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Participation in hybrid sketching

Abstract
In the age of digitalisation, the role of the sketch has taken new forms, but it still works as a mediator between people who work to create something together. There is, however, a lack of knowledge about how the sketch can be used as a strategy to increase participation and collaboration in creative processes. Participation in various types of sketching was explored through a case study with a participatory design approach in a public art project for a health centre. The study demonstrated how hybrid materialisations of a sketch have value as a communicative medium. Essential concepts emerged from collaborative learning in fieldwork that created shared understanding based on drawing experiments. The concepts contribute to a typology of hybrid sketches used as creativity skills in the expanded field of art.

Keywords: Collaborative learning, participatory design, artistic research, drawing in the expanded field, management of creative processes

Sketching in the digital age
In the digital age sketches are still an important tool for showing ideas for coordination, cooperation and collaboration (Lahti, Seitamaa-Hakkarainen, & Hakkarainen, 2004). As a part of skills in drawing, the sketch has been an important tool for those who create visual environments. A sketch can be done quickly and can show an idea easily as a visual represent-ation of thoughts. Architects, artists and designers use the sketch to clarify their ideas. Digitisation has opened new possibilities for the sketch, and research has demonstrated how, for example, the tablet PC to a strong degree supports students' sketching capability by increasing their confidence and that this can have a good impact on the conceptualisation phase in creative processes (Evans & Aldoy, 2016). However, there are also some disadvantages of sketches. They can lead to misunderstandings and mislead people to believe that they have a common understanding when in actuality they do not, and this might lead to conflicts (Donovan, Heinemann, Matthews, & Buur, 2011). In this study I will investigate both the potentials and the pitfalls in the materialisation of sketches, from idea to realisation, and the challenges that may arise in the encounter between the digital and the material in a collaboration context.

Creativity skills
In the age of digitisation and with new evolving technologies, there is a need to study the dynamics between new technology and physical surroundings. For artists and designers in an artistic research context (Varto, 2009) there is a particular need to highlight this because artist- and design researchers should position themselves as central contributors to creative processes in society. The reason for this is that creativity in teamwork is claimed to be some of the most essential 21st-century skills (Kerr & Lloyd, 2008) and relevant in the management of collaborative, creative processes (Adler, 2011; Ibbotson & Darsø, 2008). Artists today in general work in an expanded field of artistic practice (Krauss, 1979), including relational art (Bourriaud, 2002). In this study, the relationship between the sketch and materialisation was explored from an insider perspective as a participant researcher and artist, with particular

emphasis on the issues that arise between the digital and the material in a collaboration context. This is essential in several disciplines where drawing is central, such as in architecture (Oritsland & Buur, 2003), engineering (Lawson, 2006), art and design (Garner, 2008). Although this has been investigated to some extent, there is still a lack of knowledge about collaborative participation with an artistic practice-based research approach. Juha Varto is an art philosopher who claims that perspectives from all professions are important in research and science and that artistic perspectives can be included in this through artistic research, an approach that includes reflections on the view of man, the view of the world, ideology, standardisation, imprinting and self-identification in research (Varto, 2009, p. 143). Through artistic research, as a practitioner and researcher, artists can put current issues on the research agenda and contribute to new theory in the field in new and unique ways.
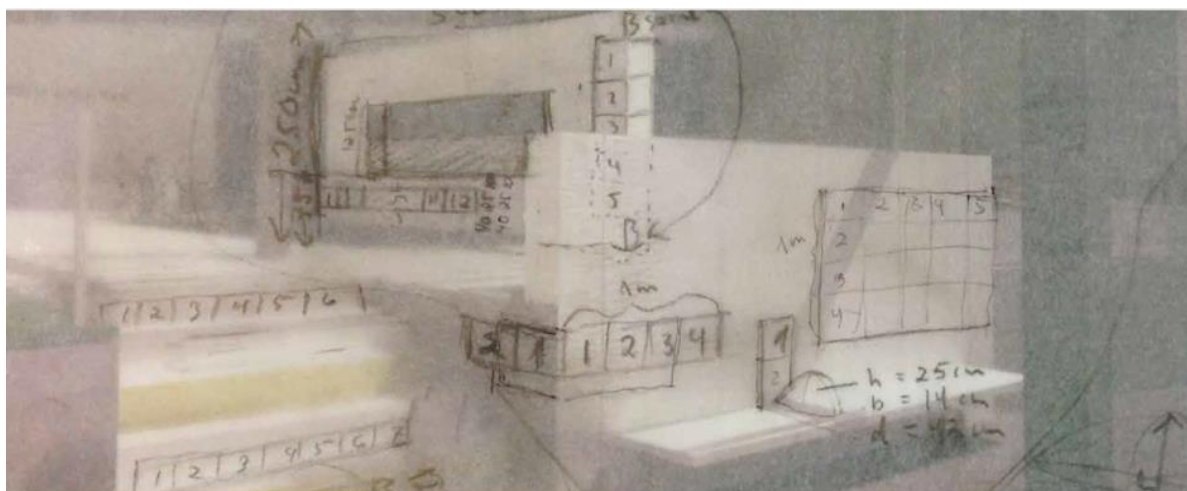
Figur 1. Sketch from a participatory design process for public art in a health centre garden, including people from health, politics, engineering, art and landscape architecture.

