University of South-Eastern Norway
Faculty of Humanities, Sports, and Educational Science
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Master's Thesis
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Study program: Design, Arts and Crafts

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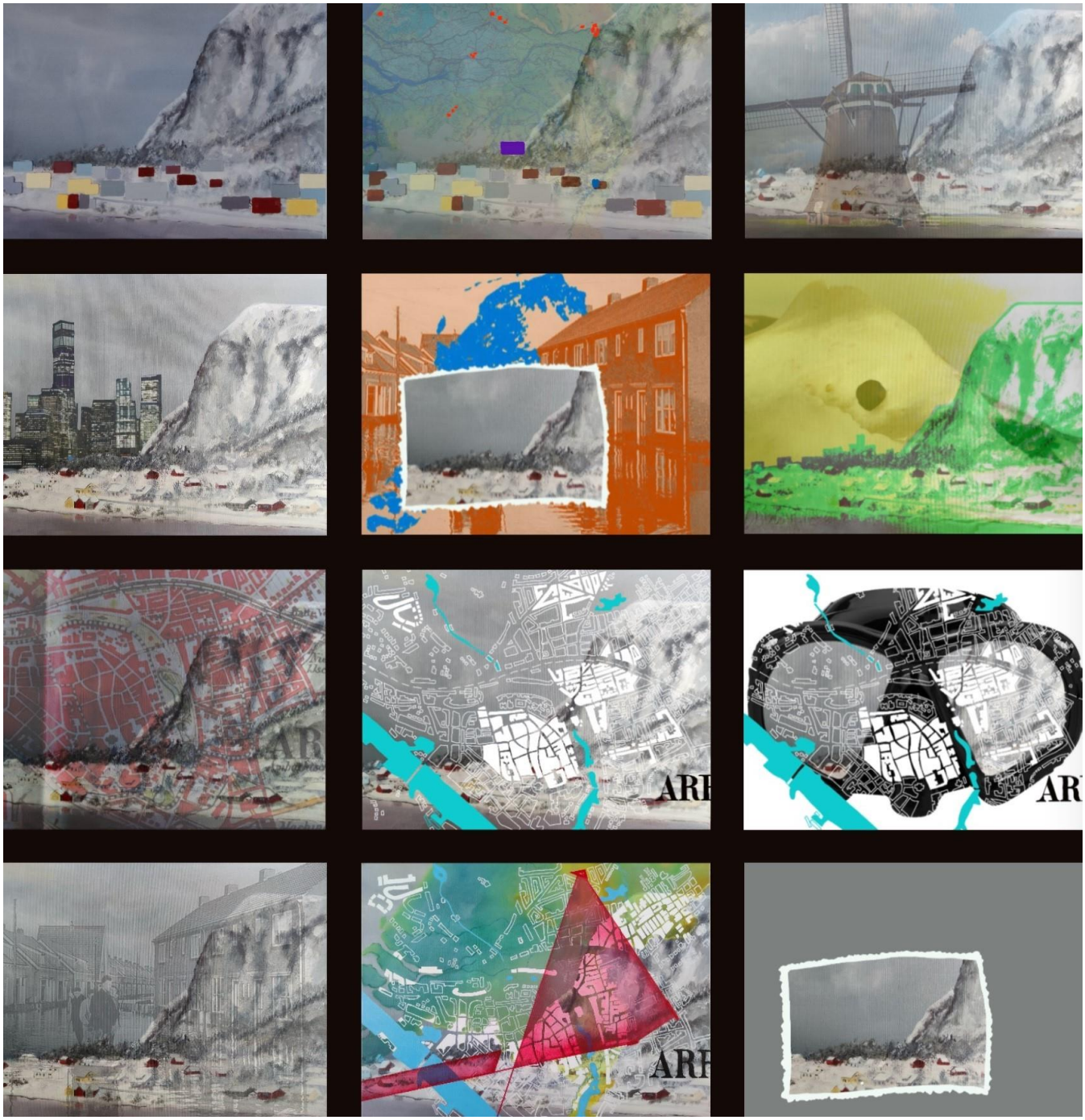
Di(gital) + (An)alogue = Dialogue

A Transparent Interaction in the Development of Oil Paintings



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This thesis is worth 60 study points.

“Creativity Takes Courage”

Henri Matisse*

*The quote "Creativity takes courage" is commonly attributed to Henri Matisse, though its exact source is uncertain. It is a widely celebrated statement emphasising the bravery required for creative expression. While its specific origin is not documented, the sentiment aligns with Matisse's views on art and creativity.

Abstract

This master's thesis is the result of research into the interaction between the digital and analogue development of a painting. The aim was to investigate whether experimental behaviour on a digital tablet could promote the development of creativity, potentially resulting in more interesting and daring paintings. By working alternately with digital and analogue images, a method has emerged that can increase creativity by experimenting with a painting on a digital tablet. It reflects, from an a/r/tographic perspective the process of daring to change the development of a painting. Digitally experimenting and visualising new ideas significantly reduces the risk of “ruining” the analogue painting and can contribute to the development of creativity. The text covers, in order of size and importance, the parts of the research into my own painting practice, the experimental attitude of my art students in the Norwegian Kulturskole where I work, and a minor theoretical study related to experimentation and creativity development. In addition, I looked at what art education-related framework plans and the associated visual models say about promoting creativity and I identified potential gaps in these.

Samandrag

Denne masteroppgåva er resultatet av forskinga på samspelet mellom digital og analog utvikling av måleri. Målet var å undersøke om eksperimentell åtferd på eit nettbrett kan fremje utviklinga av kreativitet som potensielt kan resultere i meir interessante og vågale måleri. Ved å arbeide vekselvis med digitale og analoge bildar har det oppstått ein metode som kan auke kreativiteten ved å eksperimentere med eit måleri på eit nettbrett. Teksta reflekterer, frå eit a/r/tografisk perspektiv, prosessen med å våge å endre utviklinga av eit maleri. Digital eksperimentering og visualisering av nye idear reduserer risikoen for å "ødeleggje" det analoge måleriet betydeleg og kan bidra til utvikling av kreativitet. Teksta dekkjer, i rekkefølgje etter storleik og viktigheit, delane av forskinga rundt min eigen målerpraksis, den eksperimentelle haldninga til mine elevar i den

Norske Kulturskole der eg jobbar, og ein mindre teoretisk studie knytt til eksperimentering og kreativitetsutvikling. I tillegg såg eg på kva kunstutdanningsrelaterte rammeplanar og tilhørande visuelle modellar seier om å fremje kreativitet og identifiserte potentially gap i desse.

Acknowledgements

Who could have imagined thirty years ago that one day I would be writing a master's thesis in Norway?

I feel privileged that Norway has given me the opportunity to study as an adult and complete my education to become an art teacher, which I started in the Netherlands in 1992. I am grateful for everything I learned and all the wonderful and interesting people I met during my studies. I would like to thank my family for living with a mother who was “always studying” and sometimes stressed and grumpy, my partner who was always there to support me, and George MacPherson, for patiently correcting my English. I would also like to thank my supervisors, Åsta Rimstad and Silje Bergman, for their valuable and structured advice. Furthermore, I am grateful to everyone who believed in me and supported me throughout this journey.

Ulsteinvik, April 2024

Monica Vermeer

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1 Introduction

The world is changing, technology is evolving rapidly, and digitalisation has become an essential part of our lives. New technological developments not only require an expanding need for digital skills and solutions, but also an increase in creativity to adapt to new situations, to unknown future jobs and a changing climate.

In the past two decades the volume of published books and scientific articles related to creativity in education has increased and today it is a very current and relevant topic. The more I read and hear about the importance and necessity of creativity in the future of the world, with the difficulties this will entail, the less creativity and willingness to experiment I observe around me in the art class where I teach. Students often choose the safe path and then wonder whether what they are doing is right. Figuratively speaking they do their best to stay 'inside of the box'. As art teachers, we would like them to leave the box behind and experiment with new processes.

In response to today's new challenges, Norwegian schools and the Norwegian Kulturskoler are increasingly implementing different training courses in the areas of both digitalisation and creativity in their curricula. As a part-time visual arts teacher at a Norwegian Kulturskole, I will explore the potential a drawing software on a tablet can have as a tool, to develop a more experimental method of working with the development of a painting. Such an approach could allow enhanced creativity by always having the option to "undo" unsatisfactory results by using the digital eraser. Using that "undo" function can make it easier and safer to experiment with different solutions. Solutions that initially do not seem to be the best can still contribute to a large variation in possible new outcomes. I would like my students to dare to take creative risks, not to choose the most obvious solution, but to push boundaries without the fear and risk of "failing".

In the main part of this project, I would like to explore whether the collaboration between digital and analogue creation affects my paintings and if so, in what way. I would like to challenge my students in the same way as I challenge myself. The difference is that I use multiple digital tools and not just the drawing program on the tablet and I also

paint with oil instead of acrylic paint. I wonder what could happen to my paintings when experimenting digitally with different colours, compositions, and subjects. Would seeing all the solutions simultaneously be a benefit? Could that help me find the development and progression I wish in my paintings? Could I use my experiences in my art teaching in the Kulturskole where I work? How do the ideas formulated in the educational frameworks stimulate this experimental attitude, and how should teachers translate these thoughts into their teaching practices? The questions I have formulated will form the common thread within this project together with a small investigation into the educational framework of the Kulturskole to see what is and is not included when it comes to stimulating creativity.

2 Problem Area and Research Question

For a large part of my life I have painted, starting in a Waldorf primary school (Rudolf Steiner school), and continuing through art school in the Netherlands and other art education, in Norway. I have painted mostly abstract, based on (details of) shapes and colours from nature, but also portraits, often with the theme of opportunity, injustice, and inequality. I have tried various types of paint and ended up with oil paint. This gives me the chance to work slowly with colour transitions and details without drying out before I am finished.

But some years ago, I felt that my development was stagnating, reducing my joy and motivation to continue with painting. I felt uncertain about what to paint, and what choices to make, and I was afraid to fail in my painting projects. It felt like I had lost *The Courage to Create*, as Rollo May (1976) mentioned in the title of his eponymous book. Although dated, the book conveys an interesting view of creativity, and the courage necessary for creating from an existentialistic point of view. May mentions that courage is among other things about decision-making and commitment to this decision is not the opposite of or absence of fear, but the capacity to continue despite fear.

To cope with this lack of motivation and courage to paint while I was working on some commissioned portraits, I used my phone and the app Sketchbook from Autodesk to experiment digitally with editing my paintings. I took photographs of my work during the painting process and explored various possible changes by editing and/or adding art and design elements such as composition, colour, balance, and repetition to enhance the expression of the painting. I found this has helped me take new steps in my development. I have discovered different, and for me, unexpected ways of painting, which produced more interesting results. I dared to experiment in various directions, importing new images and combining them with the existing composition on the canvas. I played with the possibilities in the drawing application. I surprised myself with the results and that again gave me new motivation to continue painting. But what actually happened when I used digital painting to experiment with further steps in an analogue painting? What can one learn from such a process? It made me wonder whether this kind of digital experimentation could improve experimental thinking and creative work

habits for my art students. I wonder if implementing digital drawing and painting as a design tool could help my students dare to be more experimental in their analogue paintings and thus facilitate faster and easier development. Although creativity is mentioned in many educational frameworks, is seen as important in innovation processes and receives a lot of attention in the media and academia, the result is not necessarily an increase in measured creativity. Some research shows a decreasing result on creativity scales, indicating a decline in measured creativity (Kim, 2011). Remarkably, greater dedication to achieving a desired skill leads to the opposite. That is an interesting contradiction to investigate more closely.

I am also interested to what extent the educational frameworks for (visual art) education at compulsory schools and Kulturskole in Norway focus on experimentation. To what extent does the curriculum framework LK20 (Utdanningsdirektoratet, 2017), and the educational framework for the Kulturskole (E. Birkeland, 2012) encourage experimentation as part of developing creativity? What can be learned from other subject education wheels, or other focus areas to develop creativity? In many curricula and educational arenas in the world creativity is a particularly desirable result (Lutnæs, 2018). The question is: does the theoretical curriculum work in practice when it comes to stimulating creativity and developing the qualities necessary for creativity to emerge?

The main area in this project is painting, where the digital tools have the function of making it easier to visualise the effects of more daring and unusual choices, without them being irreversible. The idea is that the "undo" function in the drawing program will make it safer to experiment, making it possible to achieve more creative, unexpected and innovative results. Will this work in the same way for me as for the students at the Kulturskole? By doing a similar project with my students in the Kulturskole, I hope to get more understanding and insight into the difficulties they encounter in an experimental process with painting and tablet drawing. In this project, I hope to find some factors that can influence such processes, so that I can benefit from them in my development and better help students in their experimental processes.

Digitalisation has become common in Norwegian schools, although later in the Kulturskole where I work. A Kulturskole is a voluntary school, where children usually aged from 6 to 18 can receive lessons in theatre, music, dance, visual arts and more in their spare time, normally after school hours. Every Norwegian municipality is required to have a Kulturskole, but the variety of subjects offered differs per municipality and the subjects offered are not tied to concrete goals but are based on guidelines from the *Kulturskole Framework*. The Kulturskole where I work is a relatively large school with approximately 500 places. The school is attended by approximately 30% of all primary school students in the municipality out of a total of 1353 (*Befolkning Ulstein*, 2022). They attend at least one of the subjects of music, dance, visual arts, theatre or music production. It is one of the highest percentages of students in this type of school in Norway. I have been working at this school as a visual arts teacher since 2015 and initially started with 15 students, all of primary school age, divided into 2 groups. In the 2023-2024 school year, there are 83 visual arts students, divided into 10 groups. In 3 of these 10 groups, the students come from secondary education. The voluntary character of this school implies that there is no compulsory curriculum. Students can opt out of difficult things and thus repeat what they already know instead of trying new things that may contribute to their development in the subject and personality. That makes it difficult to teach less popular or difficult techniques and some students may choose the easiest way without having to learn to fail and try again. In the worst case, this can lead to a loss of motivation.

