw attention. I am thinking about whispering instead of screaming. Make the poem tiny in the picture so that only the ones who come close can read it. The train station is not a stressful place, more of a place where you stand still waiting for trains and buses. I think that people will have time to read.</i></p>
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Figure 6.6. Example of a students' first post on the topic of ideas

In the post presented above (figure 6.6) the student first introduced how she got the idea for the artwork by coincidence, as she was cleaning the house during the weekend. She then shared her conceptual background of the art work derived from an experience of working as a teacher under pressure. The student also presented a loose plan for production of the art work together with an idea of where to place it. The commenting student first credited her idea and sketch and then shared some visual associations that she got from the sketch that the posting student had uploaded, and initiated a discussion about material and technique. This led to a reply from the posting student where she developed and clarified her ideas and also specified the conditions of place and the presumed audience. The following post by the same student (figure 6.7) was uploaded shortly after the first one, at the same occasion.

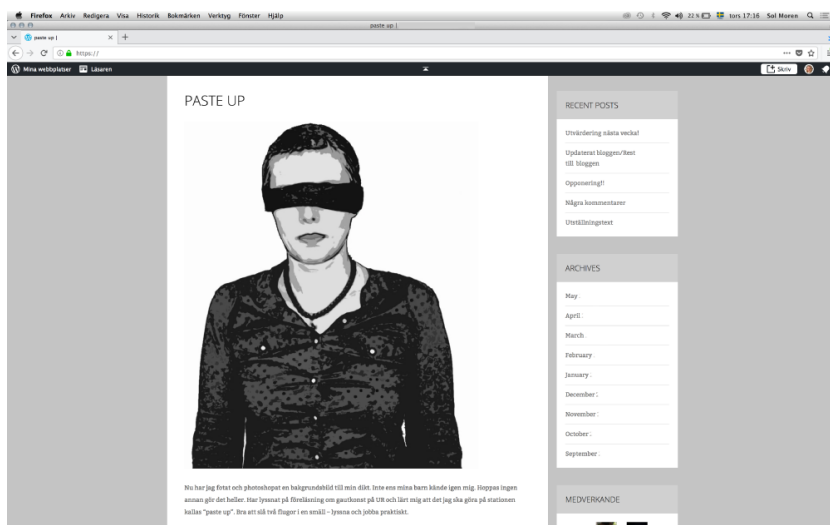


Figure 6.7. Photo documentation of a student's land art work-in-progress

<p>(the following post was posted by the same student almost at the same time)</p> <p>(UR is a Swedish educational radio station)</p> <p>shares additional information about where to learn technique</p> <p>thanks</p> <p>asks questions about technique</p> <p>replies to the commenting student's art ideas</p>	<p>Post: Now I have photoshopped a background image for my poem. Not even my children recognized me. Hope no one else does either. I have listened to a lecture on street art on UR and learned that what I intend to do is called "paste up". Good to do two things at the same time, listen and work in practice.</p> <p>Comment: Hi, I don't know if you have seen it but I have linked to a wiki site about wheatpaste (paste up), and there is quite a large thread about it on Flashback if you need technical guidance!</p> <p>Post: Thanks!! Yes I saw that. Was thinking about answering. I'm a beginner in this field, so it is very good with hints! I have only painted on legal walls when I was younger. What kind of paper do you use? I think you should do as you wrote and start realizing your ideas. To start working is a useful way, if you want to understand what you are doing, at least I work like that..</p> <p>Comment: I don't know exactly, it was a drawing paper (block) in A3 format which I bought at [...] the cheapest</p>
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<p>shares information about where to buy material</p> <p>replies to comment about art ideas</p> <p>thanks for hints and encourages</p> <p><i>(I only acted as a technical support to the students in the blog, not as a teacher)</i></p>	<p><i>store for artist's material I now [...] Yes, I shall definitely go through with the street art and the place specific art but the land art is a bit stuck for me at the moment. At least I have found a place to work with.</i></p> <p><i>Post: Yes (name of drawing paper) is super good! I'll look for it next time I'm there. Thanks again for hints and good luck!</i></p> <p><i>Sol: Hi (name of student) I'm glad to see you here in the blog! Now I can inform you that you are expected to give at least one comment per week to (name of another student)! Phone me or (name of main teacher) if you want more information, I'm responsible for the blog and (name of main teacher) is responsible for the content, that is Land art and so on. Greetings Sol</i></p>
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Figure 6.8. Another post on the topic of ideas, uploaded short after the first one, by the same student

In this post (figure 6.8) uploaded by the same student, she continued to discuss the technique, material and production of the art work. Interesting to notice is that this student also shared information about a radio program, available in a public archive in Sweden, with hints and tips about the technique that she was planning to use. Now another commenting student joined the blog and started to discuss the particular technique of printing posters and how to glue them up outdoors. Following the conversation, it becomes apparent that the commenting student has a lot of competence on the techniques and materials that the posting student are planning to use, and that she shares this information. Due to the fact that all students shared the same timeline in the virtual art studio, these kind of tips and hints about material and techniques became accessible to all students, as all posts and comments showed up in the shared timeline. I tried not to interfere in the blog, yet I wanted the students to know that I was available as a technical coach if they would need my help, so I posted some comments to all students.

How I instructed the students to give response

When the students were first introduced to the virtual art studio at my workshop I presented some of the ideas behind the assignment to blog about their artistic processes. Besides my design ideas to support networking between the students, the virtual art studio was also intended to function as a digital portfolio where the students' artistic processes would be documented. In the curriculum instructions for the assignment I had written that the blog was intended to function as an example of a digital portfolio which could be used for a kind of feedback that would support learning without judgemental evaluation. I referred to the well-known Swedish educational psychologist Lars Lindström who had worked with American psychologist Howard Gardner and had published pedagogic literature on evaluation of artistic learning processes. Lindström (2011) argued that formative assessment should not be combined with summative assessment in creative learning processes, and it was this argument that I referred to. When I reflect-on-action upon how I formulated and explained the instructions for the students compared to what I referenced to, that is Lindström's (2011) ideas of formative assessment, I can see that there was a clear discrepancy between my formulation and that of Lindström's. What differed was that in my version, it was not just the summative assessment that had been removed from being mixed with the formative assessment, but the judgemental evaluation factor of the formative assessment was completely removed too. In fact, to refer my instructions for how to give response in the virtual art studio with the concept of formative assessment would actually cause misunderstanding. I wrote in the assignment instructions to the students that *it is difficult for you as a student to take in appropriate constructive critique in artistic subjects, because they are associated with personal expression and development and that It is easier for the teacher to give constructive criticism when the only purpose is to strengthen you in your way towards developing your individual artistic expression.*

Alternatives to criticism

In real life, at the workshop and in my conversations with the students who started the course later, I practically forbid any kind of critique and judgemental evaluation in the conversations between students in the blog. In my oral instructions for how the students should give response to each other, I said that they should primarily encourage and support each other without any kind of judgemental evaluation. I also told the students to avoid praise without arguments for why and what they liked about the other student's idea or sketch or art work (interestingly, giving positive response without declaring why, was about the only rule that the students broke now and then). We had a discussion about this, because the students were wondering how I meant that they should respond then, and I told them that they could help each other for example by suggesting alternative materials and methods, or they could share personal associations which they got from taking part in the other students works. I also suggested that the students could share their spontaneous ideas for alternative ways of continuing to work with art project or other students' or tell other students about references to other artists' work, or to literature or films, which they came to think of in relation to the other students' art projects. When I reflect-on-action, I can assume that my instructions for how to act in the virtual art studio were mainly based on my own experiences of studying and teaching at art schools in Sweden, of what I had experienced as useful and supportive ways of sharing knowledge about creative processes.

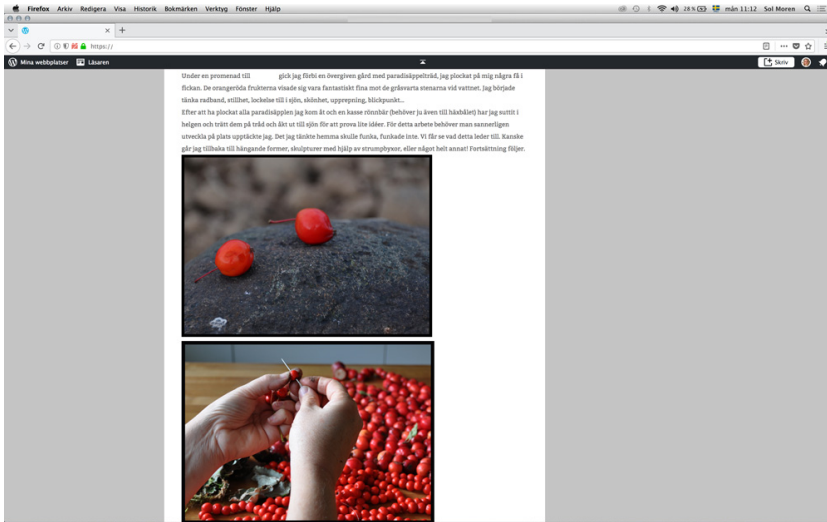


Figure 6.9. Photo documentation of a student's land art work-in-progress

<p>shares experiences during outdoor work process</p> <p>refers to previous discharged ideas</p> <p>presents how current ideas occurred during a walk in nature</p>	<p><u>(Students name) second post</u></p> <p>Post: Land art. During the last week I have gathered moss with different structures and shapes. There are so many beautiful things in nature! I was thinking about building sculptures which could be hung in trees [...]</p> <p>The Idea which I previously had, with stockings, all of a sudden felt too complicated to go through with. During a walk around the lake I went into a forsaken farm with an wild apple tree and I collected some apples and put them in my pocket. These orange-red fruits turned out to be amazingly nice in contrast to the grey stones at the shore of the lake. I began to think about rosaries, stillness, the luring of the lake beauty, repetition, position of view [...]</p> <p>Comment 1: Very pretty with the red colour! I've done something similar but with rowan-berries – you'll see later. I like the idea to put them on a string, smart. Feels like jewellery - of nature perhaps. [...]</p> <p>Sol: Hi (name of student) Good process documentation! Your group has a new member, (name of student) who has</p>
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	<p><i>lost her partner! Hope this works for you! Greetings from Sol</i></p> <p><i>Post: Sure, it flows well!</i></p> <p><i>Post: (Student's name) Yes, the colours attracts me, but the forms were more difficult to shape as I wished for. A lot of effort and the lines of pearls [...]</i></p> <p><i>Comment 1: Yes, I can imagine that it takes time. Perhaps you could make the forms smaller, or does it become dull then? I think you will find a solution to this. Looking forward to your update!</i></p> <p><i>Comment 2: When I see the rowan-berries it reminds me of when I got married. [...]</i></p> <p><i>Comment 3: Oh, what a wonderful red colour and nice close ups of the rowan-berries. [...]</i></p> <p><i>Post: :)</i></p> <p><i>Comment 4: It feels like you have really approached the Land art project in a good way, To be outdoors, simply be at the location and feel and think about what to do... and take a creative hold on what you can do with nature's material [...] Here I feel that I learn a lot!!! Thanks!!!</i></p>
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Figure 6.10. Extract of a student's blog post about how she initiated her creative process by taking a walk around a lake

Students learned from each other's stories

The detailed story of how this student develops her land art project while taking a walk around a lake, not really knowing from the beginning what this is going to lead to, as presented in the table above (figure 6.10) seems to have worked as an inspiration for other students. The image (figure 6.9) shows the student in action, working with material from nature, like berries and apples to shape her land art installation. The description that the student quoted above gave, of how she approached the assignment by just letting the process of thinking and being in relation to the place begin, and at the same

time stay open for things that just seem to happen, is similar to how the student in the first quotation described her initiation of the phase of generating ideas. Tangible examples like these of how to enter a creative process are valuable as inspiration for the other students in a course of visual arts, and I propose that such examples provide keys to the wicked problem solving process of working with artistic practices. In this distance course, where the students worked individually and separated from each other in different geographical locations, sharing of such tangible examples of how the students attended to creative problems in the process was facilitated by the virtual art studio. In the quotation presented above, the last comment from a fellow student could be regarded as a critical incident highlighting the importance of what I have just described. The commenting student summoned up the shared information, to concern the value of simply being outdoors at the location to spark off the creative process and stated that she had learned a lot from reading the other student's post.