The research question in this study is thus *How can different types of sketching contribute to collaboration in creative processes in a public art process?* The reason why this research question was chosen was because it has transfer value to other contexts and to several disciplines, such as architecture, design, engineering, pedagogy and creativity management – knowledge that can contribute to a more interdisciplinary understanding in collaborative processes – and this can help to deepen the understanding of what a sketch can be by expanding the typology of what it can be to draw a sketch in a collaborative process where the methodical approach is to identify new concepts (Maxwell, 2005, p. 46) that emerge from practice (Robinson, 1993, p. 24). Robinson promoted an approach where categories of meaning were identified with a focus on what the problem was and how the social relations of the inquiry were. She promotes a critical reflection that includes disclosure, public testing and facilitation. These criteria influenced the choice of empirical data.

The method used was case study because it provided the opportunity to study the research question in a real-world, complex setting marked by overlapping phenomena and indistinct borders (Yin, 2009, p. 18). This is an advantage in qualitative research because it allows thick descriptions and detailed and specific examples of a phenomenon emerging from fieldwork in practice. Participatory design was used as a method for making it possible to document challenging or conflicting views in the development of concepts in a collaborative and creative process (Buur & Larsen, 2010, p. 122) that included qualitative approaches inspired from improvisational theatre (Buur & Larsen, 2010, p. 136). By documenting the

understanding of participants in the process, the goal was to indicate which conflicting issues that emerged in relation to collaboration where the hybrid sketch was central to the development of the project. This methodical approach was, in addition to the previously mentioned background, based on the importance of understanding and fore-understanding, as described in Gadamer's philosophical reflections on shared understanding, where the aim is to reach a 'fusion of horizons; where the old and new are always combining into something of living value, without either being explicitly foregrounded from the other' (Gadamer, 2004, p. 317). The practical context chosen was the realisation of a health building where public art should be developed. The focus in the selection of empirical data material was further based on situations where design thinking, such as in participatory design (Buur & Larsen, 2010, p. 122), emerging from hybrid sketches could help to solve the problem through dialogues. These were situations of conflicts that could be seen as ill-structured problems (Robinson, 1993), where creativity and unique solutions were needed. This is also relevant from a perspective of creativity management because to respond to the challenges and yearnings of the 21st century demands anticipatory creativity (Adler, 2011, p. 208). Concept mapping was used to analyse the most prevalent phenomena in relation to the research question and the related theory and thus to map the concepts that occurred in categories of meaning (Maxwell, 2005, p. 46). Such a visualised model was made because it could be relevant for pedagogical matters or in the management of creative processes.

Expanding art practice with new theory
The case study method is based on the approach that a theoretical framework can be constructed initially and elaborated and explored through empirical investigations in relation to theory as a chain of evidence (Yin, 2009, p. 42). Certain concepts were chosen in this context related to relevant theories that can help to expand the concept of artistic research through a singular artistic event (Varto, 2009, p. 16). Ways of thinking about art can change art practice. A good example of this is the theory about sculpture in the expanded field (Figure 2), where the sculpture concept was expanded towards landscape and architecture (Krauss, 1979, p. 38). Krauss referred to sculpture as being in an expanded field, and she constructed a visualisation of the concepts (Figure 2) where she explained the relationships of the figure the following way (Krauss, 1979, p. 38):

> The dimensions of this structure may be analyzed as follows: 1) there are two relationships of pure contradiction which are termed *axes* (and further differentiated into the *complex axis* and the *neuter axis*) and are designated by the solid arrows (see diagram); 2) there are two relationships of contradiction, expressed as involution, which are called *schemas* and are designated by the double arrows; and 3) there are two relationships of implication which art. called *deixes* and are designated by the broken arrows.

This theory has had a strong impact of the understanding of what sculpture is and what sculptural practice can be, moving from objects to landscape interventions. This thinking has also had an impact on artistic practice and artistic thinking in general.

Krauss exemplified the expanded field of sculpture with both traditional and contemporary examples Some traditional examples were described as follows: ''Labyrinths and mazes are both landscape and architecture; Japanese gardens are both landscape and architecture; the ritual playing fields and processionals of ancient civilizations were all in this sense the unquestioned occupants of the complex' (Krauss, 1979, p. 38). Contemporary examples were landscape interventions from artists such as Robert Smithson, Alice Aycock and Mary Miss. The concept of sculpture in the expanded field has transfer value to other fields. Among other things, studies have been made about fashion in the expanded field (Torres, 2017). In the same way, there was transfer value in this project, where the aim was to see drawing and