A need for my visual art students to be able to draw digitally has paved the way for the purchase of tablets on the Kulturskole where I work. Tablet drawing and painting are popular, and many children and young people want to try their hand at it, often inspired by Japanese animations. This means that I, as an art teacher, must be able to teach the use of digital tools, even though it was not part of the curriculum at the university only 8 years ago. At that time, I taught myself how to use a 3D printer for my bachelor's thesis. In my master's I will learn to use the drawing program Procreate to explore if the use of a tablet, in combination with traditional painting, will increase experimentation, both in my own and in my students' paintings. I want to investigate whether the use of digital drawing software can be an extension and added value to the field of art education. The experiences gained from this education are necessary as a starting point to

advocate for their potential application in art education. Some may say that the use of digital drawing programs is at the expense of developing craftsmanship and the associated knowledge. Or is it possible to use a tablet as we use other tools, such as a brush, a stapler or a hammer, to create art? Are there any advantages to using a tablet in the development or design of a painting and what could they be? Digital work can save time, but do we want that in a society where everything goes so fast that not everyone can participate? I like the alternation between the fast-working methods on the tablet, and the slow process of painting with oil paint, where one must wait for the paint to dry. Digital tools may lift painting to something new in the future, just like the start of photography gave a new direction to visual arts. Digital applications can contribute to a new kind of visual art made with or without the use of good craft skills. I prefer the first option with good craft skills. I also hope that the use of digital applications will increase the originality and uniqueness of a painting and will thus gain more prestige when added to the fact that it is now so easy to print artificially generated images. I hope that human craft skills and the creative human process will be more valued in the future when the digital alternative is produced in multiples and costs nothing more. The danger for the creative process is of course that the craft skills and the unique character of a painting will be lost if, in the near future, a robot will be used to create a painting with oil paint based on a certain AI-generated text. In a throwaway age using a tablet to try out and sketch can save a lot of paper. From the student's perspective, a tablet in itself is inviting, and they see it as an advantage that they do not get dirty and that they do not have to clean and wash as they should after a painting session.

In my eyes, the handicraft part of art should not be replaced by digital tools. Handicraft skills are an important element in art education in general. The expression “having something at your fingertips”, refers to the physical nature of learning. Fine motor skills are trained, but also material knowledge is built up, for example by noticing the difference in materials to draw with. These differences disappear when using a digital drawing program, which removes the connection between the visual expression of a certain line and the material that produces that line. After all, everything is drawn with a digital pen. It is the teacher's task to ensure that digital tools are useful in supporting craft techniques and that the interaction of the two can have added value. Art teachers cannot

close their eyes to the new digital developments and changes in society and must integrate them into art education in a responsible way. That is why I will focus on the use of digital tools like we use other tools in the art classes. I will use both the words digital *tools* and *aids* because both can contribute to the experimentation process. Digital tools can enrich the art classroom but should not replace the craft techniques for digital techniques.

Digital tools are becoming increasingly important, not only in art education but also in the visual arts. Projections of images on canvas to "trace" the lines are no longer referred to as cheating but are accepted as part of the process. David Hockney (2003) has shown in his book, *The Secret Knowledge: The Rediscovery of the old masters' Techniques*, that aids have already been used in the Middle Ages to achieve more realistic results in visual art. Artists followed with new solutions such as concave mirrors and later lenses to transfer an image onto a canvas. In this way, they were able to achieve realistic perspective and light fall. Today, the digital processing of images before the painting process starts is fairly common and different artists adapt it in their own way. To name just a few contemporary visual artists, David Hockney has used a tablet as a "painting tool" to express his vision of nature, Karen Vermeer mixes two people digitally to create images of people who do not exist. While Simon Wågsholm works digitally with colours and uses a projector to try out where to place an element on the canvas during the process, he paints it without tracing the image. In my images, I have previously used digital tools halfway through the process to decide on the use of colours, and possibly to mix the image with another image when I was not satisfied with what I had. I then discovered that I made more exciting choices when I worked digitally in the process and new expressions arose in my painting style. Is it the case that one dares to experiment more when there is an "undo" key available?

Research Question

Based on the preceding, I formulate the following research question:

> *How can the explorative use of drawing software on a tablet contribute to the development of a painting?*

To fully understand this research question, a clarification of terms is needed to explain what I mean by the concepts mentioned in it. By *explorative use,* I mean a playful and free way to discover what can be achieved by experimentation to develop a painting on a tablet. *Drawing software on a tablet* in this project is Procreate on an iPad, but it could just as easily be another program or tablet without changing the outcome of the project. I see *the development of a painting* as continuing in the creative process despite encountering obstacles that hinder progress. These obstacles may include fear of experimenting and making mistakes and "ruining" the painting, being trapped in a rigid painting style, struggling to envision new enhancements, or feeling demotivated by perceived flaws in the artwork.

Additionally, as a sub-project within the main project, I will research how different models with keywords from visual arts education curricula represent experimentation and other related qualities for the development of creativity.

I will divide the project into two different cases and explore this from two different perspectives i.e. that of the teacher/artist and that of the student. Case 1 concerns my own process and covers most of this project. Case 2 is about the work of the students. I would like to discover what the implications may be for the working process, for the thoughts behind it and the expressions in the painting. I also would like to see if digital experimentation encourages new and different thinking and risk-taking when developing a painting.

To structure and frame my art process, I used "difference" as a continuous theme in my paintings, although they have various subjects. Difference refers to what happens between digital and analogue, between fast and slow, between high and low, rich and

poor, prosperous and underprivileged, Norwegian and Dutch. Without deepening more why I used this as a theme because it is not that relevant in the context of this project, it might be good to mention what gave me the thematical structure in my work.

Structure of the Thesis

This text is divided into 7 chapters in which I successively discuss the next topics. Following on from the introduction in Chapter 1 Chapter 2 will focus on the delineation of the problem area with the research question. In Chapter 3 the text continues with the theoretical backgrounds of relevant topics for the project. Chapter 3 contains digitality in visual arts and various aspects of creativity that can influence experimentation. It concludes with information about the Norwegian cultural school, the curriculum of the cultural school with the subject wheel, other subject wheels in visual arts education and the measurement of creativity.

Chapter 4 focuses on the research design and includes the chosen methodology, the two research cases (Case 1 on my own artwork, and Case 2 on the student assignment) and their methods and ends with some ethical considerations regarding the chosen methodology.

Chapter 5 deals with the analysis of the research and in Chapter 6 I will discuss the discoveries from the metaphorical dialogue between the digital and the analogue. Finally, in Chapter 7, I will draw conclusions based on the progress and results of this project.

3 Theoretical Frameworks

This chapter covers the topics of digitalisation and various aspects of creativity related to relevant topics in this research project. It continues with information about the Norwegian Kulturskole and its curricula for art education, teaching creativity and measuring it.

3.1 Digitalisation in Visual Arts

When speaking about art nowadays, it can be both digital and analogue art. But what does it mean and how is it visible? The word analogue comes from the Greek word 'analogon' which means *proportionate*. Later the word was used in English with the meaning *word corresponding with another* (Harper, 2023a). The word digital comes from the Latin word 'digitalis' which means *pertaining to numbers below ten*. The numerical sense is because numerals under 10 were counted on fingers (2023b).

The use of terms "analogue" and "digital" is derived from computer development and technically refers to the difference in the way data is transmitted. On the website *Study.com,* the next explanation can be found:

> The main difference between digital and analog is how the data is transmitted. Analog signals are transmitted physical waves and have gradual increases and decreases. Digital signals are transmitted in the form of 1s and 0s, and it is entirely on or off there is no in-between" (Taktak, 2023, p. first alinea).

Further, it says that "An analog is a measurement or representation of something that can fluctuate (…) Digital is an on or off type of signal with no in-between*".*
As a painter, I see analogue and digital as the opposite of each other, and as the difference between the physical and the virtual and the slow and fast work of creating visual art. It will be interesting to see what may happen in the interaction between something that is binary and absolute and something that is analog and fluctuates.

Digital Tools in Visual Arts

Although many new digital tools have already entered the art studio, such as photo editing programs, digital projection, *Google Steet View and Maps,* 3D-scanning, -modelling and -printing, laser cutting, virtual reality, NFT, and lately also artificial intelligence, I will focus most on drawing on the tablet and its interaction with traditional painting, because this is the main part of this project. However, I would like to briefly highlight AI and the possibilities it creates for visual art and visual art education. Digital tools are mostly used as a way to work faster and more efficiently. Considered as a form of visual communication, visual art and digital visual art are quite the same (Wilks et al., 2012). They both express something visually. The development of digital tools is happening rapidly, creating both new possibilities and discussions about their use. Some researchers are negative about this development, arguing that the mechanical and digital processes create a distance between the artist and the artwork. Others see how digital tools can strengthen and expand traditional art, and speed up processes (Aboalgasm & Ward, 2015).

The Tablet as a Tool in Visual Arts

Tablet drawing and painting as *fine arts* are no longer as current as it was ten years ago. The first drawings David Hockney made on the tablet date from more than ten years ago. But it might play a role in the *design process* in fine arts. It paved the way for new genres, such as combining analogue drawing or painting with digital art. New digital printing methods such as giclée print provide such good quality that it has entered the art world with numbered editions, albeit with an ongoing debate about its artistic value, especially about the craft part of it. Drawing and painting on the tablet as *a tool* to make animations is still current and popular among today's youth.

In the art-based research project *Not Quite Knowing* (Søyland & Juell, 2014), the tablet is used to develop paintings. The main goal of the project in which Søyland and Juell collaborate is to investigate whether using a tablet with a drawing program makes it easier to initiate a painting process and secondarily to what extent this can be useful in art education. They point to positive characteristics of the tablet, such as the flexibility

of alternating between digital and analogue working. One can work faster, try out more exciting and innovative solutions and can thus help in developing a new painting style. But they also note that there is a difference between the digital and manual production processes, although both processes easily merge into each other.

Sara Sintonen from Helsinki University points to a new-materialist vision of digital and analogue painting in the article: *From an Experimental Paper to a Playful Screen: How the Essence of Materiality Modulates the Process of Creation* (2020).
She focuses on the materiality of both from a new-materialist view. She points to the flexibility and the dynamic of working on a screen:

> I can often revert, rearrange, change, add and modify the layers of my work in many ways. With analogue work, the layering is more distinct, and, in principle it is irreversible once the work has been done in an incremental order. Additionally, the scalability of a digital screen creates a totally different dynamic viewpoint for a creator (…) (Sintonen, 2020, p. 1328).

In analogue painting, one can be limited by material properties, such as the drying time. The action of applying paint to your brush and deciding how much is needed before it gets to the canvas is a necessity in this process, as is its irreversibility. The unique character of a painting points to its materiality. Although a digital painting is virtual, it also can be seen as a 'thing' because you can save or share it Sintonen points out (2020). She also mentions the importance of playing without expectations while painting digitally. Every experiment is reversible if it does not meet the creator's expectations, and thus leads to less frustration. It offers impulses one otherwise might have missed. The analogue way invites a more sensory and embodied approach, while the digital way leads to an experimental and playful approach, she notes. But combining both, interaction with each other, or intra-action between the creator and the material, is an intertwined process, which cannot be so easily separated.

AI Image Generators

With a playful experimentation perspective, exploring artificial intelligence image generation like *DALL·E* (*DALL·E* 2023) and *Midjourney* (*Midjourney*, 2023) It's a lot like playing. The creative part here is to make the text instructions as precise as necessary for the expected image to appear. On *DALL·E* 's website, it is explained as follows: "DALL·E was trained by learning the relationship between images and the text used to describe them. It uses a process called diffusion, which starts with a pattern of random dots and gradually alters that pattern towards a final output." In more general terms you could describe it like this: it is image generation based on text prompts that with the help of algorithms that are trained with images from the internet, for example from Instagram or Facebook, generates new images. This is problematic from several points of view. Initially, AI is based on 'old images' and only makes new, coincidental combinations of them and the question that arises is what amount is innovative. In 2022, an AI-generated artwork by Jason Allen won an award for the best computer-generated art piece without mentioning that AI was used to create the image (Foley, 2022). That complicates the ongoing debate about what makes art art, and when or how it can be copyrighted. The disagreement is about what is important in art, the craft part, or the visual result, based on a text prompt. This year it was decided that the artwork by Jason Allen cannot be copyrighted because of the AI use. But more importantly: what about the copyrights of all images used for the AI training? Is it legal to use them without permission? That is a current question that judges and legislatures must consider and answer. A third and growing problem is the storage of all AI-generated images. Each new prompt produces four new images. All images are stored and storing them requires a lot of energy. Is that still acceptable nowadays given climate change and environmental problems? Should we use scarce energy to store the results of "something fun to try"? Image generating like *Dall-E* and *MidJourney* is about giving away the alternatives to the algorithm. This can lead to innovative laziness because we no longer have to be creative. But on the other hand, we have to be more creative with texts that need to be entered. It can be good training to see whether descriptions are precise enough and contain what they are supposed to visualize. A new problem may be that we need to learn how to choose the best of the four options that AI offers. Are we able to make the right choices? And on what basis?