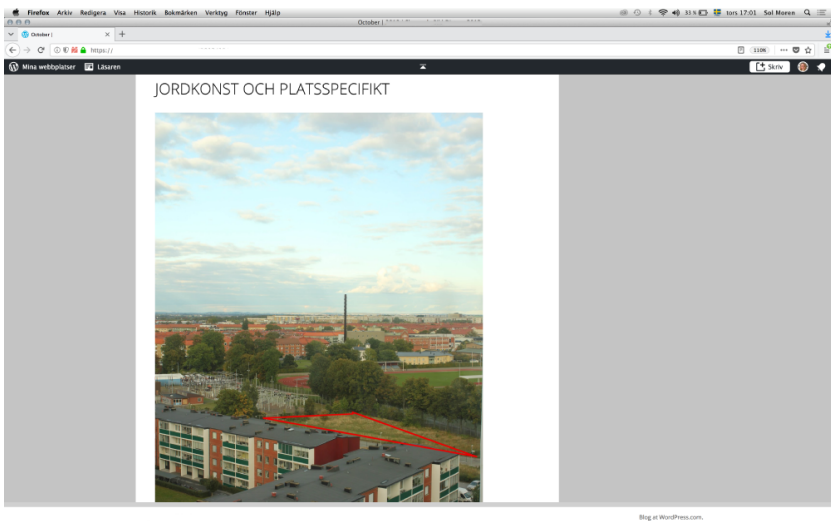


Figure 6.11. Photo documentation of a place that a student has chosen to work with for her place specific art project

<p>shares experiences of how the creative process does not lead to immediate results</p> <p>shares thoughts about what I would refer to as a wicked problem solving process</p> <p>presents various possible ways of working with the same idea for a place specific art work</p> <p>shares reflections about uncertainty concerning the conceptual ground</p> <p>shares many questions about the process, the results and the expectations of the assignment</p> <p>suggests specific way to document</p>	<p><u>My ideas at a varied degree of progress</u></p> <p><i>Post: I often start quite broad when I get an assignment, and try to collect all ideas that I get, and then sort them out. Had a vague thought about making something place specific or Land art when I was up in (name of a mining town) but I didn't have time to think through what it was that I really wanted except for working with raw iron. So that idea will have to wait until Spring, when I know more accurately what I want to target with the idea. Then one could ask if it is important to know precisely what it is that one wants to say or examine with an idea, perhaps that is something which one could find out while working. Or perhaps never. I'm not sure how to confront not knowing, can't decide that is okay or not. A dilemma which I have wrestled with to some extent in painting as well [...]</i></p> <p><i>Place specific art.</i></p> <p><i>For a long time I have been interested in mounting a canvas in a football goal. Previously I was thinking that I should paint a motive at home, so that it was ready and then hang up. But now I have become interested in doing something more interactive</i></p> <p><i>One idea that I have is to go out to the football field next to the house where I live and hang up an empty canvas in the goal, bring some water based paint and ask some kids to kick the football at the canvas after I have poured paint at the football. But then again, I'm not sure what I'm after, what I want to say or get to, or even which questions I want to ask when I go through with the idea. But of course this kind of art work poses questions in itself; is it painting to kick a ball at a canvas? Who is the artist, I or the player or both? How much credit can one take when chance has played such a major role in the painting? What has painting got to do with on a football field? How does sport and art relate? [...]</i></p> <p><i>Comment 1: [...] The football project is an interactive work that somehow happens there and then. You could video record it. But if the painting becomes incredibly good looking then you will have to take it down and find a</i></p>
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the place specific art work	<p><i>special place for it.</i></p> <p><i>Post: [...] I forgot to write that, but I definitely will video record the place specific art work! [...] This could be real fun and I don't think it will be hard to get some neighbour kids to participate, I met two of them with a football under the arm, yesterday in the elevator.</i></p> <p><i>Sol: Hi (student's name)! Your ideas are good. Have you seen the film "Exit Through the Gift Shop?" http://www.imdb.com/title/tt1587707/ Call me or (main teacher's name) tomorrow Friday, if you want supervision.</i></p> <p><i>Post: Yes, sure I've seen it! It's a cosy film. I would be glad to have some supervision tomorrow, not that I have any immediate questions but it is always good to get some comments on what you doing.</i></p> <p><i>Comment 2: Hi (student's name!) [...] I really like both of your ideas! [...] Concerning the football painting, I would definitely call it place specific, it doesn't matter if it is just temporary. It is a football field, where football is played every day, and you cover one of the goals with a canvas and paint with footballs, that is right on the spot. Practice some kicking yourself, then you can escape the feeling of not being entirely included in the creative part.</i></p> <p><i>Post: It looks as though I will use black paint, and I have probably decided not to kick the football on the recording. [...]</i></p> <p><i>Comment 3: Just want to say WOW! I'm so impressed that you are so updated in the world of graffiti with all that there is to that! [...]</i></p> <p><i>[...] To think about the various degrees of completeness in a work of in the beginning of the process...I twist and turn that a lot myself...sometimes too much...to let something grow within a given framework is perhaps the goal...Form must push content...difficult, difficult...but during the invention/building phase everything must be possible, brainstorming!!! Football and painting...to place them together... very thrilling!!! [...]</i></p> <p><i>Very good ideas that you presented here... I just read it today...have been a bit busy/confused in my own/other</i></p>
(example of my showing that I am present, but without interfering)	
student replies back to me directly as in other social media forum	
credits ideas	
gives supporting arguments for why the idea is place specific	
suggests way of expanding that performance of the art work	
replies to suggestions	
credits student's prior competence	
relates to and reflects upon student's previous discussion about the creative process	
explains previous	

absence	things...
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Figure 6.12. Extracts from a student's blog post about her ideas and plans for various art projects

The student's post quoted above (6.12) generated comments from several other students, so that there became a discussion in the thread. This student started out by sharing her thoughts on the initiation of a creative process. She described how she had a vague idea about doing something in relation to a place she just visited, but how this idea did not occur clear enough. The idea was related to a material, iron ore pellets, and the students shared her ambiguity concerning whether it would be okay or not to start up an art project with just a vague notion, connected to a material and a place. For me this reflection is very interesting, because, as I see it, the student is describing the initiation of a creative process, which does not yet have substance enough to make her convinced that it is time to start. When the student comments that this project will probably have to wait until Spring, I am thinking that she has confidence in the creative process and she know that these vague ideas will take shape if she just waits. For the other students, this kind of shared reflection on the ambiguity of a creative process is valuable, because they can recognize the dilemma, and find some comfort in this students patient attitude towards the creative process. The student then very concretely presents different ideas for working with the place specific art assignment. Again, she shares her doubt about the idea for the work, and as I interpret it, she questions if her idea is to vague to serve as an idea for a legitimate conceptual artwork. The student admits that she does not know precisely what she is after, what she wants to say, what kind of results she is expecting or even what questions she wants to ask. As I was coding, this students reflections made me start thinking about the artistic creative process in terms of Rittel's concept of wicked problem solving (Rittel, 2012) . The ambiguity and the many general questions about the initiation of a creative process raised by this

student in the blog post, generated encouraging answers from other students. Some of these comments provides hands-on suggestions about how to continue in practice with these ideas, other comments assures her that the ideas are interactive enough to count as place specific art (figure 6.11 shows the place where the student is planning to perform her football painting). One of the other students also comments on the student's initial reflection about the ambiguity of the initiation of the creative process, by sharing her own thoughts about letting something grow within a given framework and that form can also push content.

THE CREATIVE PROCESS

In the dialogue I had with the main teacher, we talked about how students could follow how other students worked within the same stage of the creative process, and be inspired by how the other students had solved, for example, choosing a place for their land art work, becoming inspired for example to work with water or to work with the decay of nature in the Autumn, to widen their own pre-supposed images of what a land art project could become. And, especially when students felt that they got stuck in their creative process, they expressed that they were helped by looking at how other students had solved thing and worked with their projects in various different ways. I returned to the notion that I had, that this is how I experience that the learning environment of a preparatory art school works, that you walk around in the studio looking at the other students paintings and sculptures, becoming inspired by how they have worked.

Sol: When students got stuck, they could log in to the blog and look at what the others had done at the same stage. And see that another student had visited a lake, and think that; well I have only thought about this in a city, but I could of course also go out in nature.

Teacher: Or, think that there is actually water in a city too.

Sol: Yes. And some students have also commented this, that it was beneficial that they could see what the others were doing, and for me, this is how an art studio in a preparatory art school works.

Teacher: Yes.

Sol: You don't get stuck, because then you go around in the evening time and spy on what the others are doing, looking at others' solutions and it's not like you're stealing their ideas.

Teacher: But you always do that, I mean, you can't be afraid of doing that, of using others' ideas.

Sol: You get access to a whole group's different ways of solving problems, to their knowledge.

Teacher: Yes, because even when someone is working with 3D-graphics, and you are not interested in working with that, you can still get ideas from some of those things which that person has done with 3D-graphics, and these ideas can change the way you look at what you are doing.

The teacher and I discussed that there is a difference between becoming inspired by others and stealing their ideas. You become inspired when you have access to a whole group's various ways of solving similar, but not the same problem (different materials, content, intentions). In this sense you are immersed in the knowledge production of group as a whole and, from my experience, this is rare in learning environments of higher education. The image on the opposite page (figure 6.13) shows an example of a student's tangible work-in-progress during the creative process. This student has documented the results of silk screen printing at a print maker's workshop.

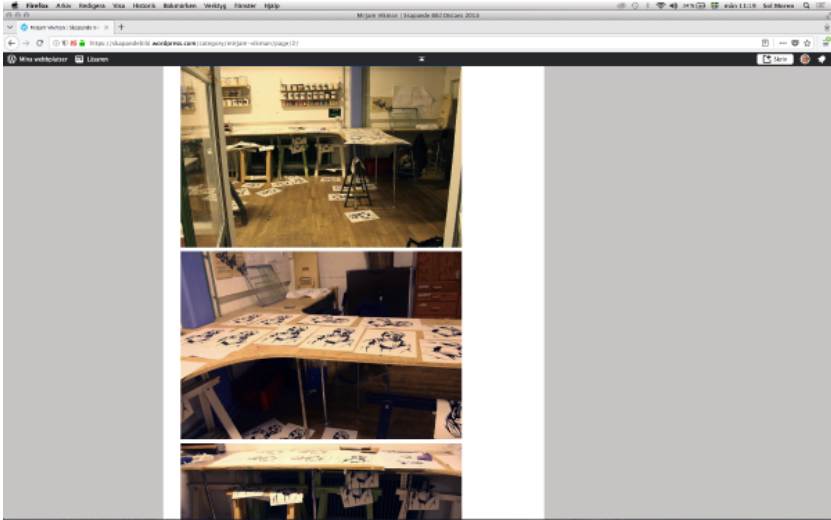


Figure 6.13. Photo documentation of a student's silk screen prints at a printmaker's workshop

<p>shares strategy for artistic work process and motivates that</p> <p>presents concrete work plan in steps</p> <p>names workshop</p> <p>considers limitations</p> <p>mirrors students concrete work plan</p>	<p><u>Update of the situation</u></p> <p><i>Post: I have decided to take one project at the time and not to work with all the projects simultaneously, because I have a tendency to get fragmented and not keep focus long enough to "think things through" [...]</i></p> <p><i>Street art: The street art project is first in line as that is the idea which I feel most ready with, and for practical reasons as it has to be done before it gets too cold [...] On Tuesday I will visit (name of printmaking workshop) in (name of town) to print the silk screen posters and then I will go to [...]</i></p> <p><i>Place specific art: This art work should be performed before it becomes too cold and people stop playing football outdoors. [...]</i></p> <p><i>Comment 1: Sounds like you have everything under control, how fine that feels! Good that you decided to start making... so you don't mess up things. [...] At some</i></p>
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and encourages decision	<i>point you have to say stop... [...] I follow your ideas but I don't have any good advice to give at the moment.</i>
relates own work process to named workshop in student's post	<i>Comment 2: (Name of printmaking workshop) is perhaps something I should check out? At first I thought I would try with the printer of the school, but I don't think that would be popular and I would prefer a larger size than A3. It feels like you have moved forwards a great deal - both in your thoughts and in your practical work.</i>
credits creative process	<i>Post: Here you can read about (name of printmaking workshop); (web address) They have creative workshops at (name of street) I am going to print silk screen, art you going to do that or just print? Because otherwise (name of company that prints) is good if you want larger things, but often quite expensive if you just order one print.</i>
shares more information about workshop and other possibilities	<i>Post: I will go in and read about your project, you become a little stray when you read about all projects randomly so I'll try to go in and read all posts of one person at the time. I'll get back with hints and advice once I have read... [...]</i>
reflects on structure of platform sees the possibility to categorize	

Figure 6.14. Extracts from a student's blog post about work-in-progress

The post presented here (figure 6.14) exemplifies how two students become involved in a dialogue about techniques, material and workplaces, as they both planned to work with printmaking. Getting inspiration, hints and advice about practical issues from peers, who had come further in their work processes was something which many the students expressed as valuable for their creative processes. The image on the next page (figure 6.15) shows an example of a student's documentation of the material which she is presently working with. In the text belonging to the same blog post (figure 6.16) she described what impact and importance materials and materiality had for her creative process.

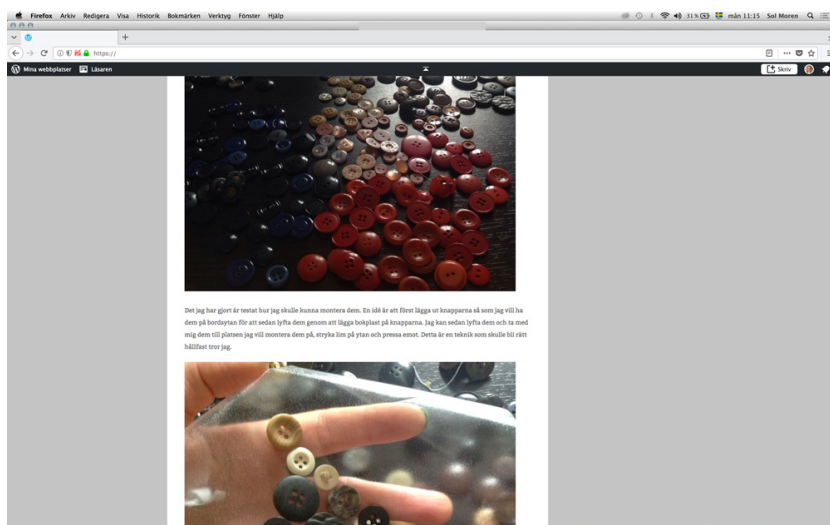


Figure 6.15. Student's documentation of experimenting with material for a Street artwork-in-progress

<p>shares positive emotions of working with the material</p> <p>shows empathetic understanding and expresses a wish to share the students experience</p> <p>credits idea and choice of material</p> <p>asks questions and suggests of how to</p>	<p><u>Mounting experiment & buttons inferno</u></p> <p>Post: It is something about the buttons which makes me want to have more and more. I am now awaiting my third Tradera jackpot... I take out my buttons and sort them and move them around. I love the sound and the feeling of pushing them around on the surface of the table. I have yet not decided which form I would like to exhibit [...]</p> <p>Comment 1: I can imagine how fun your experiments with colour and shape are, I would have liked to join in! To sew some buttons or all of them on a plastic sheet [...]</p> <p>Comment 2: Hi (student's name) you are pondering. Nice and unique idea to use plastic and buttons. Is it a technique which you used when you made all the tattoo pictures? What will you do with it? Is it a Street art where you use the plastic to hold the buttons in place, in patterns so that you can put it up at various locations in the city? If this is the case, it is a nice idea I think.</p>
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<p>proceed with the art work</p> <p>expresses a wish to share the students experience</p> <p>reflects on possible sound art work</p> <p>confirms the other two student's wish to share experience</p>	<p>(student's name)</p> <p><i>Comment 3: I would also really have liked to join in... Seems meditative and very aesthetically enjoyable... and when you described the sound of the buttons... Perhaps complement with a free sound for the people passing by... Sound recording? Perhaps too expensive in practice I suppose, but it would be like showing appreciation to all the sewing house wives, a documentary mood.</i></p> <p><i>Post: It would have been good to have you here. Yes, perhaps I should record the sound... If not only to share it with you.</i></p>
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Figure 6.16. Extracts from a student's blog post about her experiments with an experiences of the material

When I look at the photo documentation (figure 6.15) of the buttons as artistic material, presented in the text through its materiality (figure 6.16), I get a feeling that the students involved in the conversation have become a community. Interestingly, the student now writes about her artistic process in a physical way, referring to senses and sounds, in an emotional way, and the other students replied in a similar sensitive mode, as though they are sharing the same physical space, rather than a virtual platform. Time has passed and the students have gotten to know each other, like they would have done in a campus course, while working with their projects in the physical environment of a shared art studio. While coding the posts according to the chronological development of the project in time, the students have now started to comment on each other in a more spontaneous way, where it becomes more of a conversation. In the dialogue that I had with the teacher, she talked about this phenomena of spontaneous commenting in artistic learning environments.