specifically the sketch in an expanded field by exploring how the sketch can be included in many different contexts, with a particular focus on the interface between the digital and the material in a collaborative process. There has been a focus on identifying dilemmas and conflicts that may arise in this field because it has transfer value to practice for practitioners; this way they can learn from experience and can pay special attention to possible pitfalls (Robinson, 1993). There will also be focus on new opportunities or potentials arising in this field to help others who work in the field to be especially alert to learn from unique situations and thus to become a reflective practitioner (Schön, 1983). Furthermore, the study touches upon learning theory on the activation of 'scaffolding', which enables people's ability to learn on their own to understand more, touching on what the psychologist Lev Vygotsky calls 'the zone of proximal development' (Vygotskij, John-Steiner, & Cole, 1980). It is exemplified here by showing how the sketch can be a scaffolding for learning and understanding, where the sketch is a medium that helps to create a deeper understanding for different participants in a creative process and how this can contribute to – or prevent – a good interaction between several actors. The participants in this study were one user representative, one architect, two landscape architects, several building engineers from the entrepreneurial side, two artists, two leaders from the city council administration, two engineers from the city planning administration and one art consultant. In the end the users of the art would be both patients, the staff and the visitors to the health centre. The project can be seen from an artistic theoretical perspective through relational aesthetics, unfolding interpersonal relations in an artistic ecosophic practice (Bourriaud, 2002, p. 101). The artistic process started before anything was built and lasted two years – until the new hospital opened. Sketches were therefore essential in this process.
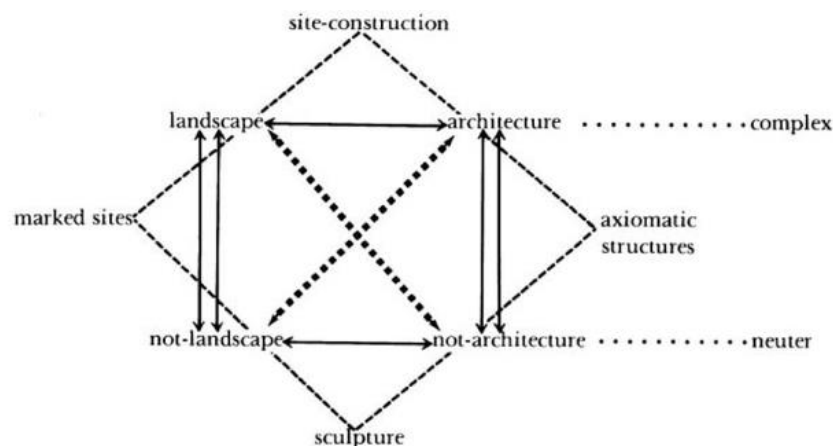

Figure 2. Sculpture in the expanded field, where the sculpture concept was expanded towards landscape and architecture (Krauss, 1979, p. 38).

The lead topic in this study will be to see an artwork evolve from sketch to exhibit. This single example and the process that is documented may have transfer value to other settings because the problem is based on general theories within the field (Bourriaud, 2002; Buur & Larsen, 2010; Krauss, 1979; Schön, 1983; Torres, 2017; Varto, 2009; Vygotskij et al., 1980). The following chronological presentation is chosen because in case study method it is recommended to present the empirical data in a manner that is communicative, and preferably as a coherent narrative and as a meaningful, evidence-based story in relation to the research question (Yin, 2009, p. 131).