2D Digital Tools in Art Classrooms

In the last decades, several master's, and PhD theses and scientific articles have been written on the use of digital tools in art education, with a different perspective on the theme (Aboalgasm & Ward, 2015; Patton & Buffington, 2016; Stana, 2022; Wilks et al., 2012). These studies show that not all art teachers welcome the introduction of digital technology into the art classroom. Some experience it as a loss of working in and with materials and the associated skills. Others point to the opportunities to develop creative skills and convey the artistic message without relying on craft skills.

The different views on the subject are splitting the professional environment of art educators in Norway and probably in other countries as well. “The discussion is polarised, but we need both digital and analogue art education”, concludes Ingeborg Stana (2022), professor at OsloMet. She points out the different advantages of analogue art education. In the first place, meeting real materials, training in hand-eye coordination and the tactile experience. Second, the changes in the creative work leave marks which lead to experience-based learning about the consequences of handling the material. And third, the analogue tools contain several media, which have differences in expression, texture, and size. Concerning drawing Stana (2022) mentions that it depends on the task whether it is appropriate to use analogue or digital methods. In figure drawing where a large size of paper is more useful to work with, one should choose analogue drawing. In design processes, it saves time to use digital tools because it is easy to change a design and make different versions of it if the user masters the digital tool well. In addition, it is easy to share the results with others all over the world, but the success of the advantages depends on the digital knowledge and educational skills of teachers.

Søyland and Juell (2014) do not mention the importance of the teacher's skills in digital drawing but focus on a possible increase in the students' experimental potential through the use of tablets in art education. The fact that children enjoy working on a tablet, is also positive in the context of education (Aboalgasm & Ward, 2015). The use of the different tools in art education should be complementary rather than a separation between analogue or digital ways of working (Souleles, 2016). From a new-materialist

point of view, the analogue canvas is not the opposite of a digital screen, but just a different material, offering different possibilities, also in art education (Sintonen, 2020). They represent different things, that can strengthen and complement each other and can therefore not replace each other in intra-action with students.

The *meaningful* use of digital tools in the art classroom is also a problem. For example, setting up a 3D printer without the associated training for the teacher and appropriate learning objectives seems like a waste of money. Also, the importance of the difference between using technology for training how to use technology, or for educational objectives when the use of the technology is integrated as a tool (Wilks et al., 2012).
A condition for meaningful use is that the teacher controls the digital tool in such a way that it can be taught and used as a learning tool for the students. But often what the school offers to the student in all digital devices lags behind what the students use at home. This is not necessarily a result of too few updated teachers but of the lack of resources to keep the ICT park up to date. Developments are happening so quickly that it is almost impossible for schools and teachers to keep up. In addition, there often is a lack of professional technical support. Art teachers who try to integrate digital tools into their art teaching give up when the internet does not work properly or there are technical problems with the devices (Wilks et al., 2012).

A major advantage can be that students without manual skills can still express their artistic message. The work is performed by a digital device while the student can fully focus on the creative part. That would even make students less anxious, allow them to experiment more and correct mistakes more easily. On the other hand, many art teachers argue for the usefulness of mistakes, the function of fear in the art process and the dirty hands of working and experimenting with materials (Wilks et al., 2012).

Christie et al. (2020) conclude from their research project *Drawing from the observation in an analogue or digital environment* that the different media did not affect the accuracy of the drawing, but that it changed the way the eraser was used. They found a big difference in the way it was used and the extent to which it was used. In analogue drawing, the eraser was most commonly used to soften lines and add highlights, while in

digital drawing it was used to undo mistakes or to remove previous sketch lines when the drawing was finished.

The idea that digital technology tools could lead to more experimentation, as some researchers conclude seems logical, Gardner and Davis (Brunck, 2014) point to a decline in the propensity to take risks among today's youth. Despite, or because of digital applications that are intended to make things easier, act as shortcuts to a goal and as a buffer against risks in general for today's youth.

While the discussion about the use of digital tools in arts and crafts education is going on, AI will create an even bigger discussion. Ingeborg Stana (2023) comments on the use of AI image generation in her small research project in the Norwegian education magazine *Bedre Skole*. Some of her art teacher students in third grade of higher education experimented on the use of AI in painting class, as a tool to produce and change typical styles of a painting. As a result, the students were more efficient in the production of the idea phase and worked more independently. The focus shifted to text and coming up with synonyms. Frustration arose because the system could not be controlled properly due to errors in the algorithm regarding the understanding of technical terms in art. Although there are some advantages, Stana is sceptical and gives 3 arguments for this. Firstly, the personal element that comes with painting was not highlighted, secondly, it was at the expense of the thoroughness of the process and thirdly, AI can create an unfair overconfidence and make us dependent on technology. AI can help creative intelligence, but not replace it, Stana believes.

3.2 The Development of Creativity

Because the research question is mainly related to creativity and the development of creativity through experimentation in the making of visual art, the concept of creativity plays a major role in this project and therefore receives a lot of attention in this text.

21st-Century Skills

Creativity is a particularly relevant term which is often seen in relation to so-called *21st-century skills*. The so-called *21st Century Skills* were first mentioned as such at the beginning of the 21st century. They are skills that are seen as necessary to adapt to the rapidly changing world (*Batelle for kids*, 2023), and are a part of a learning framework from the USA, *The Framework for 21st Century Learning.* The most important skills for education are the *Learning and Innovation Skills*, the so-called 4Cs, *Critical Thinking, Communication, Collaboration,* and *Creativity*. These skills that "prepare for increasingly complex life and work environments in today's world", are also mentioned in the *Framework for 21st Century Learning P21* (*Batelle for kids*, 2023). This is another learning framework from the USA that is developed with input from teachers, education experts, and business leaders "to define and illustrate the skills and knowledge students need to succeed in work and life, as well as the support systems necessary for 21st-century learning outcomes" it states in the first paragraph of their webpage P21 resources (*Batelle for kids*, 2023). Norway has adopted some of those ideas in the governmental document about education for the future (Ludvigsen, 2014).

To Develop Creativity

In recent years, creativity has received a lot of attention as a research area (Beghetto, 2006, 2009; R. A. Beghetto, 2021a, 2021b; Beghetto & Karwowski, 2018; R. A. Beghetto, Karwowski, M., & Reiter-Palmon, R, 2021; Beghetto & Kaufman, 2014; Cropley, 2006; Davies et al., 2013; Olafsson, 2020; Sawyer, 2020; Sawyer, 2006). However, less attention is paid to how one can become more creative and how this affects the willingness to take risks and the ability to experiment. Equally little attention is paid to which concrete actions need to be taken, even outside the visual arts environment, and what role the student plays in this. However, the research shows that the education system plays a role in the development of creativity.

A prerequisite for a creative process is that the goal must be open and that it is heuristic, i.e. investigative. At the start, you do not know where you will end up. In the art classes

at the Kulturskole, I often see that students, at the start of an assignment, are very determined about what they are going to create, without being open to other possibilities or willing to experiment. That can be a challenge. In this project, both I and my students must be open about what the final product will be and dare to go in all directions. That is how creativity can develop. The extent to which the results of the process are creative depends on the opinions of people with knowledge within the relevant domain (Amabile, 2012). Whether the results can be called creative or have benefited from the experimental use of a drawing program on a tablet can be difficult to assess. I can give my opinion on the student's experimentation process, but I am less able to assess the creativity or willingness to experiment in my process.

The fact that education at the Kulturskole is voluntary could be a good starting point for students to dare to experiment more because there is no binding assessment of the result. It might be easier for the students to try out new things, without fearing to make mistakes and fully focus on the process. However, I did not experience this as the case in my classes. Rather the opposite. The students were still afraid of making mistakes and for example, did not dare to experiment freely or test the limits of the assignment. The efforts may be lower, resulting in less experimentation, precisely because there is no assessment. How can I as an art teacher stimulate experimentation with the risk of "failing"? How can one increase the willingness to take risks and the ability to experiment?

Creativity, what is it?

According to the Encyclopaedia Brittanica, the term creativity means: “the ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device, or a new artistic object or form” (Kerr, 2023). Creativity is a broad term that is used more and more often, preferably in connection with 21st-century skills and in combination with innovation and has become a highly desirable outcome of (art)education. Many books have been written on this subject in recent years, covering the subject and its complexity from different perspectives. Although there are different theories about creativity and creativity development all of them

agree on the cross-contextual nature of it. Some of them focus on the growth of creativity (Beghetto & Kaufman, 2014), while others focus on creative production (Amabile, 2012) or the process of innovation and environmental influences (Rhodes, 1961).

In 1961, Rhodes published the article *Analysis of Creativity* (Rhodes), where he argues for the *4P Theory*. This theory has long been the most valid among the various creativity theories. He argues that original ideas are the by-products of three things:

> 1) a human mind (person) grasping the elements of a subject, 2) prolonged thinking about the parts and their relationship to each other and to the whole (process), and 3) sustained effort in working over synthesis so that it can be embodied or articulated competently (product), (Rhodes, 1961, p. 305).

The resulting product is influenced by the relationship between the creative person and the area, reactions to needs, feelings, perception and imagination, and has been given the word *Pressure*, which is the 4th P in the *4P Theory*.

Depending on the context, the term creativity is assigned different meanings. Teresa Amabile (2012) gives the following definition of the term: “The production of a novel and appropriate response, product or solution to an open-ended goal”. In this definition, she emphasizes the innovative, the appropriate and the unknown outcome.
In her *Componential Theory of Creativity*, she distinguishes between four components as prerequisites for creative production. Three of them are personal characteristics (knowledge of the field, cognitive and personal characteristics, and inner motivation) and the fourth is the social component, related to collaboration and the environment. Although Amabile's theory of creativity can be applied to all forms of creative activity, the main focus is on innovative processes in organisations, and not normally on creativity in the field of art or art education (Amabile, 2012). Whereas in organisations the *result* of creativity is the goal, art has the creativity *process* as the goal. But in both, willingness to take risks is important. The extent to which a person is creative depends on the interaction between the four different creative components at a certain time (Ama-

bile, 2012). Amabile's Componential Theory is normally focused on innovation and results in organisations, while other theories are more applicable in teaching situations. Beghetto and Kaufman (2014) focus on creativity in the classroom and the development of creativity from the starter level to the professional level, where the social area is one of the most important factors in inhibiting or promoting creativity. Their theory of creativity is known as the *Four C Model of Creativity* (Beghetto & Kaufman, 2014).

The view and study of creativity have changed throughout history in response to new knowledge and new perspectives. Lately, the socio-cultural view has been the most common, especially in the field of education. But the question is whether that position is still tenable within today's new world views. Henriksen et al., (2022) argue for *Rethinking the Politics of Creativity*, seen in the light of posthumanism, to a new understanding of *Creativity beyond the Western Anthropocene*, to which they refer in the article of the same name. The debate about this is ongoing in academia, discussing non-Western knowledge, (new)materialisms, human-machine assemblages and non-dualistic embodiments to arrive at a new vision of creativity (Henriksen et al., 2022).

Creativity in Frameworks

In this chapter the focus is on the socio-cultural perspective, keeping in mind that there are also other perspectives to illuminate creativity. Creativity arises within frameworks, both physical, psychological, and social frameworks. These frameworks set boundaries that can be both hindering and supportive in developing creativity. As an art teacher, one must therefore be aware of how these frameworks operate, and how they can be adjusted when they become obstructive.

Learn to be Creative

For many years, creativity has been seen as an individual trait or talent useful for self-expression and self-actualization, and it was therefore neither desirable nor fair to stimulate such traits in the classroom. However, concerning the idea that creativity depends on a socio-cultural context, such views have changed. If something can be seen as creative, an audience is needed that can judge this, i.e. a socio-cultural norm (Cropley, 2006).

The roots of the social-cultural theory go back to the work of the psychologist Lev Vygotsky in the 1970ˢ and have since developed in slightly different directions. The starting point of this theory is that the cultural surrounding of a child defines how the child learns about the world (Skaalvik & Skaalvik, 2013). Vygotsky is also known for the *Zone of Proximal Development,* which refers to what a child can do with the help or instructions of an adult, which he could not have done without. With this help, the student can reach further by stretching into the zone of proximal development. That requires active commitment from the child by engaging and contributing to the education by dialogue. Every child has their own personal zone, and education needs to be customised to each zone (Skaalvik & Skaalvik, 2013). That is in the context of the Kulturskole very realistic because the art groups in this school are approximately 6-9 students.

The social-cultural environment is crucial for providing opportunities and constraints to develop creativity (Doyle, 2018). Although they call it different, several creativity researchers agree on the important role of various types of environments in the expression and development of creativity, besides individual personal characteristics. In addition to the influence of the physical environment, the psychosocial and educational environment also influences creativity (Beghetto & Kaufman, 2014). In a classroom where students do not feel safe or comfortable and are afraid of the criticism of peer students or teacher, it will be hard to enhance students' creativity. Rhodes (1961) refers to this situation as *Press* as the social environment, and Amabile (2012) calls it the *Social Component* in her *Componential Theory of Creativity*.

As stated before, creativity is linked to the socio-cultural environment in which it occurs, i.e. the context. That means that both what is creative and how creative it is, is judged by and in the context. What is creative is related to the degree of how unexpected, innovative, and surprising the answer to a problem is, as a deviation (change) from something that already exists (norm). But when the deviation is too great, it is judged as eccentric, wrong, or even criminal. In a school situation, it is the teacher who must facilitate tolerance and flexibility and cultivate an understanding of how great the change from the socio-culturally accepted can be, so that the students can find out when their "deviation" is acceptable when they answer a task, without being labelled as crazy

(Cropley, 2006, p. 126). In addition to learning how big the creative change can be, the students must understand when it is appropriate to be creative, and in what way. Cropley distinguishes between social radical and social orthodox creativity, where the radical crosses the boundaries of what is liked and accepted, and the orthodox stays within the social norms.