The oral tradition of art studio education

Teacher: I prefer spontaneity. If you're going to lecture, then you can have a script, otherwise it might take up too much time. But if you're going to comment, then you should do that in a spontaneous way, so that it gets done. Instead of spending a lot of time writing well formulated comments in text, (which you could of course have as a specific assignment sometimes) to get as many comments as possible, for example if you work at the academy of fine arts or in arts education. When you are going to give response to someone else's on-going work, then you don't sit down and write a grand, complicated text, which is then shortened into two or three lines. You just go in an comment, directly, and that is what I mean with spontaneity.

What the teacher described to me, based on her own practical experiences, was, as I comprehend it, a way of commenting or giving response based on an oral tradition of art studio conversations. The way you would get response and learn to comment or give response to others, as a student of fine arts or arts education in Sweden would be based on this oral tradition (Wolgers, 2011). Students would get response depending on the level of education, in the open environment of a shared studio in preparatory art schools, or in their private studios if they studied at the academy. In a preparatory art school students would often share the same studio, while students in the academy students would get their own studio from the second year or so. Students would then receive spontaneous comments to their on-going art works from their ordinary teachers, guest teachers and by their fellow students, on a more or less regular basis. This tradition of spontaneous oral commenting upon works of art in progress in the shared fine art studio differs from traditional academic seminars and it is interesting that the teacher reflects upon the difference between providing technical support for students to develop skills for this kind of spontaneous oral commenting of the art works in progress and for developing skills for commenting other students work in (academic) writing. Where the production of academic text seems to become a hindrance for the spontaneous commenting, and where the teacher values that the students learn to formulate and share spontaneous oral comments and have dialogues about their art works.

The open space of a shared art studio

During the study of the distance course intervention I have come to realize that much of my design ideas can be traced back to my own education as an artist and to the design of art school learning environments. What is so special with art school studios? The shared studio of a preparatory art school would generally be a spacious room with high ceiling and large windows facing the North. During daytime the students of Visual arts in preparatory courses would typically study model drawing, painting and sculpture in the art studio, instructed by an experienced artist. During evening time students would stay on to work with their own artistic projects or go for home dinner and come back later to work in the studio during night time. What could then be considered to be special with the art studio as a learning environment - and, which factors of this learning environment might have an influence on students' development of creativity? Something that might make the art studio unique as a learning environment is that it is an open space, both physically and socially where students can share their creative processes. While students study model drawing, painting or sculpture individually, they could easily take a walk around the studio room to see how their peers are working with and solving similar problems. Another influential factor might be that in the studio the art work-in-progress is often left in the room on easels and modelling stands, displayed for everyone to see. In some cases this shared visibility of the artistic process has practical reasons, for example a large wet oil canvas is not easily moved or covered, but the openness might also be explained as a tradition in art schools. The fact that the students have open access to each other's artistic ideas problem solving and ideas during their creative process is unique for the shared art studio as a learning environment something which might be of importance for students' development of creativity. In the reflective practitioner's dialogue which I had with the distance course teacher, our discussion came to circle around the traditional art studio as a learning environment. We discussed the art studio as a creative space, both in relation to the architectural spatial prerequisites of

the room, the open visual access to artworks in progress, and the social openness for talking about art, mentioned earlier in relation to the oral tradition of knowledge transference in art studio education.

Teacher: The university provides students with opportunities to work in art studios, but at the moment it is so crowded in the studios that the students hardly have anywhere to work. And sometimes, depending on the activities, for example if students are supposed to work with recording sounds, then the university might not be the best place for that purpose, but if they have a shared blog they can still catch up with what the other students are doing. Then they can check and be inspired by what others have done and also see what they have done themselves, as in a log book or process images, because of the timeline. So, when they have made something they can see, step-by-step how they did it, and they can also look at how other students have worked previously, in contrast to a campus situation where the work process just disappears, this is beneficial. If I work with sculpture, for example, then what I make is visible in the present moment at the location where I am working, but later, that part of the process is no longer visible. But if you have the opportunity to document the process and upload it on a social media platform, then you have a possibility to rewind.

Sol: Yes, especially when you share a common art studio that works like a home classroom. In a preparatory art school the students' paintings are mounted and visible while they are working with them.

Teacher: But that is only while they are working with them, it is only when you document that you get access to the whole process, and in the old days you didn't even photograph your things, because it was expensive to develop and copy photographs.

Sol: You are right. The blog worked in the environment of preparatory art school as well. The students there said that they got to know each other in another way during my course week, different from what they had done the two years that they had studied together. I believe this was because, through the shared blog they could sort of read each other's thoughts.

Teacher: Some students may be worried about formulating their thoughts, knowing that what they write will remain, so what you say is important, that their intuitive process should not be graded.

Sol: Yes, and then it is really important, I instructed the students not to criticise each other, just to give each other positive response. And, that

a post should not be too long and that you should not be too personal concerning your private life, can also be important to say.

Teacher: But if you thought that, that one should rather be red than blue, could you not write that as a comment then?

Sol: No, not according to my instructions. But one could perhaps have expressed it in a different way. One could perhaps have said: 'I associate this to a lake and I think about blue' without saying that it should rather have been blue.

Teacher: I am thinking about that you use constructive critique, but that is, those who are studying to become teachers have to learn how to give constructive critique as well, but.

Sol: Or, perhaps they do not. Or perhaps they do need to learn not to criticize, but to give some other kind of, perhaps you don't need to come with critique. I mean, you don't in art, you say, oh, I when I look at your sculpture I think about this and I think about that and about this other artist, and about this which I have experienced. And about this, my own art work and you sort of give a lot of associations but you seldom say that 'you ought to make that sculpture in a different way'.

Teacher: I can do that.

Sol: Do you do that?

Teacher: Well it depends of course on the receiver, if you know that they can take it

Sol: Or if the receiver has asked for it?

Teacher: Yes, I have an artist colleague who wants to know, 'should one do it like this or could one do it in another way?'

Sol: Yes, but then she has asked for it. It is different to give someone feedback who is not doubtful and who has not asked for it.

Teacher: But if you are a student then you just have to take it (laughs) but I don't know.

Sol: No, I don't think so.

Teacher: Very interesting!

Sol: I do not believe that it necessarily is constructive to get critique. I think you have a feeling for when you need it, and then you ask for it.

Teacher: But if you are in a distance education then of course you can ask for it if you are in a seminar.

Sol: What I mean is that it judgemental critique, that is, judgemental evaluation that one should avoid.

Teacher: But that is about how to formulate critique, so that it becomes uplifting, I mean, aiming for you to develop.

STUDENTS' INSTALLATIONS AND REFLECTIONS

As the eight weeks' course in Land art, Street art and Place specific art was coming to an end, the students began to install their artworks at the various outdoor locations that they had chosen to work with. The artwork installations were set up locally, as each of the students had worked with the place, the landscape and the community where they lived. Because the students were distance students that came from different parts of Sweden, none of them had the opportunity to look at the other students' artworks in real life. Without the virtual art studio intervention, the students would not have been able to follow the progress of each other's artworks, or take part in each other's thoughts and reflections all through the creative process. They would only have been introduced to each other's final results at a seminar held at one of the campus meetings. When I coded the blog posts, I was surprised to see how difficult this last stage of finalizing the artworks had been for many of the students. Compared to students' thoughts and discussions in the blog, connected to the previous stages of the creative process, the students' reflections at this final stage expressed doubt, disappointment, self-criticism, and perhaps even sadness, something which had not been frequently represented during the other stages. This really made me wonder, is it generally this hard to conclude a creative process? Why does all the doubt and second thoughts appear at this stage, while the students are about to finish their artworks? The following posts exemplify students' reflections on their finalization of Land art, Street art and place specific art projects. The image on the opposite page (figure 6.18) shows a student's photo documentation of her Street art installation at the local train station.

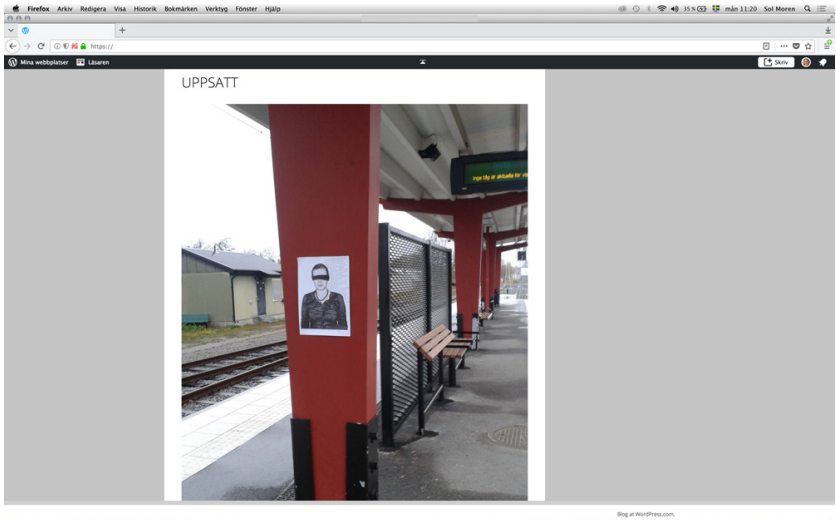


Figure 6.17. Street art - pasted up

<p>reflects on result</p> <p>shares both a first impression and a modified version</p>	<p><u>Pasted up</u></p> <p>Post: Too much of a coward to upscale this. [...] Anyway... here it is at the train station [...]</p> <p>Comment: It looks dramatic... makes you wonder if it is someone who does not feel well... Again, you see that the picture is nicely crafted and then you understand that there is more to it than that [...] But now I would like to read your poem [...]</p>
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Figure 6.18. Extracts from a student's blog post commenting her feelings and reflections while installing her street art project

<p>shares experiences of doubt in relation to finished art work</p> <p>expresses curiosity of the unknown audience's reactions</p> <p>poetically dwells upon all three art projects</p> <p>shows empathic understanding</p>	<p><u>After smart</u></p> <p><i>Post: At first all I wanted to was escape [...] and just leave my creations to their destiny. But now I wish that I had dared to stay. I wrote by hand on the poster at the station. Have anyone answered? What did they write? What happened to my sculpture? Did she get company? Has she moved to someone else's home? The tree I can see every day. The leaves have crinkled despite our special treatment, but in contrast to all other leaves they are still hanging on, despite wind and rain. The pink pegs look like exotic flowers from a distance. I wish someone could use them to hang something else in the tree - lost gloves or memories - that we would have started something. [...]</i></p> <p><i>Comment: I feel like you! I wish I had been cooler and sneaked down to listen to people's comments or even talked to people... [...]</i></p>
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Figure 6.19. Extracts from a student's blog post where she writes about her wonders about what happened between her installations and the unknown audience

This student (figures 6.17; 6.18 and 6.19) had just successfully finalized and installed three artworks. Even so, her reflections expressed both doubt and second thoughts, perhaps not so much about the artworks in themselves as in what would happen to them now, what kind of appreciation they would get from an unknown audience. The student writes about an artwork in a tree which she can see from her window, and I sense a sadness in her poetic description of this modified tree, where she has hung up leaves with pegs to keep them from falling off as the winter is closing in. The commenting student shows empathic understanding of how the student feels and shares her own experience of what almost seem to be regret or remorse of not daring or being able to meet the audience, to see their reactions. The enthusiasm that these students have shared with each other all along the creative work period seems all of a sudden gone. As I was coding these blog posts I was

surprised to find expressions of a similar low moods in a series of chronologically posted blog posts, by different students. The next post (figure 6.20 and figure 6.21) follows a similar mood of bleak afterthoughts.