Case study of sketches in a public art project

The presentation of the following empirical data is categorised in relation to the chronological process where essential, relevant topics were identified along the way. The political leaders of the town had an aim to transform an older hospital into a new health centre. The management of the building process wanted to have public art in the surroundings of the hospital. Two artists and two landscape architects were first invited to a meeting where the issue was presented. The task was to create public art in a park for the health centre. It was to have an urban feel and be designed as a square or outdoor meeting place where the patients would like to go or relatives would bring their family members. It was also to be a place where passers-by would like to enter. Although this was not a conflict, the situation was an ill-structured problem (Robinson, 1993) in the sense that the solution was still quite open ended, and we who were participants were challenged both to find a solution and to find the relevant partner among each other. The solution of pairing was mostly related to geography, where those who lived near each other could easily meet face to face, which all saw as a good thing.
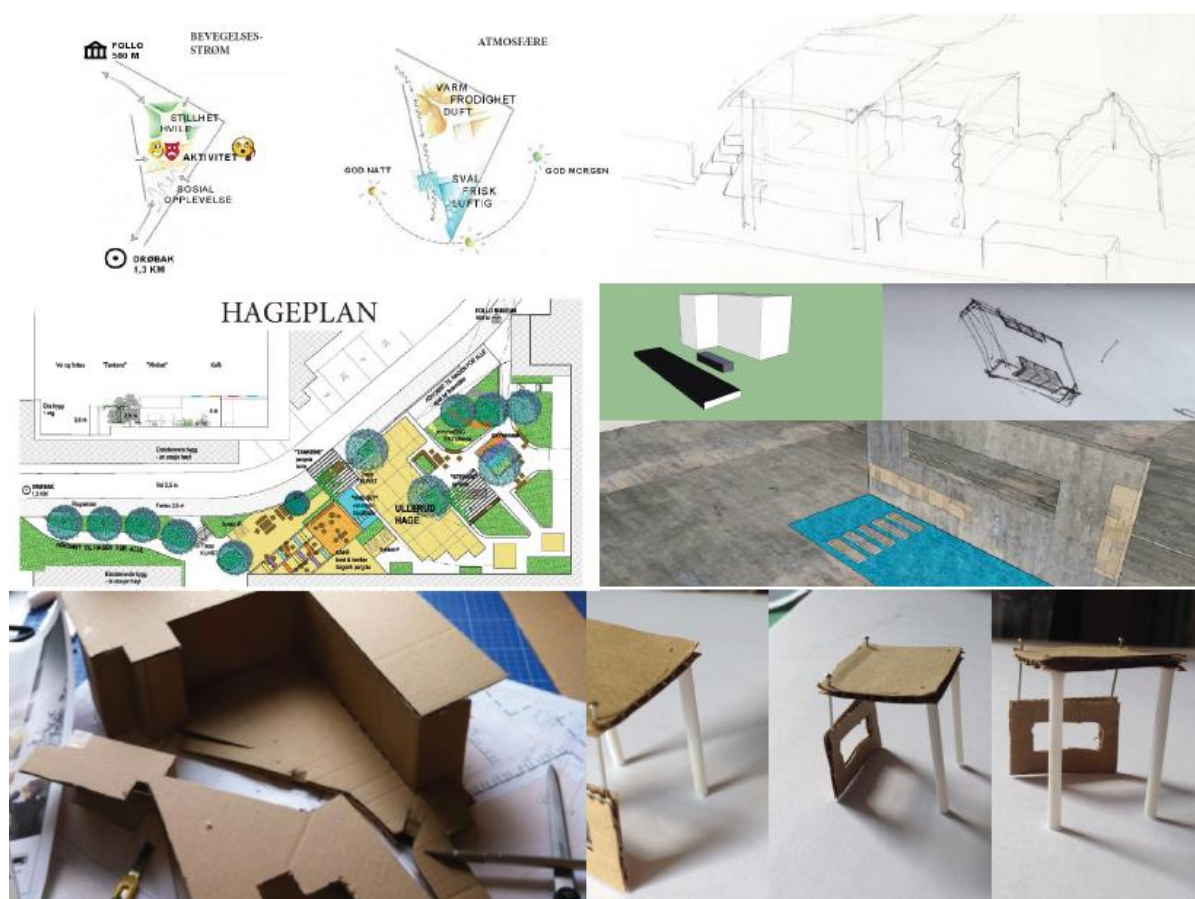

Figure 3. Sketches, top: concept sketches, sketches of ideas on paper. Middle: Garden plan, digital drawings with SketchUp and with pencil. Bottom: Cardboard mock-ups (Photos: Wendelborg and Berg).

Open-ended sketches

In this project, the first ideas were conceived through ambiguous conversations (Buur & Larsen, 2010, p. 122) about landscape architecture and art, with a flow of diverging ideas which were eventually drawn on paper (Figure 3). We had talked about various ideas for some time concerning how the art should be an exciting and distinctive feature in the hospital area, which could contribute to giving the health centre its new identity. The goal was to create a fusion of

art, garden and social life. The art could have motifs related to the four seasons as a remembrance of time passing and the stages of life.

These ideas were after some days developed during a lunch where we had also brought paper to record concepts that could occur during our brainstorming of ideas. Pencil and paper enabled us to materialise some ideas, where we could respond and point to different grades or say 'draw a little more on this or that' as a way of reflection in action (Schön, 1983). Then we could also switch in regard to who should do the drawing or make changes on each other's proposals. Some of these first ideas I later developed in the basic drawing program SketchUp, with simple, basic cubic forms, as we thought there should be vertical and horizontal lines in dialogue with the building's lines (Figure 3). In the SketchUp program it was also possible to implement surfaces so that it became more realistic, but this could also be misleading as we still did not know the chosen surfaces. However, both the sketches made with pencil and with SketchUp were made in a very simple way, characterised by play and simple solutions, where the concept was the essential part, not detailed solutions. I had the feeling that such sketches, which were made so quickly, also seemed preliminary. This way of sketching appealed to both a playful and intuitive approach because when we disagreed or could not understand each other on, for example, estimated movement patterns of people, it was also suitable to show solutions quickly at a conceptual level, both how people could move in space, between physical shapes, and how shapes could be structured to create movement of a particular type: for example, walking places, separating rooms, windows, benches, ceilings and stairs that could be in different ways with other elements and other buildings in different ways.