The best environment for developing creativity has as a decisive factor that the characteristics of the area and the individual are adapted to each other. This is difficult to achieve in a group context where everyone is different. The way teachers view creative and eccentric pupils is also different and affects the environment in which pupils develop their creativity (Cropley, 2006).

Several researchers have pointed to the benefits of developing creativity in groups. Collective brainstorming can provide more solutions than when one must come up with solutions alone. In classroom situations, however, group activities can also inhibit creativity. Cropley points to many reasons for this, including that students are afraid of negative reactions to their ideas, that students reduce their efforts and leave everything to the group, that one student blocks other students and that one does not want to deviate from the ideas that already exist in the group (Cropley, 2006). In a group context, comparing individual creative work and the pressure from feedback or assessment from the teacher can inhibit development. It can undermine the experimentation necessary for creative expression. When students learn that they will not be able to achieve a certain level, they may stop trying, show unwanted behaviour and avoid asking for help (Beghetto & Kaufman, 2014).

Teachers and Creativity

The understanding of the term 'creativity' in educational practice is not the same for all teachers. What is considered creative for them is different from what they consider creative in their students. That is the result of a limited study in one Norwegian county, which can indicate how it might be perceived in the whole of Norway. Those teachers

understand their students' creativity as getting an idea, being spontaneous without inhibitions and having imagination, regardless of the context in which it occurs. One's own creativity, on the other hand, is perceived as breaking habits, usefulness, passion for the subject and professional knowledge (Olafsson, 2020). Part of the confusion surrounding the concept of creativity becomes clear in what Beghetto & Kaufman (2014) call the difference between everyday creativity and expert-level creativity in their *Four C Model of Creativity*, and the different demands placed on the creativity levels. They distinguish between individual (mini- and little-c) and socio-cultural (Pro- and BIG-C) levels of creativity (Olafsson, 2020). The first two levels mainly deal with the subjective part. Mini-c is mostly about learning, and little-c is about everyday creativity where you use your own experience to solve simple tasks. Here the innovative part means that it is new for the individual. The other two levels deal with objective creativity, where recognition from the field and assessment of the innovative and purposeful are fundamental. Pro-C is about expert creativity and BIG-C is about genius creativity, the highest one can achieve. The first two levels of creativity are relevant in school or training contexts, while the other two are relevant in the art and professional fields. Although mini- and little-c are about the development of individual creativity, they are influenced by the socio-cultural environment in the class. The social component in Amabile's component theory (Amabile, 2012) refers to this.

Beghetto and Kaufman (2014) show that the learning environment is one of the most important factors for the development of creativity, both positive and negative and that it can be perceived differently for each student. The teacher's feedback to the student is decisive in the development process. This feedback should be different from student to student and adapted to the personal characteristics and creative potential of each student. In addition, they point out that developing creativity generally takes time, and thus requires perseverance and patience from the pupils. Art and craft teachers who took part in a research project also experienced this (Olafsson, 2020). Influencing external motivation may be appropriate to help the students to continue and be steadfast in a difficult process, but will not particularly contribute to creativity itself, which is most affected by internal motivation (Beghetto & Kaufman, 2014, p. 62).

Cropley (2006) also refers to some social guidelines for creativity-facilitating instruction. He distinguishes between the way the teacher sees themself in the group, the area (socio-cultural), instructional principle and evaluation/feedback. The (class) management is decisive for creating an environment that promotes creativity. In an age where children and young people are exposed to the strong forces of conformity from (social) media, parents and classmates, a leader who can create a safe environment for pupils to dare to stand out and dare to fail is necessary to develop creativity. Cropley (2006) further points out that one can distinguish between creativity as an aspect of spiritual aesthetic life, part of mental health, and creativity in the form of human capital in society, as an important part of innovation in the business world. It is the last one that is most relevant concerning *21st-century skills* (Lemke, 2002).

Creativity in a Teaching System

In an interview, Dr. Zhao (Richardson et al., 2017) points to the teaching system as an important factor in the development of creativity. He believes that many teaching situations reward conformity and adaptation to what is recognized as the majority view and thus inhibit creativity. He distinguishes between three important facets of creativity, the first of which is cognitive ability. The other is a willingness to take chances, tolerate uncertainty and dare to be vulnerable, which he calls an attitude, and not a personal trait. The third facet is the social value of creativity. Creativity is as said a relevant topic in school contexts today. But education plans should include more of what this entails or how one can become (more) creative.

Teaching and Measuring Creativity

Although there is some consensus about the importance of creativity in this day and age, there is less clarity about how to understand and achieve this, and also how to measure any improvement in creativity (Stana, 2017). Even subject plans in art education say little about what this entails or how one can become (more) creative. Nor do they say how to measure it. Yet there are different methods to measure creativity. All have a different starting point and can therefore be seen as complementary to each other. The difference could be the focus on the product, the people or collaboration.

The five-dimensional model from *The Centre for Real-World Learni*ngs by Bill Lucas is a model created for tracking and developing creativity in schools by using assessment rubrics. Two clear benefits of assessing progress in the development of creativity by using this model are: "1) teachers are able to be more precise and confident in developing young people's creativity, and 2) learners are better able to understand what it is to be creative (and to use this understanding to record evidence of their progress)" (Lucas et al., 2013, p. 4). The assessment tool is mainly intended to strengthen teachers' confidence in teaching and assessing creativity, and to help students better understand formative feedback to improve their creativity.

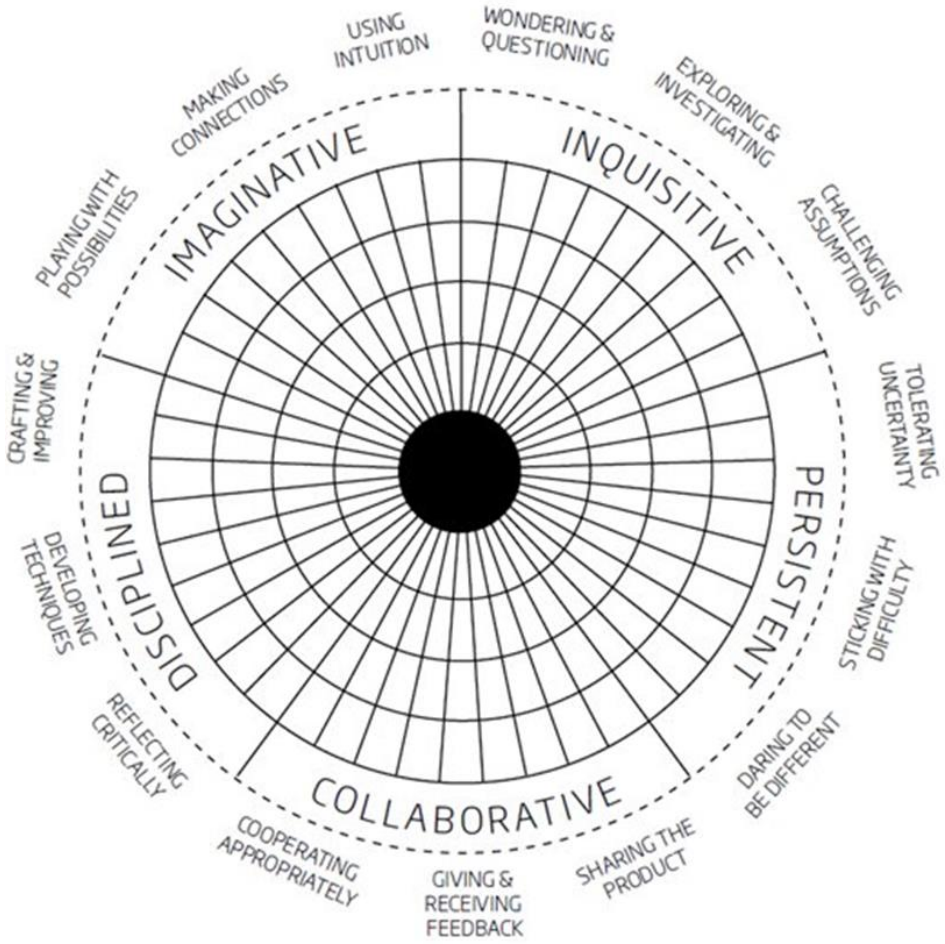


Figure 1, The Centre for Real-World Learnings Five-dimensional model of creativity (Lucas et al., 2014).

Figure 2, Key to the 5-dimensional model (Lucas et al., 2014).

Lutnæs (2018) has investigated the assessment repertoire of Norwegian art and craft teachers by using the model with the 5 assessment rubrics. What is striking is that several sections remain almost empty or completely empty. *Intuition*, *Wondering and Questioning*, *Challenging Assumptions* and *Tolerating Uncertainty* are not registered. It indicates that art teachers do not see all the concepts of creativity, or at least are not assessing them.

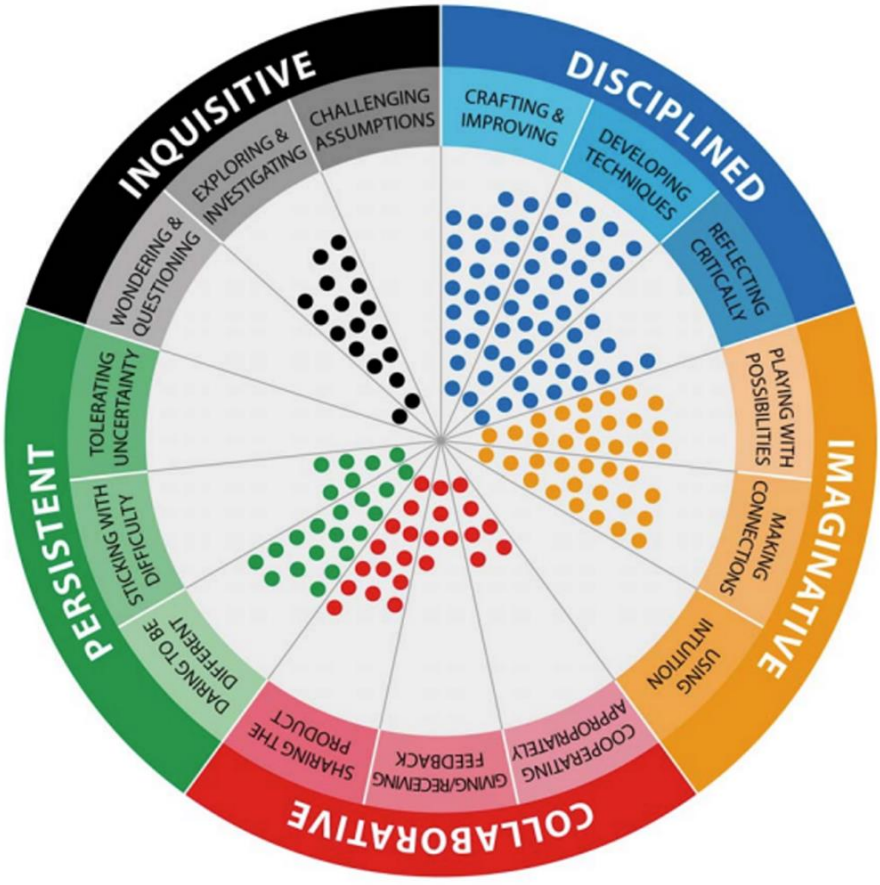


Figure 3, Creative habits traced in assessment rubrics from 27 schools across the counties of Norway (Lutnæs, 2018).

The model clearly shows that craft and the technical part of art are central among the participating schools. Understandably, it is easier to judge a craft's work on technical skills than to measure how one tolerates uncertainty or uses one's intuition.
The key finding of Lutnæs' study is that the sub-habits not recorded in this research are important for cultivating responsible creativity. What impact will this have on Norwegian children in terms of developing all components of creativity?

Another way to measure creativity mentioned by Stana (2017) in her article about measuring creativity is the *Taxonomy of Creative Design* by Peter Nilsson (Nilsson, 2011). In his paper *The Challenge of Innovation* (Nilsson, 2011), he argues that the core of creative work should be the skills one needs to learn or the knowledge one will gain. By setting helpful boundaries or restrictions in the creative process, one can promote innovation. The student will know where to focus. It can also help to see the level of creativity and know what the next step will be as shown in the taxonomy.

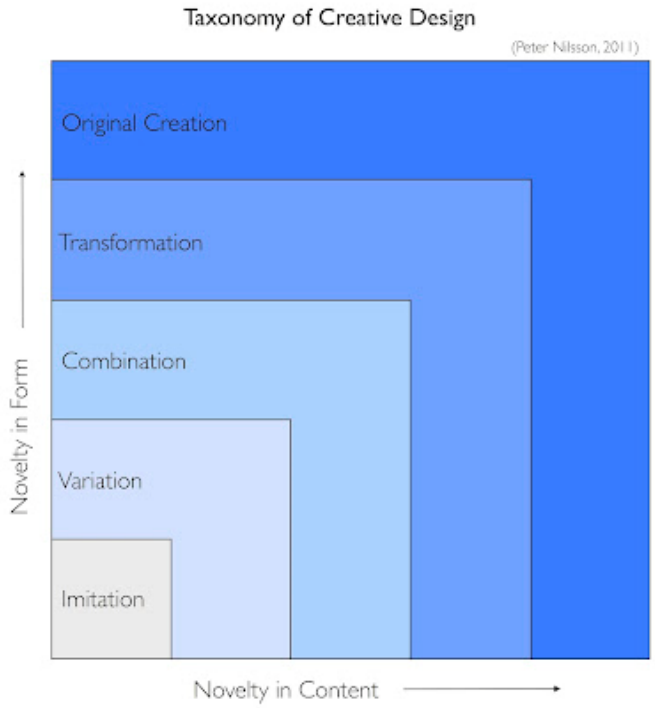


Figure 4, Taxonomy of Creative Design (Nilsson, 2011).