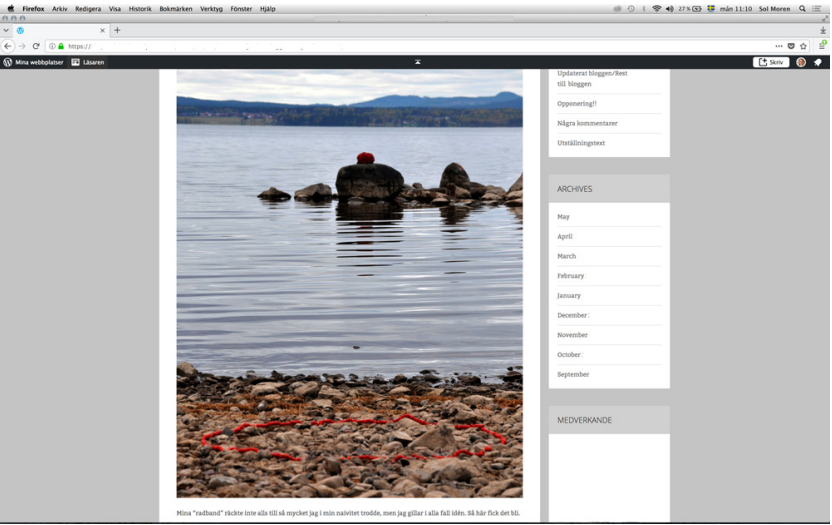


Figure 6.20. Land art project

<p>shares a story of problems that occurred during the process of implementing the Land art idea in practice</p> <p>praise the art work</p>	<p><i>(Students name) Land art. What are we looking at?</i></p> <p><i>Post: My "rosaries" were not as long as I thought in my naivety, yet I still like the idea. This is how it became. Some other time I might succeed in covering a huge round stone! I tried many stones before I made up my mind. My happy enthusiasm shifted shape slowly, as my feet went wet and my hands cold, and the apples went into the (name of the place) lake, while I lost the threads and cursed... But who said that it is meant to be easy?</i></p> <p><i>Comment 1: I think that it became very beautiful! And that you make a human imprint without disharmonizing nature. Nice.</i></p>
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thanks	<i>Post: Thanks that makes me happy!</i>
praise and comments colours	<i>[...]</i> <i>Comment 3: Incredibly beautiful! I like the strong colours, the red against the grey. Greetings (students name)</i>
answers and relates to comment	<i>Post: Thanks, the colours were important to me!</i>
praise	<i>Comment 4: Very pretty! It is interesting how the two forms relate to each other. Both forms relate to the round shape where one is grand and flat and open whereas the other is smaller and gives a compact three-dimensional impression. And not as easy to access, even though it is probably what you would notice at first, from a distance.</i>
comments art work from a sculptural perspective	
answers and relates to comment	<i>Post: Yes, it was not easy to create some interesting tension when it came to form, something extraordinary!</i>
shares poetic interpretation of the art work	<i>Comment 5: Very pretty! The red crowns the stone. And the rings are precise in their disappearance against the background to serve as a subtle surprise! [...]</i> <i>Teacher: Good photo, pretty with the quiet water, as a cover for a book of poetry. Which is the title?</i>

Figure 6.21. Extracts from a student's blog post about her land art project

The photo documentation of the student's Land art installation shows nothing of her struggle and disappointment, which she expressed in the text of the blog post. She describes the lonely, cold and wet experience of working hard to finish an artistic vision, that she has had, and not really succeeding in getting the material to live up to that vision, in real life. But who said that art should be easy? - she asks. Her peer students have a lot of comforting comments for her. Here, I noticed that the students had really taken in my golden rules, and tried not to just praise the artworks, but to talk about what it was that they appreciated. The peer students commented both colours, form, sustainability in the choice of material and how she has worked with the landscape as a room, composing by using the tension created by the distance between her different objects

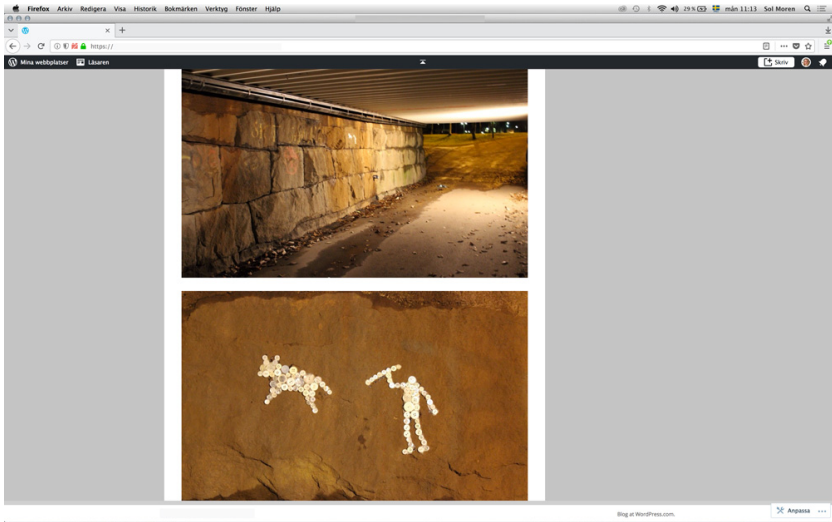


Figure 6.22. Street art - the buttons

<p>shares a story about how the experience of the creative process was rewarding in itself</p> <p>credits art work</p> <p>relates to material</p> <p>emotional response</p> <p>highlights how the student has concurred the</p>	<p><u>The buttons</u></p> <p>Post: This project was perhaps more during the process than what came out of it. I have sorted buttons for... yes... many hours. In the beginning there were only triangles and colour tones. After a while there was circles. Then it became words. And finally it became cave paintings. The production of these button formations have included a many kinds of glue. And the mounting demanded even more glue. It was not the smoothest. But it worked...</p> <p>Comment 1: Aesthetically beautiful and on top of that with a sense of humour! The contrasts are gorgeous. Human warmth as button images/words meeting cold concrete/metal/stone. One made with machines and the other with the fine craft of the hand. I like this and it makes me happy.</p> <p>Comment 2: This really became amusing and neat, with buttons. I think you should be pleased, you have really been in a process, but you completed the art work as well. As I expected, with curiosity. (name of student)</p>
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creative process	<i>Comment 3: I'm thinking about my grandmother's button jars. How they removed and saved the buttons before they weaved carpets from the textiles of the outworn clothes. It feels like a long time ago, yet not. Now there are other sorts of buttons. Nothing is further away from us than at the distance of pressing a button. Your buttons make me nostalgic.</i>
relates to personal story as part of a larger social history of women's social situation	
credits concept	<i>Comment 4: "Knappast" was genius!!! (the word knappast means "hardly" in Swedish and the student has played with the Swedish word for button, which is "knapp"). You should duplicate it and sell it to each municipality! A humble protest in all simplicity... can concern anything... Such as: "I hardly think so"... Great with the cave painting also with buttons [...]</i>
interprets art work	<i>Teacher: Very good and quite appealing Street art!</i>
praise craft	<i>Comment 5: What a work! Shows great patience. Pretty and creative!</i>

Figure 6.23. Extracts from a student's blog post about her final results

In the beginning of this post (figure 6.22 and 6.23) the student describes in which ways the creative process in itself have been important to her. She refers to the physical experience of experimenting with her material, the buttons, how she has spent hours just investigating the possibilities colours and form, and talks about this process as, perhaps being more rewarding than the actual results of the process. When I was coding these blog posts, which were uploaded quite close in time, all describing students' final stage of the creative process, I was surprised to experience, what I think of as a melancholy mood among so many of the students. In this particular post, the student refers to her previous, on-going creative process as a stage where she was in a certain state of mind. She then she compares that previous stage, with the present stage, as in having finished and installed her artworks for the exhibition. When she compares these stages and the states of mind which they brought about, as I understand it, she reasons that,

perhaps being active in the creative process was the more rewarding stage. What is interesting is that, many of the students seem to make this comparison between the stage of being actively involved in their creative process with having finished and being left out of the creative process. One way of seeing it would be to say that, the pleasure that students have experienced during the creative process, while making the artworks, in a way hinders them from enjoying the results. Finalizing the process and installing the artworks also means that the creative process is over. The students reaction to this seems to be an inability to appreciate their results. However, in the virtual art studio, when the students expressed these feelings of not being really satisfied with their final results, the other students were very supportive and good at pointing out the positive aspects of each other's final art installations. This peer-to-peer support was especially important for these distance students, as they could not visit to each other's Land art, Street art or place specific art in real life, because of the geographical distance between their places, where they had installed their artworks.

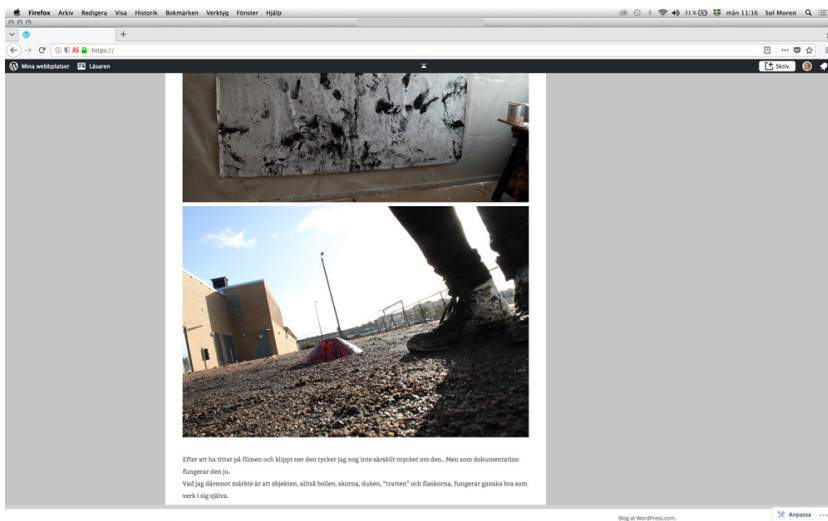


Figure 6.24. Place specific art documentation of the football painting

<p>shares self critique</p> <p>reflects upon the art status of the objects used in the performance</p> <p>returns to previous question about definition of art work</p> <p>credits art work</p> <p>shares specific interpretation of art work</p> <p>credits objects</p> <p>shows surprise yet recognition to interpretation</p> <p>argue for objects status as art works</p> <p>praise performance in humoristic way</p> <p>humoristic praise</p> <p>(the main teacher was in charge of the content of the assignment)</p>	<p><u>Documentation place specific art</u></p> <p>Post: Extended sporting. After having watched the video and cut it, I don't think I am especially fond of it. But it works as a documentation. What I noticed however was that the objects, that is the football, the shoes, the canvas the cone and the bottles work well as art works in themselves. I have thought a great deal about the definition of place specific and I feel that perhaps I don't connect enough to that. The place specific in this case is that I create the art work at the specific place, but I do not leave anything there. [...]</p> <p>Comment 1: I think this was very enjoyable. How do you capture the movement and the feeling of sports in a picture? I think you have showed this. Even the cone and the shoes I think captures a raw feeling of the sport, almost as if they deserve to be part of the art work. [...]</p> <p>Post: I have not thought about that it is precisely this that I do, but it is. Physical, visual image proof of the motion. The shoes and the cone I like as well, they almost look sculptural, especially since the shoes have gone completely hard and stiff after that the paint dried.</p> <p>Comment 2: I agree that the shoes, the cone and the football functions as an art work. Neat. Besides, I like the painting, there is explosivity in it. But I think it works best together with the shoes, the cone and the ball.</p> <p>Comment 3: Great idea. You are one of the big stars in football now and on top of that you have succeeded to make a place specific art work, around that. Very good. The video about the art work process was entertaining. (name of student)</p> <p>Post: Yes, and I have a unique playing-style too, ha, ha.</p> <p>Teacher: The art work is place specific even though you do not leave any traces of it, it is a work with time included. Good job! You could let the film run in slow motion and loop it.</p>
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Figure 6.25. Extracts from a student's blog post about her finalization of a Place specific art project

In this final presentation of the football painting project, the student shares her reflections concerning the definition of Place specific art, in relation to objects and performance. What is the artwork in this case? The objects used in the football painting performance of kicking a ball soaked in paint against a canvas mounted on a football goal, the shoes, the cone, the ball carries traces of the action, as well as the canvas. What kind of artwork is this? Is it Place specific enough? And what about the video-recording, is that just a documentation or is it part of the artwork? All these questions, posed by the student, contributed to an interesting discussion between the students in the virtual art studio, where the teacher joined the conversation as well. I find this to be an evident example of a parallel to discussions which would normally take place between art students and artists as teachers in an ordinary, physical art studio as a learning environment.

Participation in the common production of knowledge

There are different ways of conducting participatory art, where the artist can just ask people to participate and do something within the framework of the art project without actually asking them to contribute with any knowledge to the art production. What I have realized is that, I prefer to work with participatory art in a way where participants are invited to contribute to the knowledge production. This was inherent in the design of the virtual art studio intervention, in how the shared blog worked, where the students influenced other students. In this way students contributed to the common production of art and knowledge. When I studied the posts and comments of the virtual art studio, I could see that those students who did not really know what they were going to do became inspired by the other students' work in progress, and this is something which the students expressed in their written comments as well. In practice, they could log in to the virtual art studio blog and look at what the other students were doing, and for example

see that a peer student has taken a walk around a lake, and by seeing that realizing that there are other ways of approaching the problem of the assignment, than what they had imagined. In this respect the possibilities of how to work with Land art, Place specific art or Street art expanded, through the different paths that various students would take. Because these different paths and possibilities of creative problem solving processes became visualized in the virtual art studio, all students contributed to a common production of knowledge, which everyone involved could benefit from.

Students talk about the virtual art studio

Sol: Is creativity dependent on a community?

Student 2 and 3: Not always - but it's a little like that, it actually becomes a little better...

Student 2: I don't know if this is a result of my own personal development - or - if it has something to do with the way we have worked in, but lately I have felt that I have more often showed what I have done for others, and felt that, somehow I like to have this response and that is something which I haven't really done before...

Student 1: If you participate in a collective where all take part in each other's work, it becomes less result oriented and then creativity grows broadly...

Student 2: ...and you become more courageous...

Student 1: ...it takes another shape and you become open for other creative turns...

Student 4: (who has recently entered the room) It could also be that you are insecure about some idea that you have, that you think it is strange or vague or so, and then you get some small positive comment in the blog, and then you know that if you have been able to describe your vague idea in words and someone has commented upon that and understood what you meant, then you dare to continue with this thought... ...like you did in the Autumn (addresses student 1) you sent me a link to someone working in a similar way, do you remember?

Student 1: ...yeah, I remember.

Student 3: You could still choose to be alone and stay in your cocoon if you like, because you don't have to share everything, if you need to be secret because you are trying out things. When you are ready, then you can show it in the blog. If you are afraid of having too many people seeing what you're doing all the time, this can be regulated...

Student 4: Yes you choose for yourself how much you want to share, that's what's so smart...

Student 2: But then, it could also be that you drop your own ideas a little too fast, thinking, oh well, this might not be so fun, this could go and I'll do something new instead, but if you have already showed it then you feel a greater responsibility to, sort of, (laughs) give it a chance (others laugh)...