A problem was how to create a connection between the very large new building and the older building on the other side of the street. Conveniently, SketchUp could be used to explore how the sculpture park could have a volume large enough that it created a formal transition and a connection between the two very different buildings that would relate to each other in a pleasingly, aesthetically formal way. We could thus show transitions and contexts, dimensions and interaction between surrounding volumes. Without this shift between different media, the digital and the material, these ideas would not have come up the same way. One dilemma in this situation was that one may feel that the sketches are too simple or that the digital tool limits the flow and intuitive action. Another issue here can be seen in that it was necessary to spend a long time in the 'playful and the creative mood', where plans were rather unfinished, in contrast to the need to go on and get things finished and ready for presentation. The digital sketches were useful to solve this problem because they visualised preliminary ideas, and the sketches on paper took these ideas a bit further into the world of shapes. The digital sketches took some of the ideas even further into an apparently realised stage. However, the more realistic the sketches were, the more they could also be misunderstood to represent a definitive solution and not merely an idea. Therefore, the variation in level of realism in the sketches was important as a communication strategy.

Formal abstractions

In contrast to the preliminary playful sketches, the schematic plan of the garden was in a parallel process developed by the landscape architect, where elements were put down in the style of a formal landscape architect map, which formed the well-known starting point for the architects' and engineers' understanding of exactly where things should be (Figure 3). This was important in relation to the development of the building so that the plans could be realised in line with the development. The location had to take into account that there was a parking lot below the garden, and heavy items such as the concrete wall, the concrete table and the boxes with soil had to be placed so that they rested on the support beams below. The challenge here was that the landscape architect was basically the only one who could fully understand the entailments of the different symbols due to extensive experience of interpreting these two-dimensional

maps. Others in the collaborative group, such as the user representative, the politician, the art consultant and the artist, to some extent saw this map more like an abstract version of a bird's eye view, but one in which the three-dimensional realisations remained more or less unclear. Not all had the essential skills of being able to understand the symbols, numbers, letters and the position of exactly where things were located in relation to different heights in the terrain. Yet, at the same time, this was an important document to show where everything was.

Physical and digital interaction with the sketch

A tension between the digital sketch and the material one was when the landscape architect wanted to make a model of the buildings in cardboard (Figure 3). This was done in a thorough manner and employed the use of cardboard, needles, straws, glue, scissors and knives. For many this seemed an 'old-school' way of working with forms in landscape architecture. The interaction with the digital sketch entailed using the digital camera to take a photo at eye level, giving an idea of how these shapes would look if you walked towards them. We could also see the shapes and play with forms in a very free way without losing contact with the major lines of the building complex. It was particularly advantageous for understanding the rooms that originated as a real three-dimensional experience. Being able to see the volumes and spaces created increasingly greater physical and material understanding that we could not experience in the same way in two-dimensional sketches or three-dimensional on-screen visualisations. This physical understanding was further elaborated by the photos we took from different perspectives, including eye level. The issue here was that it was not perfect and it seemed old-fashioned to use cardboard and scissors, but this created a kind of sensorial inspiration because the body could experience how the rooms and shapes worked in the physical context. It inspired a type of physical musicality where dimensions, rooms and spaces became clear as composition elements with which we could change the forms through direct interaction and in a physical context and where the digital documentation occasionally deepened our understanding. These were images that we planned to use later in dialogues with other collaborators and the management.

Site identity sketches

One sketch showed some simple concepts of the garden, which were not about physical placement but more about the underlying concept: the changing seasons and climate relative to the passage of time and physical movement around the site (Figure 3). The sketch made by the landscape architect was based on the identity of the place and the design of the garden areas in relation to the sun's passage. Some zones would be in the direct sun and could be hot. Other areas would have more shade and maybe be windier. We then created zones for different types of movements and experiences, a zone for silence and contemplation and a zone for more social activity. In addition, we created a place that was more like a square where you could have other types of social gatherings. The problem here was that in this type of sketch the ideas were more detached from the physical designs. The advantage was that the concepts of motion, movement patterns, experiences and zones for different types of plants became clearer. These conceptual sketches heavily influenced the physical materialisation later. The ceramic art forms were eventually distributed in various locations and integrated in the concrete structures, such as in seating areas and by the stairs, in a way that supported the concept. There were three main art objects – 'the stone', which was a sort of seating table under the pergola, 'the window', which was a sort of dividing wall with an opening at the café area and 'the reflection', which was a seating object as an extension of a concrete wall.

Figure 4. 3D drawings manipulated with Photoshop (Photo: Wendelborg & Berg).

Manipulated digital sketches

Using 3D drawing programs to design and display the spaces created a realistic rendering of the imagined solution (Figure 4). The advantage was that it showed the rooms from several angles and that we could compose the shapes while at the same time viewing them from various sides. The disadvantage was that it was time-consuming. Therefore, there was less flow than when we worked with the cardboard, which was a more direct physical interaction with the form elements. In the 3D drawings, selections were further elaborated with Photoshop, such as with flowers, leaves and people walking around. Here it was important to place the people in the correct dimensions to give a better picture of sizes and volumes. The manipulation of the green growth gave a distorted picture of reality; initially it seemed obvious where to place boxes with green plants and flowers. However, this proved problematic as they could become either too dry or too wet and thus grow badly. Climbing plants were also placed in the pergolas so that shade from the roofs would be formed, but it may take many years before these would grow enough for this to be the case. The issue with using 3D drawing programs and Photoshop was that there was a challenge to balance between the desire to show the realistic finished result and the temptation to produce the result in an overly positive way.