Although Stana demonstrates that there are different methods to measure different types of creativity, focusing on different issues, I will highlight this taxonomy because of

the different levels of creativity that become visible in the product. It assesses the creative content to different concrete levels of imitation, variation, combination, transformation and new creation, with on the different axes, novelty in form and novelty in content. The taxonomy makes it easier to recognize progress from one level to another. But Stana points to two disadvantages: it does not measure the students' commitment, challenges and experiences of the creating process. And secondly, it does not measure the product's value, pertinence or efficiency. That makes the taxonomy more of a planning tool for different types of creative assignments than a measuring tool, Stana (2017) argues.

PRODUCT: Criteria for creative outcomes				
ORIGINAL			FIT-FOR-PURPOSE	
PERSON: Perspectives on who does the original thinking				
CHILD ENGAGED BY EDUCATOR'S CREATIVITY		CHILD'S CREATIVE DOING		CHILD'S CREATIVE THINKING
PLACE: Elements of an enabling environment				
RESOURCES		COMMUNICATION		SOCIO-EMOTIONAL CLIMATE
Intentional provocations		Intentional learning conversations		Stress and pressure free environment
Stimulating materials		Hearing and valuing children's ideas		Non-prescriptive
Adequate materials for everyone		Open inquiry questioning		Non-judgemental
Time for creative exploration		Facilitating dialogic conversations		Allowed to make mistakes
PROCESS: Characteristics of children's creative thinking				
AGENCY	**B**EING CURIOUS	**C**ONNECTING	**D**ARING	**E**XPERIMENTING
Displaying self-determination	Questioning	Making connections	Willing to be different	Trying out new ideas
Finding relevance and personal meaning	Wondering	Seeing patterns in ideas	Persisting when things get difficult	Playing with possibilities
Having a purpose	Imagining	Reflecting on what is and what could be	Learning from failure (resilience)	Investigating
Acting with autonomy	Exploring	Sharing with others	Tolerating uncertainty	Tinkering and adapting ideas
Demonstrating personal choice and freedom	Discovering	Combining ideas to form something new	Challenging assumptions	Using materials differently
Choosing to adjust and be agile	Engaging in "what if" thinking	Seeing different points of view	Putting ideas into action	Solving problems

Figure 5, The 'A' to 'E' of Creativity: A Framework for Young Children's Creativity (Murcia et al., 2020).

The A to E of Creativity Framework “will support educators to make creativity more explicit in their practice and to enhance the identification and development of creativity in learning contexts” (Fielding & Murcia, 2022, p. 1400). It is based on the *4P Creativity Analysis* of Rhodes (1961) in which *product, person*, *process* and *press* from the outset. The word “press” is replaced by “place” to make it more suitable for teaching situations. The purpose of the framework is to synthesize the factors that enable and characterize young children's development of creativity within the classroom context. The characteristics mentioned in the Process, in D(aring) and E(xperimenting), emerge from the personal qualities of taking risks, learning from mistakes and trying out new things. These are very relevant characteristics and personal qualities for my project.

Domain-specific Knowledge and Creativity

Amabile (2012) points to knowledge, technical skills, expertise and intelligence when arguing about domain-specific knowledge. Expertise on how to assess the quality of possible creative responses is also included here. In a possible connection between digital technology and developing creativity, the skills in using digital tools can be seen as domain-specific knowledge. The problem with digital skills is the fact that they are developing so quickly that it is almost impossible to keep up. The rapid improvements in programming require continuous updating of skills and knowledge. However, knowledge about analogue artmaking and painting skills is also relevant domain-specific knowledge in this case. Rhodes (1961) places domain-specific knowledge in the 'P' of the creative person as one of the four P’s in his creativity theory. He refers to intellect, personality, temperament, habits, attitude, and more.

Some publications have been written about the relationship between developing creativity and digital technology. They suggest that digital technologies can support the development of creativity, but the innovation of digital applications is progressing faster than scientific research into the relationship of this technology with creativity development can keep up (Fielding & Murcia, 2022). More and more research is being conducted into the connection between creativity and digital technology in children in preschool age, but less into the effects of this in primary and secondary education (Fielding

& Murcia, 2022). Unfortunately, I have been unable to find similar research in voluntary art education.

Creative Risk

Although curricula in primary and secondary schools in Norway, and perhaps in other countries in Western societies, encourage experimentation and exploration to increase creative thinking, they do not necessarily support creative development. Because of the way our education system works, based on tests and comparisons of results, students are learning that there is only one right answer to a question as it might be in mathematics and other school subjects. It would be hard to argue that 1+1 could be 3 instead of 2. In other words, pupils are trained to focus on one right answer, the answer that leads to good results in the test. Because of that, they probably do not learn that there might be more options or different solutions to problems in general, and they will not search for other answers. They have learned to play it safe and avoid risks that could lead to different or wrong answers to any question. They are taught to think the convergent way. As a result, they are not trained to think creatively, and the way education is designed can even hinder the development of creativity (Aboalgasm & Ward, 2015). Because this convergent thinking often starts before art education is taught more seriously by relevant educated teachers in higher grades, it will be difficult to change. This is a very general way to recognize what is happening in (western) education nowadays, but in reality, it is not that black and white. Fortunately, many exceptions show that a different approach to education is possible.

Because creativity is about doing something where you don't know the outcome, that means it's about taking a risk. It also means that being creative can have significant gains and there can be significant losses as well. In essence, you cannot be creative while remaining completely safe (Climer, 2015). Risk can be seen as a possible danger in the way of a real risk. Perceived risk, on the other hand, is about risk where the negative result is not about death or injury, but for example about the possibility of failure in a drawing or painting. Intellectual risk-taking (IRT), a form of perceived risk-taking, is defined as

“engaging in adaptive learning behaviours that place the learner at risk of making mistakes or appearing less competent than others” (Beghetto, 2009).
In the Oxford Learners dictionary (2023) the verb “to risk” is explained as, among other things: "to put something valuable or important in a dangerous situation, where it could be lost or damaged", in other words, to do something even if there is a chance of a bad result. Intellectual risk-taking involves engaging in certain learning behaviours regardless of potential errors or judgment (Beghetto, 2009; Soutter & Clark, 2021).

Rollo May’s book *The Courage to Create* (1976) although dated, conveys an interesting view on the courage necessary for creating from an existentialistic point of view. May mentions that courage is among others about decision making and the commitment to that decision. Courage is not the opposite or absence of fear, but the capacity to continue despite fear, he deepens, referring to thoughts of amongst others Nietzsche and Camus. It is also about knowing what is reasonable in the amount of courage someone shows as a good balance between too little courage which can result in cowardice, and too much courage which can result in exposing themselves to irresponsible risks. May also points to doubt and the commitment to doubt in the creative process. It is not about the absence of doubt, but despite doubt one has the courage to create.
In the *Componential Theory of Creativity* (Amabile, 2012), in the component of cognitive and personal characteristics, lies the ability to work with creative processes. There, Amabile mentions the ability to dare to take risks, as part of the creative skills. It is this skill that I would call the *willingness to take risks*. It relates to the uncertain outcome of the creative act, and the possibility of making mistakes.

As mentioned before, subject plans in schools say little about what creativity entails or how one can become (more) creative. In the overall section, values and principles for basic education, it is stated that the school should allow the pupils to develop creative joy, commitment and the urge to explore, and let them gain experience in seeing possibilities and turning ideas into action (Utdanningsdirektoratet, 2017). Furthermore, it says in the document:

> Children and young people are curious and want to discover and create. The teaching and training must give the pupils rich opportunities to become engaged and develop the urge to explore. The ability to ask questions, explore and experiment is important for in-depth learning. The school must respect and nurture different ways of exploring and creating. The pupils must learn and develop through sensory perceptions and thinking, aesthetic forms of expressions and practical activities (Utdanningsdirektoratet, 2017).

Although it is mentioned that exploration and the ability to experiment are important for deep learning, it is not explicitly mentioned that this involves taking risks. In the new curriculum for primary school (LK20), the word risk is not used in connection with art subjects, nor in the curriculum framework plan for the Schools of Music and Performance (Birkeland et al., 2012). In the US, on the other hand, experimentation is more recognized in education frameworks. It was already mentioned in 2003 alongside *Curiosity* and W*illingness to Take Risks* in the chapter *Inventive Thinking* in the *21st-century Skills* from *EnGauge (Burkhardt, 2003)*. *EnGauge* is a digital framework that helps US schools understand, plan and improve every aspect of using educational technology in the US education system to increase academic achievement. It would appear that the US recognized early on that new skills were needed in the 21st century, at least theoretically, given what the model from 2003 (Figure 6) shows.

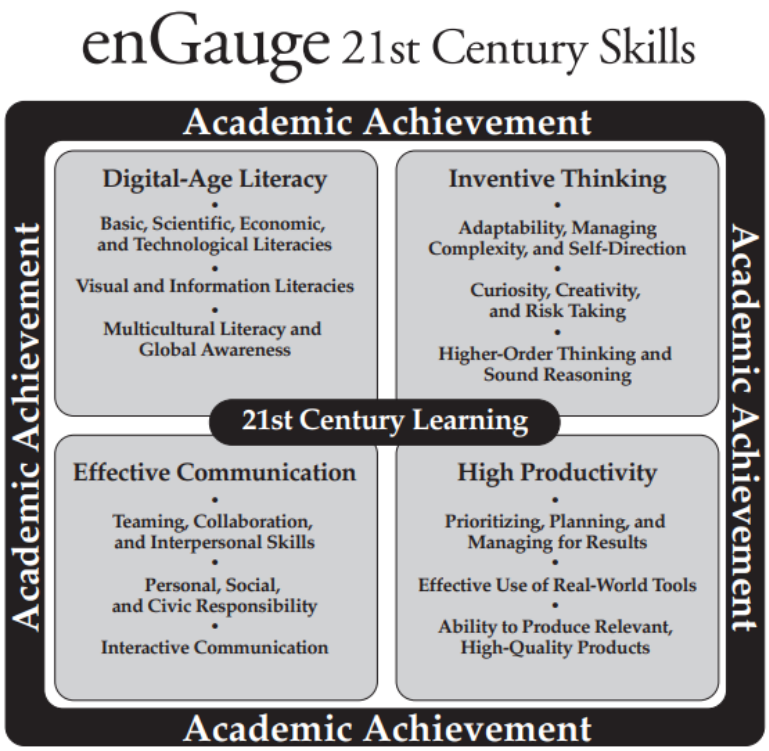


Figure 6, 21st-Century Learning Skills (Burkhardt, 2003).

In the 21st Century Learning Skills visualisation (Burkhardt, 2003) shown in Figure 6, the top right section points to inventive thinking skills. Within this section the second point is about the following three qualities that I believe are important for the development of creative skills:

> **Curiosity**: Do students have a desire to know or a spark of interest that leads to inquiry?
>
> **Creativity**: Are students able to bring something into existence that is original, whether personally (original only to the individual) or culturally (where the work adds significantly to a domain of culture as recognized by experts)?
>
> **Risk Taking**: Are students willing to make mistakes, advocate unconventional or unpopular positions, or tackle challenging problems without obvious solutions, such that their personal growth, integrity, or accomplishments are enhanced? (Burkhardt, 2003, p. 33).

In her master's thesis, *Het prachtige risico van het falen* (*The wonderful risk of failure*, my translation), Vanessa Hudvig (2014) writes about taking risks in the visual arts, and the art teachers' role in art education to encourage this habit. The students often value the "successful" works of art as best, and they are not willing to take risks in their work attitude and prefer to play it "safe". But the creative process becomes clearer from the works that were never finished or were a failure in the eyes of the students, she points out. You can define what you do not want based on what you call "failure". In her thesis, she distinguishes between the artisanal, mimetic way of producing a work of art, and the more artistic imaginative and playful way of creating. She calls the first "school art", where one learns skills and is assessed based on the result of the finished product. The second, the riskier way, is a work process and more difficult for teachers to assess. Hudvig (2014) believes that artists see risk-taking as a criterion for being creative. Conversely, art teachers may actually hinder risk-taking by assessing a student's work on visible and technically good results and not on the creative process. She also points out that the students are more willing to take risks when they feel that they "own" their process and product. In addition, a working area that feels safe is a prerequisite for being willing to take risks, and one must feel in control of being able to achieve the skills needed for working with the different materials.

Raymond Yang (2017), an art teacher and writer, also points to the importance of failing in education. Students learn in school that there is one right answer to a question, and as a consequence, there has become a separation between "right" and "wrong" which is unnatural, especially concerning arts. More and more research shows that making mistakes, learning from them and moving on is good for the perseverance, resilience and problem-solving thinking of students. A safe environment for art education where there is no right or wrong allows for risk-taking.

Beghetto claims in his article *There is no creativity without uncertainty: Dubito Ergo Creo* (2021a) that uncertainty and doubt are natural elements of creative thoughts and actions. He believes that doubt is the first experience we have when we have to think or act creatively, and that people encounter this uncertainty in different ways. The experience of doubt is necessary for creative ideas to arise, but then one must see the doubt

as a form of uncertainty where it is possible to move on to creative action. Whether one wants to experience doubt and uncertainty in this way depends on the characteristics of the personality, and on what Bandura calls *self*-efficacy (Skaalvik & Skaalvik, 2013). Beghetto mentions 3 characteristics that are necessary to act when in doubt. The first is confidence in one's creativity, the second is the perceived value of creativity and the third is willingness to take risks.