Student 1: But creativity per se, I don't think is depending on a community, but I think it appears very different on an individual and a community level, because the more heads that are involved in a process the more intersectional and... (searches for the right a word with her hands)...

Student 4: ...that ideas feed new ideas, you mean?

Student 1: Diversity - in English (others help to translate this word into Swedish)

Student 4: It is harder to get stuck in you own swamp when you have so many others around you, I think...

Student 3: It reveals the sim-sala-bim (performs a magic trick gesture with her hands) look what I've done! Because there is a great pressure in that sim-sala-bim, and this becomes more of a process.

ANALYSIS OF THE DISTANCE COURSE INTERVENTION

This chapter has provided an example of a participatory art intervention online, the virtual art studio, which was implemented together with students and their teacher in a distance course in visual arts. In this chapter I have been particularly interested in looking closer at the visual art students' interactions and relations, at what was going on in-between students in the virtual art studio platform. In this chapter I have studied how the intervention influenced the students' interactions and relations, and how this accordingly affected their creative processes. To understand more about what happened in practice, I have compared my reflection-in-action with transcribed, translated and coded empirical data from the virtual studio blog archive. The empirical data has also consisted of recorded conversations with the students and the teacher, and students written comments at the end of the study year.

Focused coding and concept mapping

The empirical data has been studied with various constant comparative methods and procedures of grounded theory such as line-by-line coding, memo-writing, focused coding (Charmaz, 2006; 2012; Glaser & Strauss, 1967) axial coding (Strauss & Corbin, 1990), concept mapping (Clarke, 2005). The coding of the students' blog posts and comments, presented in tables, provides an example of focused coding performed in the middle of the abductive process of grounding theory in practice. In this case, the coding focused on the communication between students, on how they interacted with each other in the virtual art studio, as well as following, chronologically, how the students' social relations developed over the time period of the eight week's course. This focused coding have also been open for new issues and idea to emerge, or issues which might have seemed insignificant from the beginning. As an example, during the focused coding I became increasingly aware of the impact of my more or less informal social instructions for how I expected the

students to act while giving each other response to their work-in-progress in the blog (see page 183). The combination of focused coding, reflection-on-action and concept mapping (exemplified in figure 6.27) about my design of the participatory art project in this case, led me further on to taking a closer look at how the students had put my instructions to practice.

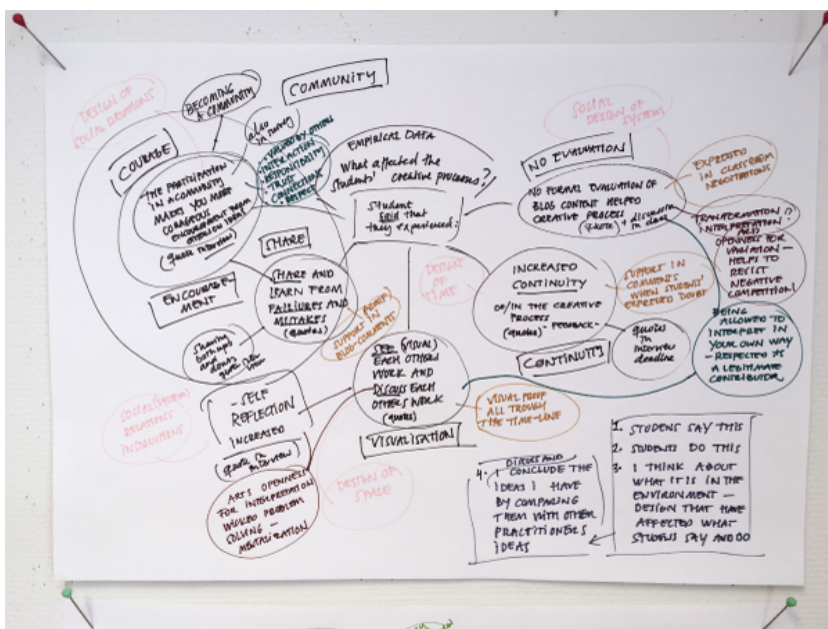


Figure 6.27. Concept map with categories emerging from students expressions of how the intervention affected their creative processes

I could see that the visual art students had really engaged in practicing my social instructions of how to act supportive and responsive but not critical when commenting each other's artworks-in-progress, and I thought of this as the students becoming *non-critical friends*. Following the chronological progression of students conversations in the virtual studio platform, I could also see how the students developed new ways of giving response and support to

each other, replacing criticism with other constructive solutions. The abductive process of grounded theory involves returning to data to check emergent issues and ideas, and when I compared the students actions with my original instructions, I realized that I had actually provided them with many vicarious examples of how they could approach the problem of not being critical, yet talking about their artworks-in-progress with each other in a constructive way. I then continued to investigate this issue in dialogue with the main teacher of the visual arts course, and realized that this was actually related to the oral tradition of art studio education (see page 198). This is an example of how I have worked with constant comparative analysis. I will now end this chapter by discussing some important issues and ideas emerging from the study under the main categories of: visualization; mirroring; community and continuity.

Visualization

Visualization have emerged as a central issue, through out the various procedures of comparative coding. The virtual art studio online platform offered a possibility for the students to visualize their own creative processes, by uploading sketches and photo documentation of their work in progress, as well as written reflections. When I studied the students blog posts in the shared platform I noticed that they had in many cases commented on each other's visual documentation of the artworks-in-progress, not just on the reflections presented in the text, sometimes the comments had an emphasis on the visual images and sometimes they did not concern the text at all, only the images. The affordance for visual, semiotic communication was thus important. Students uploaded more images than was expected of them for the assignment and they also commented more frequently on other students' images. In the written comments about the project as well as in the conversations which I had with the students, many of them mentioned the importance of the visual, referring to seeing others work and being able to visually follow what others were doing.

Student: To be able to share your work visually with each other and to be able to follow each other's work, and that I could decide to do this at the time of the day that suited me best, have been enjoyable and stimulating creativity.

Student: It has been rewarding to have a receiver and to see and become inspired by others work.

Student: What I experienced as most rewarding was that you have opportunity to see each other's work, which can be inspiring in a creative process. The discussions around the work was also an important issue.

Mirroring

The visual art students highlighted that it had been beneficial for their creative processes to be able to see what the other students were working with, and that the other students could see what they were doing. This mutual visual exchange, of seeing others and being seen by others, I think of as mirroring. The on-going process of students visually mirroring their own artistic process and art works, in the other students' similar processes and artworks, provided opportunities for the students, not only to self-reflect, but to meta-reflect on the creative process. This was also confirmed in the conversation which I had with the students (quoted on page 159) where they said that they became more aware of their own creative process when they could see and share the creative processes of the other students. Whereas the opportunity for students to show and to share their artworks-in-progress visually, became important for students' self-reflective understanding of their creative processes, the social relations emerging as students were commenting on each other's blog posts, became important for supporting the continuity of their creative processes. Students' regular and continuous visualization of their artistic processes in the digital platform, changed the structure of the learning environment in the distance course, where there was previously no support for connection between students in-between the campus meetings, to resemble

the system of open visual access of a real life art studio of a campus course in a preparatory art school.

Community

The communication going on between the visual art students in the virtual art studio, while they were posting images and thoughts about their artistic works-in-progress can be regarded as a form of informal social networking. The students described this as a sense of belonging, of having the other students present around them, of not being left alone in-between the campus meetings and as becoming part of a community. As I read through their blog posts chronologically while coding, I sensed what they meant with becoming a community, because I could see that the quality of their responding comments developed over time, as well as the social relations (see page 196-197). As time went by, students commented on each other's blog posts and engaged in text conversations in a more and more easy-going way, much like a community of friends in a regular social media forum.

Student: The feeling that we in the class knew each other, came quickly. This helped us to be brave enough to comment and to help each other in a personal and honest way.

Student: Experiencing a greater sense of presence with students and teachers because of the blog. Before, it almost felt as if you were forgotten between the campus meetings, even though the teachers were very engaged and present during the campus meetings.

Student: I never felt alone in-between the campus meetings, which you easily do in a distance course.

In their written comments, the students expressed that they experienced that the virtual art studio supported their creative processes in various ways, for example, that they became encouraged by the response from other students. They mentioned that they were helped by getting advice, quick response and encouraging feedback. Students pointed out that it was important to have the opportunity to share ideas during the inspiration phase,

prior to the assignments, and that they got ideas from others through the discussions in the platform. It was evident that the students made more comments than what was expected of them, to fulfil the assignment. They also stated that it was easier to progress in your own creative process when you were provided with the opportunity to communicate with others during the work process

Student: It was beneficial to get constructive feedback from peer students involved in a similar process and to get response to thoughts and ideas when needed.

Interestingly, this student noticed that it is a very special kind of communication, to be able to get response from others that are involved in a process which is similar to your own. As I see it, when you have open access to others students' creative problem solving processes, students that are working with similar, but not the same problems as your own, then you are immersed in, and can benefit from the on-going knowledge production of a creative community, as a whole.

Continuity

Student: I experienced that blogging made my studies progress continuously during the term in a flow that was more even. Before, my study efforts were more concentrated to a certain occasion, in practice this meant that I conducted my assignments in close connection to deadlines or just before the campus meetings.

The student quoted here pointed out that her creative process became more continuous, and that the campus meetings and deadlines for uploading assignments in the ordinary web platform of the university became less influential for her work effort. This is interesting, because according to my experience, this is what happens when you begin your studies as an art student in a preparatory art school. You start working with projects for your own sake, and you are surrounded by other students who work around the clock with similar projects, which inspire you, and then your creative process then becomes more continuous (also discussed in

the dialogue with the teacher, page 198) The peer-to-peer support system that was introduced with the intervention was not evident in the learning environment before. However, the visual art students did not just get inspired by each other's ideas and share successful moments of their creative processes, they also shared their doubts, trouble, hesitation and failures.

Student: You could learn from each other and learn from each other's mistakes, and if someone had come a bit further in the process of searching, you could get an easy ride on their work.

Student: It was inspiring to see how many different paths our work could take and good to share failure as well as success.

It takes courage to share your negative experiences, in contrast to sharing your positive ones. The students had argued for that the virtual art studio should be a space that was free of formal evaluation (see page 169). This contributed to an openness for students to share both ups and downs of their creative processes, something which had a positive effect on the continuity of their creative processes. Now, students could get the support that they needed from each other, to be able to continue even when things were not going so well.

Student: When the blog was not formally evaluated and graded, on other terms than as an activity which you should have participated in, according to my experience we were more free and more creative.

Connecting the students with each other and giving them responsibility for supporting each other was an act of trust in their competence. The structure of the learning environment as a sociotechnical system was affected by the connections and increased interactions between students as peers. The system became more of a rhizomatic network and less of a hierarchical, one way communication system. The system changed from focusing on students as individual learners to focusing on students as contributors, sharing the process of making art as knowledge. The digital platform facilitated for this alternative structure to emerge.

7.

DESIGN FOR RELATIONAL CREATIVITY





In this final chapter I will present and discuss four design concepts for relational creativity: creative transformation, creative participation, creative comparative encounters and creative networking. These four design concepts have emerged from the progressive inquiry process of design, implementation, reflection-in-action, description, reflection-on-action along with constant comparative analysis of the participatory art interventions. The concept map on the previous pages (222-223) serves as an introduction to this chapter, illustrating how the four design concepts for relational creativity relate back to research findings of how the participatory art interventions have influenced students' interactions, relations and creative processes, in both of the interventions. The two empirical chapters five and six, have already provided rich examples of data, showing how the students, teachers and other participants have helped me to carry out the participatory art projects in practice. The real-life data of students' artworks, presentations and blog-posts have been presented together with my focused coding, aiming to narrate and visualize the storyline of the two interventions. The intention has been to support reliability, to some extent also replicability and accountability, by visualizing the correlation between data, code and my emergent ideas. In this final chapter, issues and ideas deriving from the two participatory art interventions will be brought together, aiming to compare, conclude and conceptualize my various ideas about design for relational creativity, emerging from both of the interventions.

CREATIVE TRANSFORMATION

- as in art's openness for interpretation and emergence for unexpected new solutions

I define creative transformation as an affordance for participants to transform information, according to their own unique interpretation of the meaning of that information. I argue that fine arts as well as

contemporary art, by tradition allow for this kind of creative interpretation and transformation of information and meaning, and that this premise also serve as the foundation for emergence, for unexpected new solutions. In the campus course intervention, the graphic design students were instructed that there was no right or wrong way of solving the problem of the assignment to interpret sounds and transform images, and that all of their visual images would be equally valid as contributions to the common art work. In the distance course intervention, each visual art student was free to form the assignment of making Land art, Street art and Place specific art according to that student's own interpretation. I argue that, because there is no correct or given answer to an artistic problem, various problem solving processes can exist as equally interesting, with respect to the individual's unique interpretation of the artistic problem.

Art's interpretability

In the campus course, all of the graphic design students made unique visual images as artworks, instead of working with the same tutorials, similarly, in the distance course all visual art students made unique art installations. I argue that, art allows for various interpretations to exist simultaneously, and to be equally valid. When the design students walked around in the graphic design studio which was their home classroom, looking at each others work-in-progress; and, when the art students were surfing in their shared virtual art studio, students were comparing their own creative processes with other students' creative processes. In this respect, students' acts of observing and comparing were focused on comparing-to-learn rather than comparing-to-compete. I comprehend this in relation to art's openness for interpretation, which affords for different problem-solving solutions to exist in parallel.

Mentalization

In the campus course, the graphic design students engaged in trying to understand preschool children's free interpretations of my visual images, which the children had transformed into sounds. The design students also tried to imagine how the same children were going to experience the visual images that the students were making for them (for example, pages 132-135). In the distance course, the visual art students took part of the documentation of peer students' creative processes, and commented on their artworks-in-progress, in a constructive and encouraging way. For the art students in the distance course, this act of seeing others, trying to understand them, reflecting upon how they might think and look at the world, contributed to an increased awareness of the students' own creative processes. For the design students in the campus course, the act of imagining how the preschool children had been experiencing, looking at and interpreting my original visual images to come up with their sound interpretations involved *mentalization* (Fonagy, 2001) which means, thinking about and trying to understand how other people experience the world. The design students in the campus course also engaged empathically, in trying to imagine how the children might experience the visual images which the students were making for them. The students wanted the children to experience their images in an appropriate way, according to the children's sound interpretations, but also with consideration and concern for the cognitive development stage of their age group (for example, pages 138-140).