Finished drawings that become sketches

During the construction it suddenly became clear that a long facade to the road had been cast without having taken into account that a staircase was to be built in that specific place. This meant that it was not possible to have stairs there because it would have intervened with the roof in the garage underneath. An emergency solution had to be developed, and so we used 3D drawings to see new alternative solutions. The main purpose of the staircase was to invite people coming from the opposite building into the park. Instead we chose to design a seat-

staircase. This became an intermediate solution that was not optimal. A challenge that comes with this example is that even if you have a plan there must be very good communication between building management and those who make drawings in every minute detail. It is extremely important that everyone is informed about the construction schedule because it often changes, and drawings need to be updated along the way. This is why many architectural drawings for a certain period can be seen as finished drawings, but during the construction process they prove to have only sketch value because new conditions arise that require new solutions and new, updated drawings. Here the issue is that finished drawings turn out to be merely sketches because the process is constantly changing. The lesson learnt from this event was that the sketches and drawings could not serve on their own; there was also a need for more systematic dialogue with the leaders of the project.

Materialising sketches in several modes
A dilemma in the dialogue with the architect that was making the 3D drawings of the concrete structures was that it was very time-consuming to test out formal compositions of how to position the tiles and forms. The ceramic tiles and forms were to be placed on the three-dimensional concrete structures. At that time, lime paper was used on 3D drawings (Figure 1). This was to reduce the hard physical materiality of the 3D drawings for a softer background, which enabled a faster way of drawing tiles and shapes on top of the drawing. A more diffuse background invited a more creative and sensitive way to place tiles so that it promoted a type of softness in the composition. Furthermore, sketches were made to test for issues of placement. Photoshop was used to place some of the shapes on benches and plateaus. This was compared against reality tests. During the development of ideas one form was placed on some benches both at a train station and in a backyard (Figure 5). This gave the opportunity for a completely different way of experiencing the sketch in time and space: one could sit next to the shape, walk around it and touch it. This clarified a movement pattern that could be detected by testing it in reality, seeing the object as you walked towards it, and you could then get used to it, comparing the surface of the shape in relation to the surface of the wood in the bench, a variable tactile experience of materials. This put the forms in a materialised context. When this was explored it was also clear that the forms would be characterised by nature's phases, different seasons and plants, bushes and trees in the immediate area. This was another form of participation, using an embodied approach to the phenomena to be experienced by others.

Another mode of materialising sketching was the sketches in the porcelain tiles (Figure 6). The technique here was to cast into plaster moulds and cut drawings into leather-hard porcelain with a thin knife or needle. Next the cut lines were painted over and filled with different types of line colours, such as copper oxide and iron oxide. Then the tiles were washed off so that only the lines were left, dried and fired. Copper gave black lines and iron turned brown. The details in the porcelain materialised into lines. Being able to touch and follow the lines in the material enabled a physical connection to the material and to the drawing. The environment should enable a fusion of just walking, sitting and perhaps experiencing art as a total experience with no specific start or end.

This way the intention of the environment was also to form a situation that was not too defined, creating more of a physical structure for a social sketch, enabled by the art. One example was the dividing wall called 'the window' (Figure 4), which was described in the competition material as follows: 'The window' is a metaphor for looking beyond something, or looking introspectively, looking forward or backward in time. It invites physical interaction through the fact that children and adults can be inside the frame. The water mirroring the wall creates a shape and space to explore, with a possibility to balance on the stones in the water. The water was later replaced by a flower bed because it became too expensive, but the balancing stones were kept there. The wall should create a new space, which could hide and cover and

create room for new movements. The motifs on this part were related to migratory birds and their long journeys. Winter was represented by snow crystals. These motifs were in dialogue with other motifs in the garden, such as circular seed capsules and planets.

The drawings were in this way physically and materially more present in the building and integrated into the surroundings, architecture and landscape, thus creating another form of sketch in the expanded field (Figure 6).

Figure 5. Tactile sketches on a bench and final installations (Photos: Berg).