Dare to take risks is connected with daring to make mistakes, and making mistakes helps to be able to learn, and to find new ideas, according to Stana, professor of visual arts at OsloMet (Balci, 2022). As a teacher, she is concerned that the art students become brave enough to come up with all ideas, even bad ones. She sees that young people today are less willing to take risks than previous generations. This can have consequences in a society where creativity is becoming an increasingly important property. The fear of making mistakes, perfectionism early in a creative process and too high expectations slow down creativity, she says in an interview (Balci, 2022).

To choose "the risky option of venturing into the unfamiliar, of exploring the ambiguous and the unknown, begins with feeling safe and confident rather than fearful" (Doyle, 2018, p. 47). This refers to a secure base from which risks can be taken and on which one can fall back if an attempt fails. Acceptance of errors as a part of the learning process will support new attempts and encourage self-efficacy.

It is often speculated that risk and creativity go hand in hand. Although this relationship has been described as such in some literature since the 1960s, there is still a lack of clear evidence in this direction, the authors of the article *The Risky Side of Creativity: Domain Specific Risk Taking in Creative Individuals* (Tyagi et al., 2017) believe. The article is about a research project on the relationship between risk and creativity in five different domains: economy, health, recreation, ethics and social area. They concluded that risk does not play an equally large role in the different domains when it comes to creativity. Social risk mostly emerges as an important part of the creative personality, but the authors point to the need for further research into taking risks in a domain-specific context in creativity research. The social risk is about daring to challenge norms (Bonetto et al., 2020), in other words, about daring to stand out from the group you are part of.

A recent research project shows more of the possible connection between taking intellectual risks and creativity (R. A. Beghetto, Karwowski, M., & Reiter-Palmon, R, 2021). Intellectual risk refers to activities that expose a person to opportunities for failure, such as trying to learn new skills and testing new ideas (Pringle, 2020). The research project aimed to find out to what extent willingness to take risks affects the relationship between creative self-confidence and creative behaviour. People with creative self-confidence will not automatically show creative behaviour if they are not sure that the potential disadvantages are greater than the potential advantages. To find out if creative behaviour pays off, you have to take a risk (R. A. Beghetto, Karwowski, M., & Reiter-Palmon, R, 2021). The results of the research were that being willing to take intellectual risks not only strengthens the relationship between creative self-confidence and creative behaviour but that such willingness is also a necessary factor in this relationship. It suggests that one must have self-confidence in one's ability to continue and to take risks when one works with creative challenges and wants to achieve creative achievements. It is not enough to have confidence in your creativity, you also need a willingness to take risks to turn that creative self-confidence into creative behaviour (R. A. Beghetto, Karwowski, M., & Reiter-Palmon, R, 2021). In addition, the creative person should "be willing to let go of all certainties" (Rhodes, 1961, p. 307).

Creative Self-efficacy

Creative performance is amongst others, influenced by self-judgments (Beghetto, 2006). When those self-judgments are especially related to one's creative abilities, it can be seen as creative self-efficacy. It was Albert Bandura who introduced the term *self-efficacy* in 1977 in his article *Self-efficacy: Toward a Unifying Theory of Behavioral Change* (Bandura & Adams, 1977). It refers to one person's expectation, perception, and beliefs to be able to effectively perform a specific action, and it plays an important role in learning from a socio-cognitive perspective. Positive ideas about self-efficacy can relate to more adequate learning strategies in schools. High self-efficacy and the expectations of mastery have consequences for the choice of activity, commitment and perseverance

when things get difficult (Skaalvik & Skaalvik, 2013, p. 153). Creative self-efficacy is different from self-esteem, which is a generalised sense of one's worth, and more domain-specific (Sawyer, 2006, p. 81).

Creative self-efficacy (CSE) is a term from Pamela Tierney and Steven M. Farmer (2002) that is used to describe the impact of self-efficacy on creativity in work situations. Several factors contribute to a positive creative self-efficacy among employees in different jobs. They found that working time, supervisor behaviour and job complexity affect creative self-efficacy beliefs.

Further research on creative self-efficacy has led to "the assertion that creative self-efficacy is related to the effort and intellectual risk-taking necessary for creative expression" (Beghetto, 2006). But not everything is known yet about this relation and this requires more research. Although CSE originally was meant for researching employee creativity in organizational settings where adapting to changing markets demands high creativity, it has more recently correlated with creative performance in schools and creativity in learning contexts (Capron Puozzo & Audrin, 2021). Beghetto (2006) found that students' mastery approach beliefs are positively related to the teacher's feedback on their creative ability. He also found that students with high levels of CSE have higher beliefs in their academic abilities, and are more likely to report higher levels of after-school academics (Beghetto, 2006).
Doyle (2018) points to the possibility that the creative process in the classroom contributes to building creative self-efficacy and that creative self-efficacy and creative personal identity both are general traits of a creative person. Rhodes (1961) does not mention creative self-efficacy but points out that the creative person has "a genuine sense of self and confidence in self" (Rhodes, 1961, p. 307).

Motivation as a Part of Creativity

The students on the Kulturskole often say that their product is "good enough", that they "want it like this" and that it is "artistic" when what they draw, or paint does not match

reality or the plan they had when they started a project. I try to motivate them to continue, experiment more and try new things so they learn more from the assignment and raise the quality of their work. But I see that many people do not have the endurance, motivation or patience needed to challenge themselves to have a good development. Nor do they want to make an effort to train those qualities. This can result in a withdrawal from the Kulturskole because the student has lost motivation.

Motivation can be seen as the driving force that influences behaviour and influences what choices are being made and the degree of perseverance and intensity of behaviour (Skaalvik & Skaalvik, 2013). That also applies to motivation when it comes to creativity. A distinction can be made between intrinsic motivation, which arises from satisfying one's own needs to do something, and extrinsic motivation, which is led by external factors that may be attractive, such as rewards, compliments or grades at school.

When a person is so committed to a self-chosen activity that he forgets everything and everyone around him, we can speak of *Flow.* The concept of Flow comes from the creativity researcher Csikszentmihalyi (1990) and refers to a state of optimal motivation. Conditions for reaching this state are voluntariness and free choice, and the belief that one has sufficient skills to complete the task (Skaalvik & Skaalvik, 2013). The emergence of intrinsic motivation also is related to the perceived fit of skills and task demands, argue also Keller and Bless (2008), when discussing Csikszentmihalyi's *Flow theory* (1990). The relationship between the characteristics of both a person and a task is crucial when one wishes to enhance the level of one's intrinsic motivation. Motivation is also related to persistence; people will work harder if it really matters to them (Doyle, 2018). In Rhodes's (2013) *An Analysis of Creativity*, motivation can be found under *Process* in the *4P Creativity Theory*. In addition to motivation, this also applies to perception, learning, thinking and communication. Interestingly, he mentions the creative process as something that can be learned. Is motivation then something that can be learned?

As Amabile (2012) amongst others has indicated, it is intrinsic task motivation, in combination with domain-relevant skills, creativity-relevant processes and the social environment that are an important pillar of creative behaviour and thinking skills. Amabile

uses the word *passion* when explaining task motivation as one of the components of her theory. It is about a task being "interesting, involving, personally challenging or satisfying" (Amabile, 2012). Intrinsic motivation is central in this theory, noting that extrinsic motivation can undermine intrinsic motivation and thus also creativity. Enjoying a task because of own interests stimulates creativity while any form of reward, such as a result at school, hinders creativity. One might therefore think that a Kulturskole is the perfect place to demonstrate creative behaviour because no assessment is given, but that is not the case in my groups.

Not everyone agrees with Amabile's position that extrinsic motivation can hinder the development of creativity. Eisenberger and Shanock (2003) point to contrasting results in their article on motivation and creativity and explain the different outcomes of different worldviews of human nature. They found evidence to suggest that when a person believes in obtaining a reward for creativity, he or she will become more creative. Rewards can also increase intrinsic motivation through increased perceived self-determination and perceived competence. Moreover, they discovered that extremely high intrinsic motivation does not necessarily guarantee creativity. The difference in motivation is caused by the fact that the action or assignment is conceived creatively or conventionally. Knowing that an action that can lead to a reward requires creative performance will increase creativity. In contrast, Beghetto and Kaufman (2014) argue that in school classes, focusing on external motivation to continue or complete an assignment may help, but not develop more creative outcomes (Beghetto & Kaufman, 2014).

As different opinions on the concept of motivation depending on the perspective show, there is a need for more research. But all the research that has been done suggests the importance of motivation in behaviour in general and in creative behaviour in particular.

3.3 Norwegian Schools of Music and Performing Arts

Norwegian Schools of Music and Performing Arts (hereinafter referred to as *Kulturskole* which is the Norwegian name) are owned and driven by the municipalities, as a mandatory part of municipal educational services. Children and youth, until 18 years old, can take private or group lessons in various art disciplines, as a leisure activity. Although not completely free, education is subsidized by the government and should be financially accessible to all. That is unfortunately not always the case. The municipality can largely determine the art education offering itself, possibly in collaboration with other municipalities (*Kulturskolen*, 2022). This results in different prices, different quality, and differences in focus on the different art disciplines in each municipality, largely depending on the vision and the art discipline that forms the background of the rector of the Kulturskole.

The Kulturskole emerged from the former music schools and has been expanded to include various subjects including dance, theatre, creative writing and visual arts. The English name *School for Music and Performing Arts* still refers to the apparently most important subject of music and creates a curious separation between *music* and *performing arts*. This separation seems to indicate that music is not performance art. In my opinion, this is incorrect Because music education is largely provided individually there are more music teachers employed than teachers in the other subjects, which are taught in groups. That means that a minority of teachers represent the majority of the students, which can result in a negative democratic effect.

The Curriculum Framework

When I started in 2015, there was no curriculum framework, and I was completely free to create content for the subject. In 2016, the *Norwegian Council of Schools of Music and Performing Arts* published a framework plan, which was adopted in 2017 in the municipality I work in. *The Norwegian Council of Schools of Music and Performing Arts* is an interest and development organization that works to promote quality in art education and culture for children, young people and adults based on the municipal Schools of

music and performing arts (*Kulturskolen*, 2022). It is a Framework plan by which the municipality that adopted it undertakes to follow the set guidelines. In practice, this seems to work differently, and the municipal budget determines the quality of the Kulturskole and not the document guidelines. The framework plan has the subtitle *Diversity and Deeper Understanding* and is divided into 4 chapters, starting with an overarching part over 2 chapters, about the values and the mission of the school and principles and guidelines for the operation of the school. Chapter 3 describes the professional and pedagogical content of the distinctive art disciplines of music, dance, creative writing, theatre and visual arts, and chapter 4 deals with quality assurance. The subject plans are open and broadly formulated so that individual interpretation from the teachers practically determines the content of the subject.

Looking at the curriculum framework of the *Norwegian Schools of Music and Performing Arts* the word *experimentation* or *to experiment,* appears eight times in the 117-page document. In Chapter 2 – *Principles and Guidelines for Schools of Music and Performing Arts*: "Students should be given the opportunity to wonder and experiment" (Birkeland et al., 2012, p. 13). In the part of *Visual Arts*, *experimentation* or *to experiment* appears three times in 12 pages. The word *patience*, which I think is important in art (education) is only found once in the total framework plan, and that is in the Visual Art part. I find this remarkable because today's children are no longer used to spending a lot of time on anything. They see cute drawings made in TikTok videos that look so easy, but when they find out that it takes a lot of time and effort to learn, it is not fun anymore. Developing patience can be an issue here.

The compulsory educational frameworks in Norway, as well as around the world, embrace creativity on a large scale. The need is recognized by educators, but in the Norwegian educational framework, it is not clear how to increase creativity in both compulsory and voluntary education. *The Norwegian Ministry of Education* has developed a new curriculum for primary and secondary education, *LK20,* which has been compulsory in Norwegian schools since 2019. This curriculum includes parts of the *21st- Century Learning Framework* in the core curriculum section:

1.4 The joy of creating, engagement and the urge to explore. School shall allow the pupils to experience the joy of creating, engagement and the urge to explore, and allow them to experience seeing opportunities and transforming ideas into practical actions (Utdanningsdirektoratet, 2017).

The Visual Arts Subject Learning Wheel in the Kulturskole

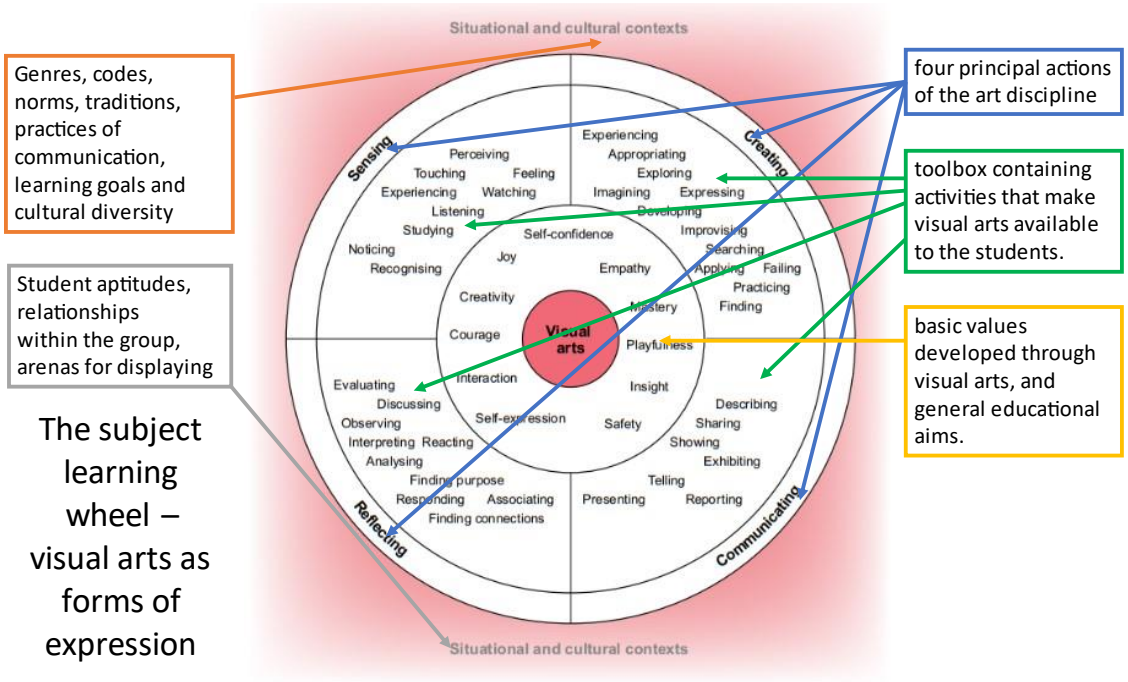


Figure 7, The Visual Arts Subject Learning Wheel with explanation in the coloured boxes, from Curriculum Framework for Schools of Music and Performing Arts (Birkeland et al., 2012).