Wicked problem-solving

The graphic design students in the campus course intervention were faced with the fact that there was a number of different ways in which my original visual images had been experienced and interpreted by the preschool children. The design students worked with transforming the original images according to several variations of interpretation. Being involved in this process of artistic

interpretation helped the students to not so easily get stuck on one alternative. Instead, through art's interpretability, students were encouraged to think about the social world epistemically, as constructed of several interpretations, where non of these interpretations is necessarily more true than the other. In this sense, the playful participatory art practice, of interpreting and transforming images to sounds, and sounds back to images again, became a way for the students to experience and practice working with *wicked problems* (Rittel, 2010 [1972]). Wicked problems are problems with no given answers, which are so difficult to define so that the problem formulation must take place in parallel with the problem solving process, and as I see it, often also in consideration to the various stakeholders involved.

A web of relations

Compared to regular assignments in higher education, where students would be asked to reflect upon their own learning processes, students involved in the two participatory art interventions, were not only engaged in reflecting upon their own learning processes. With the interventions, students became engaged in reflecting upon other participants' creative processes as well as reflecting upon their own processes. In both of the participatory art interventions, the systems were designed in such a way that the students became aware of their own creative processes, because they were connected with and became responsible for other participants. In the campus course the students became connected to and responsible for the preschool children as co-creators and receivers of their artworks and in the distance course the students became connected to and responsible for supporting and giving response to their peer students. Experiencing such a situation of being connected to and feeling responsible for other participants involved in the same collaborative art project affords possibilities for students to develop new ways of thinking about, and understanding their own creative processes, via the concern for

others. I argue that, when students have to think about how their actions and artworks will affect other participants, as in a collaborative, participatory artistic project, this provides a learning opportunity which involves mentalization as well as wicked problem solving.

CREATIVE PARTICIPATION

- as in being trusted with the responsibility to contribute to a common work of art and knowledge

I define creative participation as an invitation for all participants to contribute to the common making of art and knowledge, an invitation which respects each individual's competence as unique. I argue that art's interpretability affords for a system where each participant can be regarded and respected as an artist. In this sense, each participant can contribute to the shared production of knowledge, and value for others, in a legitimate way. In the intervention in the campus course, both the graphic design students and the preschool children were respected as artists. Their contribution of sounds and visual images as artworks, were equally valued as my contribution or the game makers contribution to the common participatory art project. This subsequently affected the hierarchy of the learning environment as a system, where the students learning processes became creative processes and the learning environment turned into a creative web of relations.

Students as actors creating value for others

In the distance course intervention, all visual art students contributed to building a shared knowledge base in the virtual art studio platform. In both interventions the students' roles changed from being learners, as in objects in need of being changed, to becoming actors, as in subjects, trusted with responsibility for

others. Students as actors were needed by other participants, as contributors to their artistic learning processes, and students as actors were necessary for the sociotechnical system as a whole, as legitimate contributors to the shared production of art and knowledge. In the distance course, the low threshold of the technology, the simple and familiar interface resembling ordinary social media with a shared timeline, as well as the hands-on introduction workshop to the virtual art studio platform, was important for including all students as creative participants from the start. The simplicity and usability of the interface of the virtual art studio, and the functionality as a shared social networking system, afforded for students to interact and support each other. The supportive interactions between students as actors in the virtual art studio, and the forming of social relations was reinforced by my instructions for how to give response, in a non-judgemental way (page 184-185).

Legitimate contribution to art and knowledge

When I was thinking about, and designing for, the two participatory art interventions in this study, my epistemic point of departure was that I expected all participants to be able to fruitfully contribute to the art projects, with their unique knowledges. Accordingly, in the campus course intervention I expected the students, the teacher, the sound artist, the game maker and the preschool children to contribute with their special knowledges to the various processes of interpretation and transformation of images and sounds, resulting in a video game. Similarly, I expected the teacher and the students in the distance course intervention to contribute with art works, reflections and constructive comments, as knowledge shared in the virtual art studio. In this respect, I view the virtual art studio as a common knowledge base, where the students' processes of making Land art, Street art and Place specific art, became visualized knowledge about creative processes. In the campus course, the system was changed from being a learning environment into

becoming a creative making environment, where students participated not just for the sake of learning, but for real. The graphic design students worked with a real artistic production of a video game for the preschool children, as a real audience. The design students then engaged in the creative process primarily as creators and makers, instead of being just learners. This is due to the fact that art is always for real, as I see it, at least if there is a real audience involved which you aim to produce cultural value for. In the distance course the students engaged in giving artistic response to each others art-works-in-progress, based on their personal competences and life experiences. Following from the fact that the students were trusted with the responsibility to participate to the common production of art and knowledge in a legitimate way, in both cases, the learning environment as a sociotechnical system became less hierarchically organized.

CREATIVE COMPARATIVE ENCOUNTERS

- as in supportive environments free from judgemental evaluation

I define creative comparative encounters as spaces where individuals have the visual opportunity to learn from observing others involved in similar, but not the same creative processes. I argue that the prerequisite for such open learning spaces is freedom from judgemental evaluation. This is due to the fact that the open access to visualized knowledge which creative encounters provide for, depends upon the participants trust in each other and respect for each other as contributors to a common and shared exchange of knowledge. I argue that judgemental, formal evaluation and ranking will undermine creative comparative encounters and bring about another system, a system which is ruled by negative competition. In such a system, participants will become increasingly resistant to openly sharing their knowledge and collaborate, because they are forced into a situation of competing against each other by the

structure of the system. In arts, games, debates, exhibitions, readings, performances and playful contests, people can meet up and challenge each others as peers, aiming to learn something new. Participants in such encounters have the opportunity to observe each other, to get novel ideas, to see new ways of solving problems and to learn new strategies in their field of interest. The learning can take place by observing other participants' actions in an embodied face-to-face interaction, or by observing each others performances on stage, or by following each others processes while working with an art exhibition. If the participants were to be isolated from each other, for example for the purpose of testing and measuring each participant individually, the opportunity for participants to learn by observing visualized knowledge of other participants would be completely removed. In both of the participatory art interventions, students had open visual access to seeing and becoming inspired by each others creative processes. Because students, in neither case, were put in the position of having to compete against each other during the creative process, they could openly share ideas and benefit from taking part in each others problem solving processes.

Visualization and mirroring

In the campus course intervention, the graphic design students created unique visual images which they worked with in relation to the preschool children's sound interpretations. The design students artworks-in-progress were openly visible, while they were working with them in the shared graphic design studio. The students would listen to the preschool children's sounds and look at my original images, trying to figure out how the children had come up with a particular sound interpretation. They would walk around in the classroom, looking at what the other students were doing and having open discussions on issues of design and graphic composition. Art's openness for interpretation afforded for different interpretations to be equally valid, and because of this there was no predisposition solution to the artistic problem, equivalent to a

correct answer in another educational situation. Many of the visual art students in the distance course intervention expressed that the opportunity to see each others artworks-in-progress and to be able to visually follow each others processes in the virtual art studio platform, was important for the progression of their creative processes (page 217). In the distance course, it became apparent that the art students were helped from sharing each others visual processes and they told me that they understood more about their own creative process by being able to see and follow each others creative processes. I comprehend this phenomenon as a kind of creative mirroring, where students had the opportunity to reflect their own creative processes in their peer students similar creative processes. I have referred this open access to visualized knowledge to the situation of a traditional preparatory art school, where all students share the same studio and have visual access to each others creative work-in-progress (page 199). In this respect the situation was similar in both interventions, students had visual access to the whole group's various ways of solving similar problems, something which I refer to as being immersed in the knowledge production of a whole creative community.

Shared storylines

In the distance course intervention, I had organized the storyline of the eight week's course according to a certain rhythm or pacing, where students were asked to upload the documentation of their artworks-in-progress, once a week, as a narration of their creative processes. In the campus course intervention, the storyline departed from the process of collaboration, where one group of participants' work followed from, and was depending upon another group of participants' prior work, which also provided for a kind of pacing. In the distance course, the art students shared the same timeline, as in an ordinary social media platform, but they could choose to visualize their own blog-posts separately, if they wanted to get an overview of their own creative process. In both cases I had designed for a

proposed timeline framework, which was rather loose and open for discussion. In the distance course I had suggested some headings for the art students' to blog about each week, concerning topic such as generating ideas, getting inspiration and choosing a place for their art installations. In the campus course there was an open and interpretable framework for the graphic design students, including a given structure of steps to take, connected to the fact that they were involved in the production of a common artwork. Here, the design students had to relate to the time period of the course, the preschool children's sound interpretations, my original images and the collaborative video game as one of the expected, tangible outcomes of the project. In both interventions the organisation of time, the time linear structure of the collaborative artistic work-in-progress in the campus course, the proposed headings as well as the timeline structure of the online platform in the distance course, facilitated for the students to follow each others creative processes, visually. The organisation of time, the shared storyline of the participatory art projects, helped students stay in phase with each others creative processes. In the case of the distance course, the creative storyline of the distance students as a community was also preserved in the online platform, creating a form of *frozen visualisation* of a time linear communication process, which I think is unique for social media.

CREATIVE NETWORKING

- as in sharing, interacting with and contributing to others art and knowledge processes

I define creative networking as being connected to and collaborating with others, with respect for their integrity. Creative networking requires for all participants to be treated as actors. In a creative network participants support the development of other participants artistic processes and learning. Collaboration within a

creative network can take the form of a common artistic production, but it can also manifest as individuals working separately, side by side with their own projects, but supporting each other in the network, as a community. In the campus course intervention, the graphic design students worked individually with unique visual images, yet, with the shared goal to contribute to a common artwork, a video game for the participating preschool children. The design students connected empathically with the preschool children, as they continued to work with the children's sound interpretations. Interestingly, the students collaborated with, and connected to the preschool children via the digital sound files, which carried recordings of the children's voices. The design students constantly referred to the preschool children, during the presentation of their artworks and creative processes. The students' presentations showed how they had become more reflective and aware of their own process of making art, as they constantly reflected upon how their artworks might be experienced by the preschool children, as receivers of their visual images. In this sense, thinking about the children functioned as a way of reflecting their artworks in the eyes of others, and I have already referred to this, as a process of mentalization (pages 142-143).

Digital sharing

In the campus course intervention, the digital format of the sound files as well as the visual images facilitated for the networking to take place across time and space, something which is unique for digital sharing. In the distance course intervention, this asynchronous digital sharing was even more evident, as the art students would visit the digital platform from anywhere in the country, at whenever time that suited them best. In the virtual art studio intervention, students worked with their individual Land art, Street art and Place specific art projects, narrating the stories of their work in progress in the shared online platform. The creative networking in the virtual art studio intervention, consisted of

students continuously sharing artworks-in-progress, and getting comments, suggestions, technical advice and artistic reflections on those stories. The instructions which I gave to the art students of how to act as *non-critical friends*, seem to have worked as guidelines (pages 184-185). The students communicated about art in a constructive way in the virtual art studio, without criticising each other, something which I have reflected upon as related to the oral tradition of art studio conversations (page 198). When the art students shared their stories of their artistic processes, they provided examples of vicarious experiences, which other students could relate to, reflect their own creative processes in, and learn from (for example, page 185-188). I had basically recommended the students to have a personal entrance when they were commenting others, to relate back to themselves. In this way the student's personal experiences and subjective knowledge became recognized as central for the communication. This could be compared with the importance of shared stories within and about practice, as a means for knowledge exchange in situated learning environments (Lave & Wenger, 2005[1991]).

Becoming a creative community

The visual art students in the distance course intervention, were also stating that they became a community. When I studied how their communication evolved in the virtual art studio platform, during the eight weeks course, I could see examples of this (for example, pages 196-197). By the end of the course, the students communicated in a more emotional and embodied way, sharing their vicarious and physical experiences of struggling with weather and nature, doubts about their audiences, self-criticism and feelings of failure, while getting support and comfort from each others in the creative network as a community (for example, pages 202-210). In both of the two participatory art interventions, value replaced evaluation as a primary taxonomy, and this was not only due to the fact that there was no formal evaluation of the students' artistic processes in the

interventions. In both cases, students were trusted with the responsibility for others, for supporting others learning processes and for producing art and knowledge for other participants and for each other. The sociotechnical system in the interventions changed from being focused on participants as mere learners in need of receiving knowledge, to trusting the participants as actors who were necessary as contributors for the common, production of shared knowledge. In this respect the interventions affected the learning environment as a system, to function more like a situated learning environment (Lave & Wenger, 2005[1991]). I have already argued that I see this as connected to the fact that making art is in a sense, always for real.

CONCLUSION

Researching creativity for sustainable development

In the beginning of this book I introduced my interest of researching creativity in education related to a wish to contribute to an existing global agenda of *rethinking education*, where creativity is regarded as a key competence for future education (EU, 2006; 2012; UNESCO, 2015). Creativity is central for complex problem-solving, and therefore we need to rethink education to facilitate for our future citizens to develop creativity as a competence, to meet our interconnected world's urgent need for sustainable development (Delors, 1996; Morin, 1999). Based on these global demands for supporting creativity as a competence in future education, I proposed that developing knowledge about design for creative learning environments is an important quest for contemporary educational research. The problem however, which I outlined in the beginning of the book, is that, there is not much previous research that can serve as a knowledge foundation for how to design for creative learning environments in higher education, to support students' development of creativity. I traced this empty space in the research field to the fact that many previous studies of creativity have been preoccupied by the idea of the solitary creative genius, which leads to viewing creativity through an individualized lens. I argued that, to gain new knowledge about how to support creativity for future education, we need to study connections between design for creative learning environments and implementation in educational practice, as processes. I proposed that the benefits of studying how social relations and interactions influence students' creative processes to gain new knowledge about design for creative learning environments, is that we can design for such sociorelational affordances in the learning environment. I also promised that I would provide examples of how artistic experimental interventions can serve as a means for testing innovative educational ideas, and to see what works in practice.