Discussion: Hybrid sketches for collaboration

The entrance to the phenomenon of a sketch can be done in many ways, both through a digital and material approach and in transitional combinations and collaboration in various ways. Dynamic combinations can contribute to new creative processes. The art philosopher Juha Varto suggests reflecting on several levels of art practice in artistic research (Varto, 2009) – among other things, the view of man in art education and the view of the world in art practice. Furthermore, he thinks that one should identify whether there is any ideology for the site in the examples used or if there is any kind of standardisation in the project. In the end, he promotes reflection on whether there are any impressions from the relevant research fields that are applicable to the project and which may be useful to visualise the project. These topics are touched upon in the following description of artistic practice that has been documented and has led to the model shown in Figure 7.
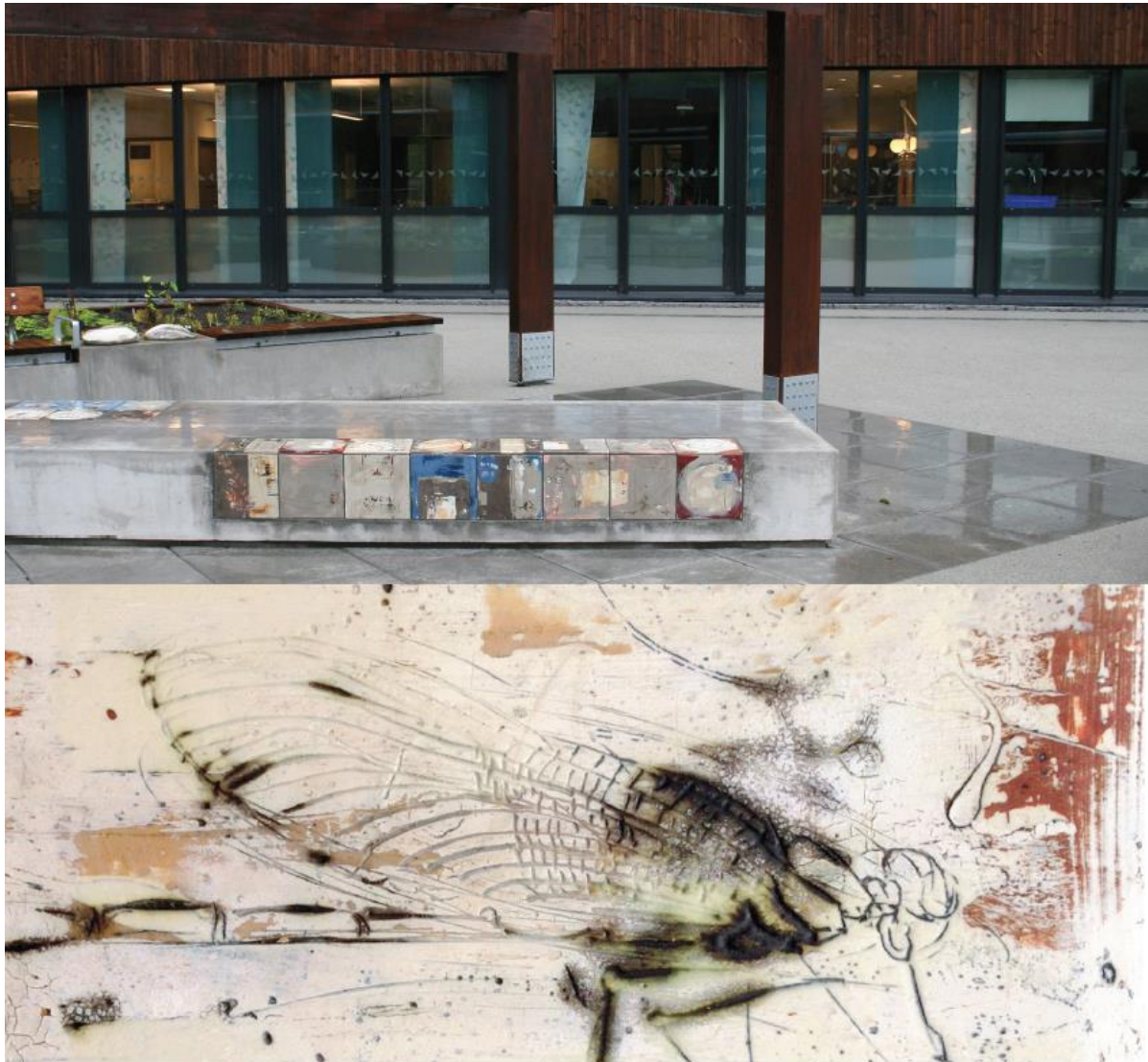
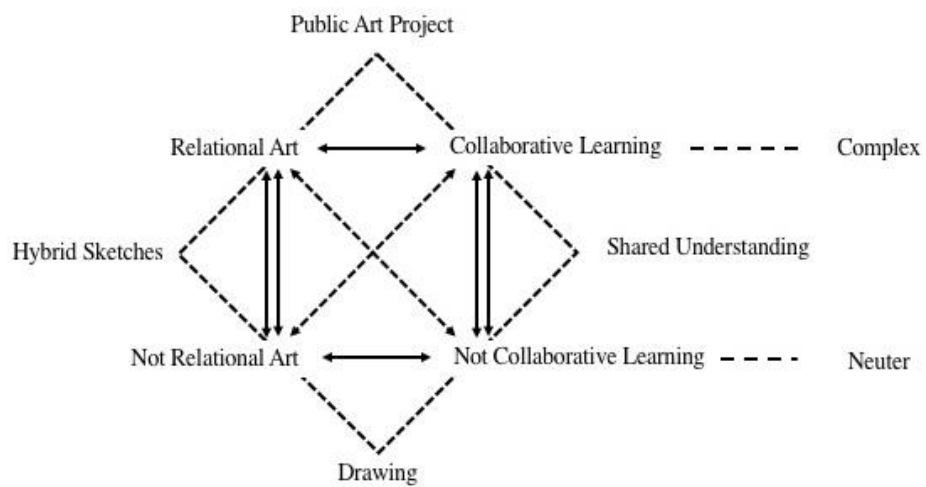*Figure 6.* Materialised drawings in porcelain (Photos: Berg).