The Curriculum Framework of the Kulturskole includes subject learning wheels in the 5 subject curricula described in it. The subject learning wheel for visual arts is described as follows in the *Curriculum Framework*:

> The subject learning wheel illustrates the many possibilities and potentials of visual arts as forms of expression. The outer circle lists four principal actions of the art discipline: creating, communicating, reflecting and sensing (…) is explained in the framework. It continues as follows: The next circle describes a toolbox containing activities used in order to make visual arts available to the students. The

> activities are mutually interwoven. By turning the outer circle, new and less obvious combinations of actions and activities are found. The third circle lists basic values that are developed through visual arts training, as well as being general educational aims. The wheel must be understood in light of the different contexts that affect visual arts training. Cultural and situational contexts are therefore placed outside the actual wheel (E. Birkeland, 2012, p. 101).

This subject learning wheel is a transformation of a writing learning wheel from the Norwegian Writing Centre (Evensen, 2010) Appendix nr 1, like all the other subject wheels in the framework plan of the Kulturskole. This means that text writing has been the starting point for music, visual arts and dance subject wheels. Although writing is also a creative activity, there are still many differences between writing, visual arts and music.

Using the *Visual Arts Subject Learning Wheel* in my teaching practice for several years was not a positive experience because I missed some basic keywords in the wheel. I started looking for other frameworks and subject wheels that, in my opinion, would better cover the content of art education. That is how I discovered *Studio Thinking,* with its *8 Habits of Mind* (Sheridan et al., 2022). These habits emerged as a result of a study into art education in the USA. The researchers believe that these are the most important dispositions in artistic thinking and behaviour. They resemble the dispositions of Elliot Eisner, described in his book *The Arts and the Creation of Mind* (2002), in which he argues for the importance of art education for developing essential thinking methods that are necessary for understanding the world in general. Two of the studio habits, *engage and persist*, and to *stretch* are not mentioned in the subject wheel of the Kulturskole, while I believe you cannot be creative without these dispositions. In autumn 2024, the *Framework Plan* for the Kulturskole in Norway will get an update (Hofsli, 2024), and I hope to see some changes in it. But now it is already known that the update will mostly concern other things.

Figure 8, The 8 Studio Habits of Mind from the book Studio Thinking 3, (Sheridan et al., 2022).

4 Research Design and Methodological Frames

This Chapter is about the methodological choices made in this project and their background. It successively includes a schematic visualisation, an introduction to qualitative research, a/r/tography as a methodology, the different methods used in the two cases and how they are analysed.

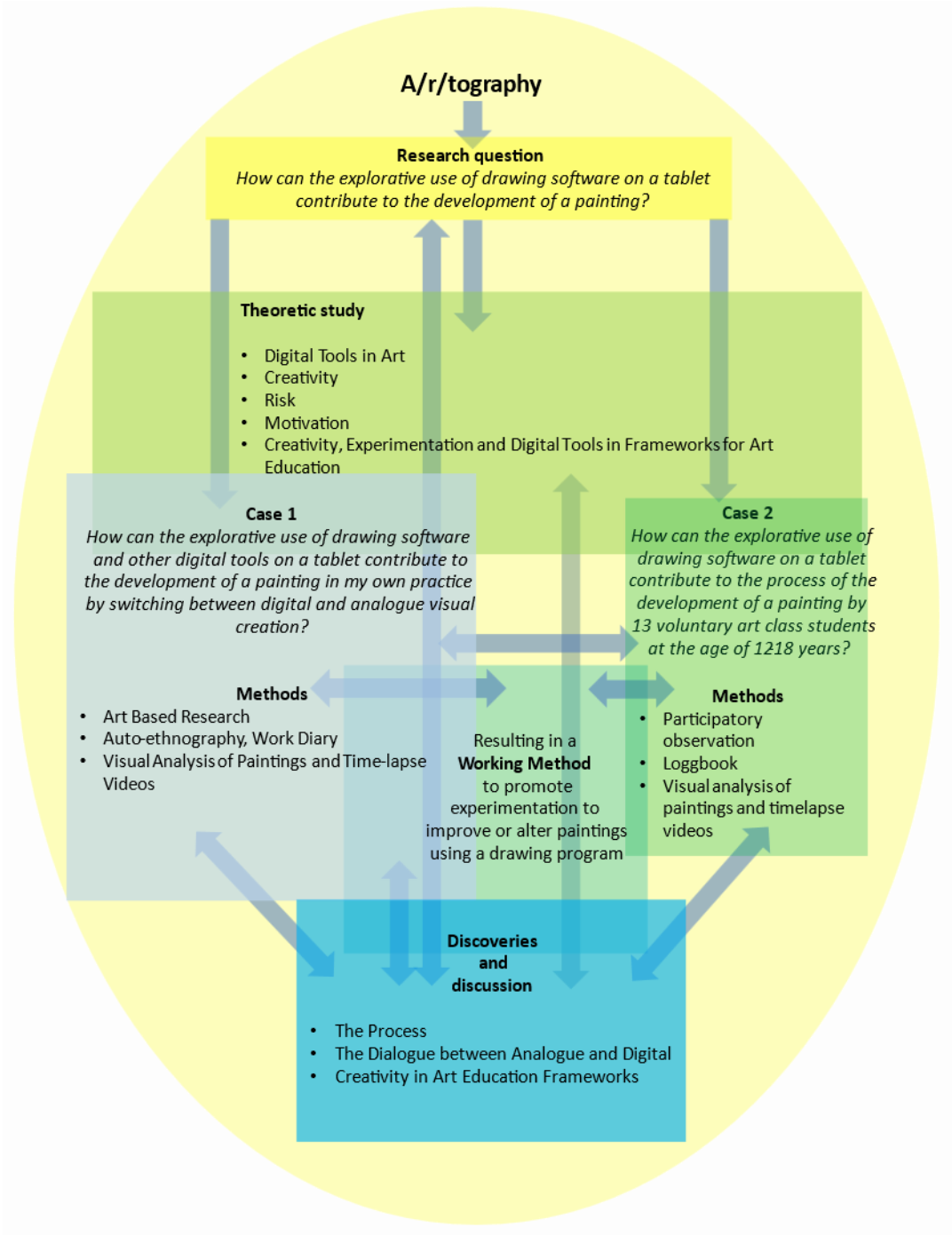


Figure 9, My visualisation of the research design of this project.

Qualitative Research

Qualitative research is suitable for gaining knowledge of the intentions, involvement, and motivation of the informants on a small scale. It provides insight into personal motivations and the influence of other factors on observed phenomena in a specific context. It can be supplemented with quantitative research to create an even more complete picture (Befring, 2015). Art-based research, a qualitative research method through the creation of art, has not always been taken seriously in the academic world, which has traditionally been mostly theoretical. As a result, there is a tendency to explain and justify the importance of such research. Hannula, Suoranta and Vaden believe art-based research is loaded with meaning and intentions and is thus theoretical. Practical is not the opposite of theoretical; theory often arises through practical research (Hannula et al., 2005).

The words “research” and “inquiry” are both applied in this text. Research is the most traditional word in scientific studies and emphasizes the search for an answer. While the word inquiry places more emphasis on the question being asked, and new questions that arise from it. In a/r/tography, inquiry is most common because the aim is not necessarily to get one right answer but rather to gain more knowledge about the process and the new questions that will emerge while working on a project.

This project is an explorative study that involves investigating a little-known phenomenon (Anker, 2020), in this case, the interaction between the analogue and digital creation for developing a painting, and telling about it to generate new meaning and knowledge.

A/r/tography as a Methodological Positioning

This research project is written from an a/r/tographic perspective. A/r/tography is relatively new in the variety of (post-)qualitative art-based research methodologies and can be described as art-based educational research (ABER). The methodology originates from Canada and emerged at the end of the 20th century from the ideas of Rita Irwin, professor and researcher at the University of British Columbia, Vancouver.

A/r/tography can be understood as a process of living inquiry of the world through creating art, teaching art subjects and writing (Springgay et al., 2005). It builds on ideas from phenomenology, philosophy, feminist theories and educational action research (Irwin & Springgay, 2018, p. 163). The word (or the combination of signs) *A/R/T*ography is based on the different perspectives of being an *A*rtist, *R*esearcher, and *T*eacher. The methodology is characterized by its structure as a rhizome, which can resemble an underground root system. The rhizomatic emerges in the complexly connected, branched, and continuously changing inquiry process that a/r/tography is (Irwin & Springgay, 2018). A/r/tography is a methodology with a focus on processes. Irwin (2023) explains a/r/tography on the eponymous homepage of her website:

> To be engaged in the practice of a/r/tography means to inquire into the world through an ongoing process of art making in any artform and writing not separate or illustrative of each other but interconnected and woven through each other to create additional and/or enhanced meanings (Irwin, 2023).

A/r/tographic research, or *inquiry*, means exploring the world through an interwoven interaction between artistic processes, questioning, and writing, to shed light on issues from new angles that create new meanings. Artists, researchers, and teachers, who work with a/r/tography, live a life of inquiry, asking constantly new questions that search for a deeper meaning, where learning is central (Springgay et al., 2005). The three different perspectives which fit together and complement each other in a/r/tography, create "in-between" spaces where new meanings can emerge. A/r/tography will turn abstract methodological theory into practical, embodied and living inquiry (Irwin & Springgay, 2018), which forms an embodied understanding of, and an exchange between art and text, based on the different roles of the artist, researcher and teacher (Springgay et al., 2005).

Aristotle in his time already mentioned three different kinds of "thought": *Theoria, praxis* and *poesis* (knowing, doing, and making). Those three are important to art educators because they can teach about how one can learn from converting ideas into prac-

tice (Irwin, 2018). Similar ideas in a/r/tography are reminiscent of the ideas of experience that Dewey wrote about in *Art as Experience* (1934), which Siegesmund points to in his article on the relationship between Dewey and a/r/tography (Siegesmund, 2012). In his opinion a/r/tography should not only be a personal testimony of the creation of new meanings and points of view, but it must also visualize the experiences of them.

This master project is a (re)search for what can emerge from using digital tools in an experimental process to develop paintings, from the a/r/tographic point of view. Being both an art teacher and painter I experienced the interaction between these roles as supportive and complementary already before starting this project. I have used my own experiences from working on my paintings in my teaching, but conversely, I have also used my teaching experience to improve my paintings. Pupils' solutions in art assignments brought me new insights into dealing with certain problems and new ways to apply them in my own work. I experienced this combination as very fruitful and inseparable long before I became familiar with a/r/tography. The new part is the research role. This means becoming aware of what is happening in the living interaction between those three roles, what emerges in the spaces in between them, how they influence and enrich each other, and finding words to describe my experiences and link them to theories. As a consequence, I need to be open for unknown things that can appear, by asking questions instead of looking for answers.

The problem area, *the digital that interacts with the analogue in the development of traditional painting*, creates the connection between the different perspectives and inquires what happens in an intuitive process while working in the collaboration between visual analogue and digital creation. What can be learned from what emerges in this process? What new questions will arise from both my own practice and teaching context?

Through regular use and experimentation with a drawing program, through trial and error, I taught myself to a reasonable level how to use this application in a creative, and not just random, way. Although surprising results can arise accidentally by using the tools in the “wrong” way, I felt the need to master the functions in the drawing program

well to conclude the process. Moreover, learning the drawing program went hand in hand with the students; we shared the features we discovered in the drawing application and built on each other's discoveries and new knowledge that emerged.

4.1 Case 1: Methods and Implementation

Painting and Working with Digital Experimentation

The goal of this project was to research to what extent the use of digital tools and aids can play a role in increasing experimental behaviour to enhance creativity in painting processes. One part was to see what occurs in my own painting processes and therefore to enhance and develop my oil paintings in a new direction, I have used the interaction between digital and analogue image creation.

I edited the photos of my older paintings digitally on the tablet and then painted the changes into the painting. Thereafter, I took another photo and continued the same procedure until the painting was completed. I intended to find out if this method could be effective for more diverse visual experimentations in new directions with the aim of developing my paintings. To know what and where in the composition to paint, and how to do so, I used the drawing program on the tablet as a tool. I took pictures of old paintings to try out different digital interventions in the existing paintings. At the same time, I was learning the drawing program. Not knowing all the functions in the program when I started this project, several coincidences happened, leading to surprising outcomes I might never have come to on my own. Such coincidences are a result of both experimenting with the different functions and the attempt to learn the drawing program.