RELATIONAL CREATIVITY

Throughout the thesis I have investigated creativity from a sociorelational perspective, with and through participatory artistic practices. In the introduction of this book I presented the background story of how I had first come to think of the notion of *relational creativity*, while working as an artist with participatory art and noticing how there seemed to be a connection between participants' increased creativity and engagement in participatory artistic practices. The aim of the thesis has been to develop theory about relational creativity as a design concept for creative learning environments and the study has been based on my previous research and development work as an artist-in-residence, where I conducted research and development work as an open-ended progressive inquiry. I have written this book with the intention to describe and analyse the process of design and implementation of two participatory art interventions, from a reflective practitioner's perspective, aiming to support the development of a grounded theory about creativity as a design concept for creative learning environments. This quest of constructing theory from my own participatory artistic practice as an artist-in-residence has been divided into two major parts of the book, where the first part covers a contextual investigation of ideas and concepts inherent in my research design and the second part the grounded theory investigation of two participatory art projects.

Part I: Four essays contextualizing the research

In the first part of the book I presented a contextual investigation of important ideas connected to the design of the participatory art interventions, aiming to reveal the ontology and epistemology inherent in my own research design thinking. The contextual investigation was conducted through four essays, where I contemplated upon concepts central to my research process, while drawing a map of my theoretical and methodological knowledge network.

DEFINING RELATIONAL CREATIVITY

In the first essay I asked the question: *What is relational creativity?* with the intention to define the concept of relational creativity through a contextualization within classic creativity theory, only to find out that there was not much previous research covering the topic of creativity from a sociorelational perspective. I looked for signs of relational creativity in previous studies of creativity as a skill or trait, measured with creativity tests, and found out that to verify the test results of a creativity test, the test person's real-life achievements are used as a reference (Eysneck, 1995; Feldman, 1994; Boden 2004 et al.). I learned that, even though creativity as a competence is often verified via creative real-life achievements and social recognition, creativity per se is still regarded as an individual trait or skill, and has not been much studied as a sociorelational phenomenon. I searched for relational creativity in previous studies of creativity as a process, and looked at theories about insight and flow, where creativity is described as a problem-solving process engaging both our conscious and unconscious mind (Wallace, 2014[1929]; May 1994[1975]; Csikszentmihalyi 2008[1990]). Creativity researched as a process was, however, also conceptualized from an individualistic perspective. I realized that, to be able to define and contextualize relational creativity I would have to expand my field of research from classic creativity theory to studies of everyday creativity in social media and creative learning environments where I found examples of research taking on a sociorelational perspective

(Siemens, 2005; Gauntlett, 2011; Lindström, 2006; Adams & Owens, 2016; Hall & Thomson, 2016 et al.). I discussed ideas of internet platforms as frameworks for supporting a creative community of participation (Gauntlett, 2011) with my own notion of relational aspects of new technology in blogging (Morén, 2010; 2012). The study presented in this first essay resulted in a definition of relational creativity as a fluent state of mind, a temporary condition which can emerge both within and in-between individuals who are engaged in creative problem-solving processes, where relational creativity is influenced by the social relations and interactions which these individuals are involved in.

PROBLEMATIZING PARTICIPATORY ART

In the following essay I investigated the concepts of participatory art and participatory design. I asked the question: *Who is in charge of participatory art?* while self-reflecting upon my role as an artist-in-residence and problematizing how the commission to work with participatory art for the purpose of developing novel educational practices, might risk to either delimit the artistic freedom or intrude on participants' rights to contribute in a legitimate way to the production of art as knowledge. I discussed this potential conflict between ethical and aesthetical prerequisites in commissioned relational and participatory artworks, from the perspective of relational aesthetics (Bourriaud, 2002; Bishop, 2004; Kester, 1998 et al.). I reflected upon the idea of the artist in some cases becoming more of a designer, and continued to investigate my own situation as an *artist-as-designer* (Bishop, 2004) from a *sociotechnical perspective* (Trist & Bamforth, 1951) through *participatory design* (Simonsen & Robertson, 2012) and *design for learning* (Wenger, 1998). I came to the conclusion, and proposed that combining ideas and concepts from participatory art with participatory design could be beneficial when working with arts-based research and development work in educational practice.

FINDING METHODOLOGIES TO SUPPORT NOVEL THINKING

In the essays of chapter three and four I investigated methodologies to support innovative arts-based research and development work in education. In chapter three's essay, I asked the question: *How can we design research to support novel thinking in education?* with the intention to search for social scientific methodologies that would get along with and support research with participatory artistic practices. In this essay I investigated the idea of research as a *progressive inquiry*, formulated in early pragmatism by Mead (2002[1956]) and Dewey (1982[1938]). I found that, in a progressive inquiry the goal or the problem can not be properly determined in advance, and that is why a progressive determination of the problem is necessary, to get the research going. I compared the conception of research as a progressive inquiry deriving from early pragmatism with similar formulations of the research process in art and design, where the research process was described as *imagining that which does not yet exist* and generating that *which we do not yet know* (Borgorff, 2014; Nelson & Stolterman, 2003). Through this methodological investigation, I also understood that what I have been trying to deal with through the progressive inquiry of developing grounded theory with participatory artistic practices, was wicked problem-solving processes (Rittel, (2010 [1972]) and complex researched situations which could not be clearly defined in advance.

In chapter four's essay I investigated the progressive inquiry as a logical-creative process, and searched for methods and procedures which could support conscious as well as unconscious creative problem-solving processes in arts-based research and development work. I asked the question: *How can theory be constructed out of practice?* and contemplated upon possible ways of extracting *tacit knowledge* (Polanyi, 1983[1966]) from my own practice as an artist-in-residence. I found that reflecting-in-action (Schön, 1983) could facilitate for a practitioner to construct new theory, deriving from a unique situation in practice, independent of already established theory, because reflection-in-action does not have pre-defined

means and ends, but affords for an open-ended research process. I realized, however, that the problem with practical knowledge as in reflection-in-action, is that it is tacit and implicit and therefore often overseen, as if it was invisible, because it is not clearly expressed in textual representation. In this essay, I also investigated reflective practice from a *situated knowledges* perspective (Haraway, 1988) and found a strategy for obtaining partial objective knowledge, through conscious self-reflection on my own situatedness and research design and by taking ethical responsibility for how I envision and visualize my research. In this essay I also discussed the metaphor of the actor network (Latour, 2006) as a possible way to follow and visualize relations and interactions between participants, artefacts and technology from a sociotechnical perspective in complex situations like creative learning environments. Finally, I looked at methods and procedures of *grounded theory* (Glaser & Strauss, 1967; Charmaz, 2006) and found that constant comparative analysis, memo-writing and theoretical sampling could support the research process as a creative problem-solving process which is partly conscious and partly unconscious, because these procedures visualize the researcher's otherwise internalized process. The interdisciplinary investigations performed in the four essays, where I compared various theories, methodologies and practices, influential on my design ideas, have served as a way for me to critically reflect upon my *research apparatus* (Barad, 2003) with the ambition to obtain partial objectivity.

Part II: Theoretical development grounded in practice

In the second part of the book I introduced the empirical foundation for constructing grounded theory about relational creativity as a design concept for creative learning environments. In chapters five and six I presented the design and implementation of two participatory art interventions as rich, descriptive and visualized storylines. In these chapters I have combined *reflective practice* (Schön, 1983), *constant comparative analysis* (Charmaz, 2006 et al.) with *actor network theory* (Latour, 2006) to capture, map out and make sense of what happened between various actors in the learning environment as a sociotechnical system. Each of the two empirical chapters were concluded with an analysis, where I visualized how the participatory art interventions affected the participating students' interactions and relations and how this subsequently influenced students' experiences and understandings of their creative processes, to study creativity from a sociorelational perspective. I also discussed how the participatory art interventions affected the learning environment as a sociotechnical system, aiming to investigate the connection between participatory art and design for relational creativity.

THE INTERVENTION IN A CAMPUS COURSE

The first intervention, in a campus course, was a collaboration between music and visual arts. The intervention involved graphic design students and their teacher, a sound artist and his preschool teacher students in a music course, preschool children from four local preschools and their teachers, and a game maker. I had designed visual images which the preschool children artistically interpreted into sounds, and which were then transformed by the graphic design students into new images, according to the preschool children's diverse sound interpretations. I had deliberately designed the visual images to balance between realism and abstraction, so that the images would be open for artistic interpretation and *emergence* (Seevinck, 2018) yet appear as familiar, to make the preschool children feel secure enough to start

exploring sound-making (see pages 117-122 and 125). In this art project, all participants were collaboratively engaged in the production of a common participatory art work, a video game especially made for the participating preschool children. The participatory art project was finalized with a revisit to the preschools, so that the participatory children could try out the video game. The video game was not designed for competition but for collaboration, where the whole group of children would become engaged in helping each other solve the problem of the game (see page 144).

CONCLUSION OF THE CAMPUS COURSE INTERVENTION

In the analysis of the campus course intervention (pages 153-156) I could see that the participatory art interventions engaged the students in a production of art, where their focus shifted from learning a software and being evaluated on that, to being responsible for and concerned with producing cultural value for the preschool children. I argued that making art is in a sense, never just for practice, but always for real. When students were engaged in creating cultural value for others, their learning processes became creative processes. This shifted the students attention from being evaluated on learning, to being responsible for how the preschool children would experience their visual images in relation to the children's sound interpretations. I argued that this shift in focus from being evaluated to being trusted with the responsibility for producing value *for others*, in some respect changed the taxonomy of the system. The students formed empathic relations to the preschool children while working with the digital sound files where the children's voices were represented. In some respect the students were collaborating with the children, even though the children were not physically present in the classroom. The students constantly referred to the children while trying to understand their sound interpretations, and by imagining how the children were seeing the world, how the children were experiencing things and how they were thinking. I argued that when the students worked with the children in mind, this could be referred to as an act of *mentalization*

(Fonagy, 2001). In the analysis I could also see how my visual images as an actor opened up space for a new way of learning, via digital sharing and collaboration. The students could continue to work directly on my shared digital files and get a quick start for making their own art works, while the software became a less dominant actor, as learning the software became an integrated part of the students' creative processes of making art. The participatory art intervention affected the learning environment as a system, from being focused on students as objects in need of learning a software, to become a creative space, where students became actors, who were needed as contributors in a collaborative creative process. I argued that the system became a web of relations, where all participants depended on other participants, which gave the system a less hierarchical, and more relational networking structure.

THE INTERVENTION IN A DISTANCE COURSE

The second intervention in a distance course, was based on an online platform, *the virtual art studio* which I had designed for students, who lived all over the country, to stay connected with each other in-between the campus meetings. The intervention involved the students in a distance course of visual arts and their teacher. I had deliberately designed the virtual art studio to resemble a common social media platform, to keep the technical threshold low and make it easy for the students to start communicate with each other (see page 179). The virtual art studio was based on *WordPress*, an open source blogging tool, and was inspired by my own experiences of blogging as networking and of peer-to-peer support in social media (Morén, 2012). In this intervention, all students shared the same timeline of the virtual art studio platform. During a period of eight weeks, the students regularly uploaded images, texts and video documentations of their on-going processes of making Land art, Street art and Place specific art. The virtual art studio worked as a digital portfolio, or a real-life art studio, which was shared by and open to the students but publicly closed for others. The teacher and I had access to the virtual art studio but we

had promised the students that there would be no formal evaluation of the blog posts or comments that they had uploaded there, because the students had argued that they would feel more free to share their processes if they knew that they were not going to be evaluated (see page 169). The students were expected to give response to each other's artworks-in-progress and I had given them instructions of how to act while giving the response. When I reflected-on-action upon my instructions, I could see that I had provided the students with a set of rules that practically forbid any kind of criticism and judgemental evaluation (see page 185 and 217-219). The students had asked me, during the introductory workshop how they should then act, while giving the response and I had answered that they should foremost be encouraging but not praise the other student's work without arguing for what in the artwork that was worth praising. I had suggested that they could for example, share personal associations they got from the work; or share references to other artists', filmmakers' or writers' work that they came to think of in relation to the artwork they were commenting; or share their own ideas of alternative ways of continuing to work; or suggest practical solutions concerning material and techniques.

CONCLUSION OF THE DISTANCE COURSE INTERVENTION

In the analysis of the distance course intervention (pages 214-220) I could see that the visual art students had really engaged in practicing my social instructions of how to act supportive and responsive but not critical, while commenting on each other's blog posts about their artworks-in-progress. Because I like to play with sayings, I thought of this as the students becoming *non-critical friends*. As I coded and composed the blog posts according to a time linear narrative, I could also see how the students developed their way of conversing about art and giving response to each other, where they avoided criticism and invented other constructive communicative solutions. For the visual art students in the distance course, the affordance that the virtual art studio provided for them to see the art works-in-progress that the other students were

working with was in many ways crucial for the progression of their own creative processes. The experience of how beneficial it was to visually be able to share each other's creative processes was expressed by the students in conversations and in their written comments about the project. Because the students were expected to comment on each other's visual documentation in the blog posts, a mutual exchange of seeing and being seen by others occurred. I think of this as a process of double mirroring, where students not only self-reflected and reflected upon others, but became entangled in a process of meta-reflection on the creative process per se. I related this phenomenon back to the learning environment of a shared art studio in a preparatory art school, where students have open access to each other's similar, yet not the same problem-solving processes (discussed in pages 199 and 219), a situation which I consider as important for relational creativity. The students expressed that they experienced a sense of belonging and becoming a community in the virtual art studio. I understood what they meant while I was coding the blog posts chronologically and could see how the presence and quality of their communication developed over time during the eight course weeks. I could see that the students who did not really knew what they were going to do, became inspired by other students' shared reflections about their artworks-in-progress. Some of the stories students shared about how they had approached their creative processes to get going, became important as vivid examples for other students (examples on pages 186-188 and 190-191). The students becoming a creative community was facilitated by the sociotechnical design, where students were trusted with the responsibility to support each other. The digital platform facilitated for this alternative structure to emerge. The learning environment as a system changed from placing the students in the role of being learners, to seeing them as actors expected to make art as knowledge and contribute to a shared knowledge base. In this sense, the students could also be thought of as becoming a community of practice (Lave & Wenger, (2005[1991])).