Figure 7. A theory-practice-oriented artistic research model for drawing in the expanded field, developed from the Krauss model, by Berg.

In the construction of her model Krauss refers to the general applicability of the model that is derived from logical thinking. She described it as follows (Krauss, 1979, p. 38):

> The expansion to which I am referring is called a Klein group when employed mathematically and has various other designations, among them the Piaget group, when used by structuralists involved in mapping operations within the human sciences. By means of this logical expansion a set of binaries is transformed into a quaternary field which both mirrors the original opposition and at the same time opens it. It becomes a logically expanded field…

To follow up and try out the applicability of the model in a field that is opened up between drawing practice, relational art (Bourriaud, 2002) and collaborative learning, where the sketch can be seen as a form of 'scaffolding' (Vygotskij et al., 1980), the case study can be described, in accordance with Krauss's logic, as follows: 1) there are two relationships of contradiction which are termed 'axes' between 'relational art' and 'collaborative learning' because these can be seen as different established research areas. They can be in the perspective of a «neuter» axis and a complex axis. These are designated by the solid arrows (see Figure 7); 2) there are two relationships of contradiction, expressed as involution, which are called schemas and are designated by the double arrows and 3) there are two relationships of implication, which are called deixes and are designated by the broken arrows.

The model is a visualisation of a an artistic field where there can be hybrid transitions between different forms of sketches, both digital and material, which can contribute to mutual understanding and learning. This can in a pedagogical view be something that enables collaborative learning, where the various sketching modes work as scaffolding for better mutual understanding, as described by Vygotskij with his concept of 'zones of proximal development' (Vygotskij et al., 1980). Such scaffolding has been exemplified in artistic practice in several ways in this study. The chosen examples were based on criteria emerging from relevant concepts and theory in the field, as recommended in case study research (Yin, 2009). These concepts contributes to an expanded understanding of what a sketch is and to an expanded typology of the sketch through the concept mapping of categories of meaning (Maxwell, 2005, p. 46) in artistic practice. Essential concepts of the typology that was highlighted in the study were relevant in managing creative processes, such as the ability to understand open-ended sketches, formal abstractions, physical and digital interaction with the sketch, site identity sketches, manipulated digital sketches, finished drawings that become sketches, materialising sketches in several modes and in general how to use hybrid sketches for collaboration. Other approaches to drawing in the expanded field would expand the typology of the hybrid sketch by documenting and identifying new domains of artistic practice.

To expand the educational relevance of the study the concepts have been developed into learning outcomes in knowledge, skills and general competence for higher education (Kennedy, Hyland, & Ryan, 2007) because the sketch is relevant for mutual understanding in collaborative processes in several creative educations and in creative practices and creativity management. A person who participates in creative processes can strengthen the collaboration with knowledge, skills and competence about the sketch in the expanded field of art. Such a person knows that creativity and the unfinished are in a dynamic area and can use this in a constructive way. Furthermore, the person knows how abstractions in relation to materiality are central to understanding the exchange between different appropriate levels. The person has a deeper digital and physical understanding of space by being able to switch between multiple media. Some pitfalls associated with digitisation are that it may look too perfect, and thus it may be too easy to make many solutions that look ready even if they are just sketches. On the other hand, it is effective to make numerous variants with a digital approach, where surfacing quickly

gives a more realistic expression, and this can be highly motivating for a creative process (Evans & Aldoy, 2016). A person in this field further knows the pitfall that inspirational photography and digital manipulations can be misleading in relation to the reality orientation of the actual result. A knowledgeable person in the field can visualise the place's identity with simple concept sketches. A general competence is to be able to understand when to scale down completed architectural drawings to sketches because they can be rejected under new prerequisites in a process. Such a competent person knows how to put down a specific expression in the digital format in order to be emancipated into a freer way to sketch. The person can also use forms that lead to a type of tactile sketches. The person further knows how materialised drawings have a specific tactile quality and that this can in a unique way be the basis for visual documentation.

Inspired by the theory of sculpture in the expanded field (Krauss, 1979, p. 38), this study has shown what drawing in the expanded field may be. A particular focus has been on the hybrid sketch in the reflective space between the digital and the material in a creative collaboration. A traditional sculpture was through Krauss's theory expanded to be seen as 'not landscape' and 'not architecture', and an expanded view of sculpture can be extended to include landscapes and architecture in new hybrid forms. In a similar way drawing, and in this study specifically the sketch, can also approach relational art and collaborative learning in a public art project, manifested as hybrid sketches that contribute to shared understanding. The study contributes to theory with an expanded typology of the hybrid sketch, identified through qualitative fieldwork approaches through participatory design that include improvisational interaction (Buur & Larsen, 2010, p. 136) and in general to an expanded view on art-based knowledge that is relevant in a cross-disciplinary field, explored and identified through artistic research in a unique artistic event (Varto, 2009, p. 133).

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