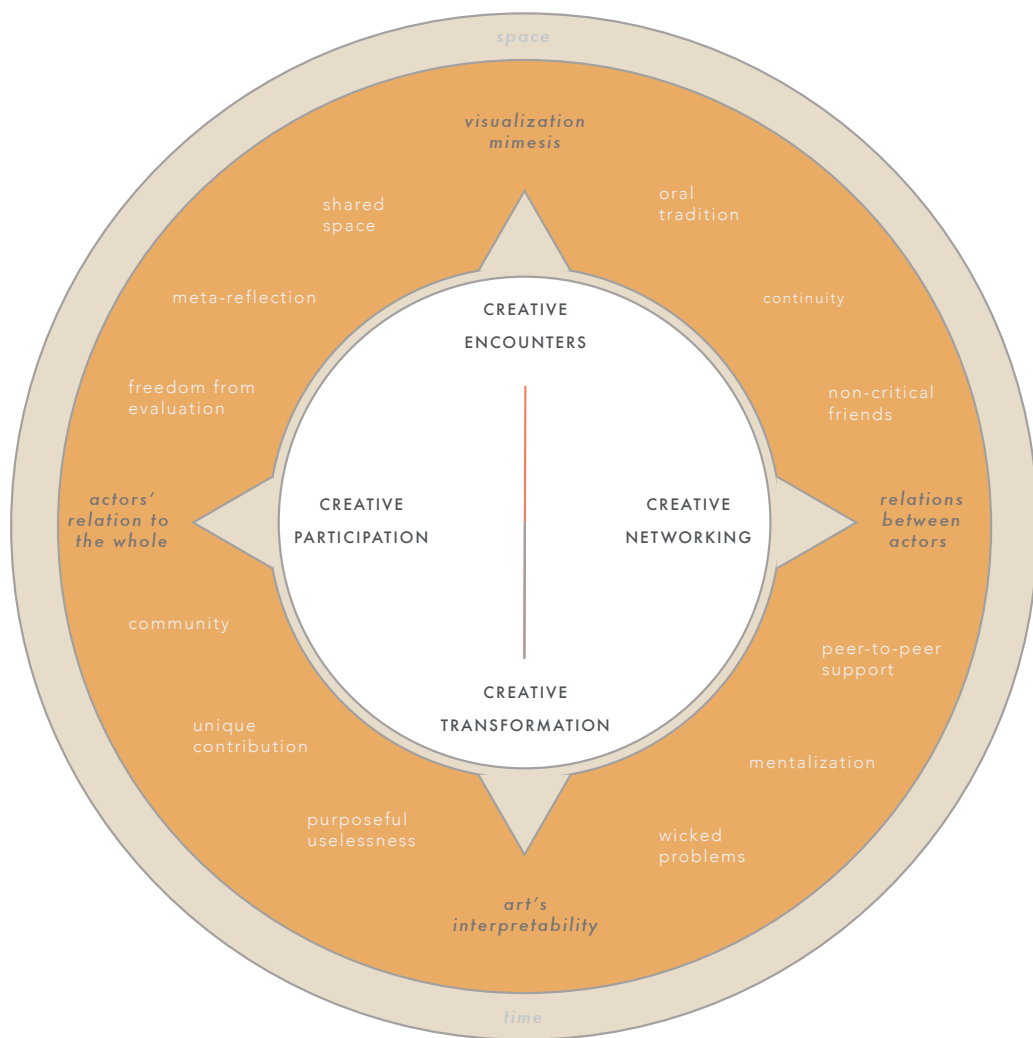


Figure 8.1. Navigation tool for relational creativity

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THE FOUR DESIGN CONCEPTS

In the final chapter, I presented four design concepts to outline the first version of a grounded theory about relational creativity as a design concept for creative learning environments. I reconnected these design concepts back to vivid examples emerging from the analyses of the two participatory art interventions. The four concepts were: *design for creative transformation* - as in taking advantage of art's openness for interpretation and emergence of unexpected new solutions; *design for creative participation* - as in trusting the participants with the responsibility of contributing to a common work of art and knowledge; *design for creative comparative encounters* - as in providing participants with supportive environments free from judgemental evaluation; and *design for creative networking* - as in facilitating for participants to share, interact with and contribute to each other's making art and knowledge processes.

CREATIVE TRANSFORMATION

In the theoretical model-in-progress (figure 8.1) the design concept of *creative transformation* is placed in the South, in close relation to the key concept of art's interpretability. I have defined *creative transformation* as design for affordances for participants to transform information, according to their own unique interpretation of the meaning of that information. I argue that fine art by tradition affords for creative interpretation and transformation of information and meaning, and that this prerequisite serve as the foundation for emergence of unexpected new solutions. This design concept was grounded in: art's openness for interpretation, where there is no right or wrong solution to an artistic problem and various interpretations are allowed to exist simultaneously; which encouraged students to mentalize, as in thinking about how others' may think and see the world differently; that an artistic problem can not be clearly defined in advance and the definition of the problem must take place in parallel with the problem-solving process, which

provided opportunities for students to learn how to deal with wicked problems.

CREATIVE PARTICIPATION

The design concept of *creative participation* in the model is placed in the West, and I see this concept primarily connected to thinking about the individual actor's relation to the whole. I have defined *creative participation* as a design which invites all participants to contribute to the common making of art and knowledge, an invitation which respects each individual's competence as unique. I argue that art's interpretability affords for a system where each participant can be regarded and respected as an artist, who is expected to contribute to the shared production of knowledge and value for others, in a legitimate way. This design concept was grounded in: students roles changed from being learners in need of learning, to becoming actors creating cultural value for others; and in this respect trusted with responsibility as contributors to a shared production of art and knowledge; which influenced the learning environment into becoming a creative making space, where students participated not just for the sake of learning, but for real; and the learning environment then became less hierarchical, because participants were trusted as legitimate co-producers of art and knowledge.

CREATIVE COMPARATIVE ENCOUNTERS

The design concept of *creative comparative encounters* is placed in the North, in close relation to visualization and *mimesis* (which means to imitate with an openness for artistic interpretation). I have defined *creative comparative encounters* as design of spaces which provides participants with the opportunity to visually learn from each other. The sociotechnical design for creative encounters affords for participants to compare to learn, rather than to compare to compete. Participants learn by observing others involved in similar creative processes. I argue that the prerequisite for design of such open learning spaces is freedom from judgemental evaluation. I

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argue that formal, judgemental evaluation and ranking undermine design for creative comparative encounters by bringing about another system ruled by negative competition. This is due to the fact that the open access to visualized knowledge which creative encounters provide for, depends upon the participants trust in each other and respect for each other as contributors to a common and shared exchange of knowledges. This design concept was grounded in: students expressions that their creative processes became more even and continuous when they had open access to seeing and following each other's creative processes; and that not being formally evaluated facilitated for this; the organisation of students creative processes in a shared storyline helped students to continuously engage in discussions about their artworks-in-progress; the effect of double mirroring as in both seeing, reflecting upon and commenting other students' artworks-in-progress; where getting comments back on their own work enhanced the opportunities of meta-reflection and promoted students' increased understanding of a creative process per se.

CREATIVE NETWORKING

The design concept of *creative networking* is placed in the East in the model, and I see this concept primarily connected to design thinking about relations between actors. I have defined *creative networking* as design that facilitates for participants to connect and collaborate with others, yet, with respect for each other's integrity. In this respect design for creative networking requires for all participants to be treated as actors. I argue that a creative network should be designed for participants to support the development of other participants artistic and learning processes. Participants in a creative network could be collaborators in a common artistic production, but they could also work individually, side by side, with their own art projects and still support each other as a networking community of practice. This design concept was grounded in: students supporting each other's creative processes and becoming non-critical friends; students sharing and learning from each other's

stories about ups and downs in their creative processes; students engaging empathically with each other and with other groups of participants, such as the preschool children, while interacting and collaborating. The learning environment as a system became a web of relations, where all participants depended on each other's contribution to the whole.

Design for relational creativity

The development of theory about relational creativity as a design concept for creative learning environments has been founded in a wish of mine to contribute to a global agenda of *rethinking education*, for sustainable development, where creativity is regarded as a key competence among future citizens, (EU, 2006; 2012; UNESCO, 2015). My intention with constructing grounded theory supported by practice-based design concepts has been to bridge the distance between theory and practice. The ambition has been to make a simple and usable contribution of new knowledge about design for relational creativity in higher education. The approach of presenting theory along with rich examples, reconnecting to the situated practice, as in the empirical investigations presented and analysed in chapters five, six and seven, intend to make the theory usable for practitioners as well as for the research community. To further research, test and develop the theory, one possible way would be to compare, explore and contextualize the emergent theory of relational creativity as a design concept for creative learning environments in relation to other theories, which seem to be related to my findings. I have already mentioned how some of my findings could be compared and contextualized with previous theories, for example students' being trusted with the responsibility to contribute with art and knowledge in a *legitimate* way with Lave & Wenger's (2005[1991]) theory of *situated learning*. The finding of how art's interpretability influenced students' way of thinking about how other's see the world, as in *mentalizing* (Fonagy et al., 2002) is another example of an issue which could be further explored, theoretically. Theories and design concepts can be interpreted from different epistemic worldviews, something which may result in quite contrasting implementations and outcomes, deriving from a seemingly similar conceptual starting point. This makes it hard for me to make claims about general prescriptions of how to design for relational creativity in higher education. In this respect I agree with Lave & Wenger (1991), when they argue that so-called general knowledge only has power in specific circumstances, and that

general knowledge needs to be applied and adapted, through a process where its past meaning is renegotiated to the present specific situation to become meaningful and useful for practitioners. It is possible to think about creativity and to design for creativity in different ways, and as I see it, even minor differences in the way we think about, and design for creative learning environments, are based on our expectations of how the world functions, which from a cognitive science perspective could be referred to as internalized mental models or *metaphors we live by* (Lakoff and Johnson (2003[1980])). I can see rich possibilities to learn from the various different ways that other practitioners think about, and design for creative learning environments, especially from the perspective of testing and further developing my emergent theory about relational creativity presented in this thesis. Another possible way of further researching, testing and developing the theory would then be to investigate my design concepts compared with other artists, designers and researchers' practice-based projects. I would then conduct comparative studies of their design and implementation of similar participatory artistic projects and design for creative learning environments, through reflective practitioner's dialogues and ethnographic studies of their practice. When we engage in reflective practitioners' dialogues and share our situated stories, we expose the way we think about practice. The way we expect the world to function may then become visible, through our stories, where our knowledges will sometimes appear to be of a more general character, yet, in some respect our knowledges will always remain situated in our individual stories.

CONCLUSION

ACKNOWLEDGEMENTS

The research and development work presented in this book has been an open-ended, explorative process going on for almost a decade. During this time, many people have engaged in my research process in various ways, by participating and testing, evaluating and further developing the design of the participatory art projects, sharing their theoretical and tacit knowledge or helping me out with technology and design. In this sense I could say that, during the whole process I have been entangled in a web of relations with people, artefacts, ideas and technology, influencing the findings and ideas presented in this book. First of all I would like to thank all participants in the participatory art projects: the graphic design students and their teacher, the sound artist and his teacher students, the preschool children and their teachers, and the game maker, all in the campus course intervention; the visual art students and their teacher in the distance course intervention; your engaged, enthusiastic, creative participation made this research and development project possible! I would also like to thank my main supervisor Simon Lindgren for patiently accepting and guiding an open-ended, explorative writing process for five years; and my assistant supervisor Thomas von Wachenfeldt for cheerfully joining in during my final two years of writing. The doctoral thesis has been formally evaluated in two seminars, a final green reading session, and an act of public defence. These events have engaged a number of experienced academic scholars, who have all read and commented on versions of my manuscript-in-progress: Nafsika Alexiadou, Anna Croon, Fernando Hernandez-Hernandez, Camilla Hällgren, Mira Kallio-Tavin, Johan Lithner, Rita Irwin, and Hans Örtengren. I would like to thank you for helping me to see my work from an academic reader's perspective, so that I could eventually realize the significance of guiding the reader through the academic text; in contrast to the way of making fine arts, where I have mainly been concerned with leaving space open for the audience to interpret the work and to draw their own conclusions.

I introduced this thanks-giving act by saying that I have been entangled in a web of relations with people, artefacts, ideas and technology influencing the findings and ideas presented in this book. In practice, I have asked other artists and researchers to share their knowledge and discuss their ideas in reflective practitioner's dialogues about issues emerging as central for my research-in-progress. I therefore also owe my gratitude to: Tiago Assis, Dennis Atkinson, Annika Olofsdotter Bergström, Rodney Berry, Andrew Bluff, Christina Casanova, Andrea Cotino, Teresa Torres Eca, Rachel Fendler, Juan Camilio Gonzales Jimenez, Mattias Gunnarsson, Fredrik Gunve, Anette Göthlund, Vigdis Jacobsdottir, Andrew Johnston, Asthildur Jonsdottir, Andreas Lund, Katti Lundh, Micael Norberg, Randall Packer, Roxane Permar, Jennifer Seevinck, George Siemens, Silvia Simoes, Hulda Stefansdottir, Stina Westerlund and Fredrik Wretman. I would like to thank all of you for contributing to my increased understanding of the complex interdisciplinary field of research and design for creativity in higher education. I would also like to thank Timo Jokela for inviting me to join the network for Arctic sustainable arts and design; and Heila Lotz-Sisitka for inviting me as a guest at a seminar arranged by the Transformative learning network. This research and development work have involved academic writing as well as digital design, and I am grateful to my mother for proof reading and at an early stage of my writing process helping me realize that I needed to work on the user-friendliness of the text; and last but not least, I want to thank my son Ivan for sharing his insights in the logic of computation and for providing technical support, aiming to help me solve problems myself.

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