In addition to the drawing program and the functions of the tablet, I inserted photos from the internet and made them part of a new composition. I used projection and tracing to speed up the process, and I imported images from *Google Street View* and *Google Maps*. Additionally, I used image generation with artificial intelligence. AI was used to create reference material and to experiment with different outcomes of changing the painting based on textual clues. The entire digital process was automatically captured

by the *Procreate* software, making it visual as a time-lapse video. This made it possible to properly analyse the experimental process afterwards.

Autoethnography

Autoethnography is a method and a practical approach in the qualitative research sciences. The term comes from the three words *auto*, *ethno* and *graphy*. *Auto* comes from the Greek word *autos* which means self and refers to oneself and one's own experiences. *Ethno* comes from the Greek word 'ethnos', relates to the word *people,* and refers to the cultural, social, or political context one places oneself in. *Graphy* comes from the Greek word 'graphein' which means to write, and refers to what is drawn down, or expressed in a wider sense (Adams et al., 2015, p. 46).

> When we do autoethnography, we look inward —into our identities, thoughts, feelings, and experiences— and outward —into our relationships, communities, and cultures. As researchers, we try to take readers/audiences through the same process, back and forth, inside and out (Adams et al., 2015, p. 46).

Because personal experiences are the starting point in autoethnographic research, the researcher is both an informant and a researcher in the research process (Karlsson et al., 2021).

From the year 2000 until now, there has been an explosive increase in the number of autoethnographies (Bochner & Ellis, 2022). It may indicate a need for a different type of research and formulation in research that focuses on self-understanding to achieve more understanding of the world in general. As a result of greater understanding, one can become a morally better person (Bochner & Ellis, 2022).

I have used autoethnography in this project to record what happened and what I thought, felt, and did when I collected inspirational images, worked digitally with images, or painted. It is easy to say that I worked intuitively; it might be a way to avoid getting into it, to find the right words for it, which as I have experienced this, is not easy.

It was like entering a new landscape to challenge myself and move away from familiar paths.

Although autoethnography is embraced by a lot of qualitative researchers, there are some critics. It is attacked for being “self-indulgent, solipsistic and narcissistic”. Because of an insufficient understanding of the purposes of the methodology, and not enough skills in the writing process, the academic value of the texts can be little (Etherington, 2004).

Digital Work Diary

The autoethnographic texts are written down in my digital work diary, together with other relevant information about the process and the photos that show the results. Between the various digital sessions and painting sessions, I recorded what happened to become aware of the choices I made and what results they had on the development of the paintings. The notes I wrote were very diverse. They contained emotions, reflections, personal memories, and facts about the subject I was working with. It became a personal document, reporting frustration, joy, and experiences while working on my paintings. It has become an uncensored reflective document where I could write down everything without any hindrance or shame.

The autoethnographic work diary is the result of a reflective process and is about becoming and emerging, based on making choices to change and develop our identity. (Etherington, 2004). There is no one right way to work with reflective research, but the most important part of it is what things seem to be and how they seem to be at that time to the reflective researcher. Etherington suggests four different approaches of analysis to use to understand the narratives made in the research process. One of them is the content analysis, which is in my case most suitable for the analysis because I want to understand what happened, and what can be read between the lines of the descriptive notes made in the process. Content analyses treat the reflective content as *representing* reality, unlike narrative analysis which treats the stories as *constituting* the social reality of the narrators (Etherington, 2004, p. 81)

Analysis Methods

Different methods provide information from different perspectives, illuminating different elements of the research question. These different methods each provide their own type of information depending on the data material. At the same time, it is difficult to separate the analyses by method because the data material is so intertwined and complements each other. That is the core of an a/r/tographical inquiry.
This requires analysis with a/r/tographic lenses that focus on what emerges in the process and in the in-between of being an artist, researcher and teacher at the same time.

To make my analysis methods visible, I sorted them in a table, putting in the different methods used in this project. The analysis consists of two parts, with both my own work (Case 1) and the student assignment (Case 2) reflecting on what was thought, and what was done and made while working with possible changes to a painting in the drawing program on the tablet. The analysis methods are abductive because they are coloured by the theoretical study that preceded them.

How can the explorative use of drawing software on a tablet contribute to developing a painting?				
Case	**Participants**	**Data**	**Focus of analysis**	**Abductive analysis**
1	Myself	Work diary	Reflections, what did I think?	**Thematical text analysis** Reflections on the process of working with both tablet and paint to develop a painting
		Timelapse videos	How is experimentation done in the videos?	**Visual analysis** based on a variety of experimentations, the number of actions used in Procreate, and what kind of changes are made.
		Paintings	How did the experiments change the painting?	**Visual analysis.** What kind of visual result has finally emerged
2	13 students aged 13-18 from voluntary art education	Notes from the participatory observation	Observation of how the students experimented. What did they do?	**Thematical text analysis:** My experiences about how the students worked with Procreate. How did they influence each other? What kind of help did they need? Did they share ideas? Did they alter their painting?
		Timelapse videos	Experimentation processes, a variety of options to alter the painting. What did they make?	**Visual analysis** based on actions used in Procreate, and what kind of changes are made.
		Comments from students after the project	Made the drawing program easier to experiment with? What did they think?	**Thematical text analysis** of the notes written down of the comments they gave in a short evaluation after the project
Frameworks for (art) education		Visual subject content in different frameworks	What qualities are included to train experimentation skills and creativity?	**Text analysis** based on different models of qualities involved in creativity development.

Figure 10, Table of the Analysis Methods, made by me.

Thematical Coding of the Work Diary

The autoethnographic texts about my reflections on the digital and analogue work have been analysed by thematical coding by colour, thus creating categories from repeating themes that emerged from the text. After I collated similar types of information twelve different categories emerged.

• Criticism of myself • Positive about myself Inequality, difference and reflections about my life • Aversion, resistance • Play and paint	1. Reflections on my personal feelings (what I felt)
• Difference between digital and analogue • Composition • Actions in the process	2. Reflections on the actions involved in the digital and painting processes (what I did and how I did that)
• Landscape • Information about the portraits used in the paintings • Theory	3. Reflections on the painted subjects (what it was about)
• Teacher relevant things	4. Reflections on teacher-relevant things (what is the relation to teaching)

Figure 11, Visualisation of the thematic categories.

They could be placed in the four following overarching categories: 1. Reflections on my personal feelings (what I felt), 2. Reflections on the actions involved in the painting processes (what I did and how I did that), 3. Reflections on the painted subjects (what it was about and why), and 4. Reflections on teacher-relevant things (what the relationship is to teaching and learning). In Chapter 6, I will make a connection between what I have found and the relevant theory, as an abductive way of analysing, using both theoretical and empirical data (Anker, 2020).

As an example, I present two excerpts from my work diary with the coded text and accompanying photos of the paintings in the diary, starting with a passage I wrote on October 7th, 2022.

I have started painting on the blue painting. A girl with a traditional costume from Walcheren in the Netherlands. I don't know much about traditional costumes from the Netherlands, except that there are many different types and that they are almost no longer in use. They have a completely different function than in Norway. I used the tablet to put her in a place that fit in the painting that was there before. Tried mirroring it and tried out different sizes of the portrait. While I painted I tried to think about what happened. And very often I balance on a thin line, where with the slightest resistance I will give up. I'm not afraid to destroy, but perhaps more to disappoint myself: "I'm not good at this either".

Figure 12, Screen dump of the Blue Painting on the tablet, with the transparently inserted photo of the girl from Walcheren, with drawn contours.

But sometimes things go well, and it's fun to paint. I have not used a projector because I had enough references on the painting to be able to draw it from a

photo on Procreate so that it still goes quickly. I haven't thought about what I want to paint in advance that is about the difference in this image. I will go through all the portraits I have collected and choose from there what might be suitable (Work diary, p. 4).

On the 21st of March 2023, I wrote:

> When I work on this painting (The Ukraine Painting), I feel like I'm playing, maybe because I'm not sure if this should be part of the project. Then I am much freer. I make slightly different choices than I did in Procreate, but that's okay. No requirements, only experimentation and play (work diary, p. 49).

Figure 13, Photo of The Ukraine Painting, after painting in the first changes.

Visual Analysis

To gather information about what actions were taken in the digital experimentation process, I collected, merged, and carefully viewed all the time-lapse videos from the

process of each painting. They were visually analysed based on what kind of actions were taken in the digital process to modify the painting, how often they were used, and how diverse they were. These results were placed in a table to get a clear overview (Appendix nr. 3).

The paintings resulting from the change process were analysed in short texts, with all salient points noted. I also looked at the extent to which the result would have been possible without the digital experiments and whether this use is visible in the final painting (Appendix nr. 4).

My paintings provide a visual response to what emerged in the process. The paintings only show the result at the end of the process, while the time-lapse videos show the process in which all actions taken are visible. Including all actions that failed or have been deleted again. The autoethnographic log is a record of my experiences and reflections during that process. About what I discovered and learned, what can be used from a teacher's perspective and how to understand the student's perspective.

4.2 Case 2: Methods and Implementation

To see if students would benefit from the digital experimentation method, they went through much the same process as I did. But instead of using old paintings to paint over, they started by creating an acrylic painting based on an assignment text on the subject of landscape. Afterwards, they should try digitally to change or further develop their painting by experimenting on a tablet. Ultimately, they could paint the chosen changes into their painting if they wanted. I was interested in the experiences the students had with digital experimentation and whether this would benefit their creative processes. Would they make more exciting choices, experiment more and take more creative risks, when they could see straight away how it could turn out, and could easily reverse this, without destroying their painting? To discover whether this was correct, I could look back at the process and analyse all the steps in the time-lapse videos.

The Student Assignment

To start the project, the students needed to have a painting to develop or change. Therefore, 13 students in the three oldest groups at the Kulturskole, ranging in age between 13 and 18 years, worked on a painting assignment about landscapes (Appendix nr. 2). All participating students received a number that also referred to their group to guarantee the anonymity of participants. In the different groups, I presented a slightly different angle to the landscape assignment to be painted in acrylic paint. The landscape genre was a consequence of the common theme at the Kulturskole for the summer concert in the local cultural centre, entitled *Musical Landscape*. During the summer concert, the students' landscape paintings were projected on a large screen in the cultural centre. This was to emphasize that the Kulturskole does not only consist of music but that there are also other disciplines. Personally, landscape is not my favourite genre, but it is a good subject to teach about depth, perspective, and proportion in painting. The painted landscapes were the starting point for this research project where the students should experiment with different possibilities to digitally alter or further develop their painting with the help of the drawing software Procreate on the tablet. Before starting this, they had a short workshop (2 hours), to learn the basic functions in the drawing application. Some of the students already used the drawing program at home and could help others in finding solutions in the use of the tools. The students started by taking a photo of their finished landscape painting with the tablet, then followed on with the digital experimentation assignment. The assignment involved creating several digital proposals for possible changes to the analogue painting that would significantly change the painting in terms of colour, content, composition, motif, atmosphere, etc. Because the students did not work as quickly with the painting as I had planned, not all groups were able to complete the digital part before the summer holidays. Some students who wanted to participate in this research project left the school for different reasons. This resulted in fewer participants in this project.

Participatory Observation

Participatory observational research was used as a method to observe what happened while the students were working on the assignment. Participatory observation is a form

of unstructured observation (Kleven & Hjardemaal, 2018). This means that the observation did not proceed according to a structured plan, which created the flexibility to change the focus along the way, if necessary when interesting things arose. That was useful because in processes things can change quickly, and then it is important to adapt to the new situation.

Participatory observation means taking part in the process you are observing, and that means you can influence the process. I had to be aware of this and not steer the process in the direction that suited me best. In addition, observation as a method entails a selective process. This means that I, as an observer, consciously or unconsciously, choose what I want to notice in the observation and log-keeping. This can lead to things being left out (Kleven & Hjardemaal, 2018).

The situation in the art classroom/studio was not any different than otherwise, so I could observe what was happening, without the students being too much influenced by the research situation. This way I could get close to what they were doing, how they experienced it and what the atmosphere was like among the students. Even if I was close to and had direct experiences, those will always be influenced by my views, my impressions, and my feelings. Those personal experiences are allowed to be part of the data material in qualitative research and can provide insight into less obvious aspects of the observation area (Sellerberg & Fangen, 2011).

While I was teaching, I observed what was happening and was interested in how the students communicated with each other, and if that would influence the outcomes. I looked at what kind of changes they made, how big the changes were and what different functions they used on their tablet. If they did not know where to begin, I suggested some examples to get their imagination started, at the risk that they might use them. Some students did that too, and I noted that, but they put their own spin on it. After the lessons, I wrote down what I had observed during three lessons in the three different groups. At the end of the lessons, we had a short conversation in which the students could express what they experienced while working on the experimental assignment on

the tablet. I took notes on what their feedback was in that conversation and while working on the tablet, and how I experienced their creative processes in the digital work. I tried to observe their moods and motivation for the work they were doing. I then watched their experimentation process which was automatically captured in a time-lapse video in the drawing program. I paid special attention to the diversity and unexpected actions in the experimentation process. The observational notes have been documented in a digital logbook, supplemented afterwards with pictures of the student's work for a more complete overview. The observations are written down without interpretation of what has happened, but still from my point of view.

Although I had removed the questionnaire I had originally intended to use, to lower the barrier to participation, not all students from the three different art groups wanted to participate, but they all completed the same assignment. Those who joined the project had to sign a participation form (Appendix nr. 6). The project was registered with the former *NSD*, now *Sikt*, the Norwegian knowledge sector's service provider, but had no further restrictions or security requirements other than anonymisation of both the participants and the location.

Thematical Analysis of the Participatory Observations

The notes from the participant observation, together with the assignment texts of the different groups, were collected in a digital logbook, provided with a date and images of the creative results from that day. After the student project was completed, I sorted and coded the texts according to the theme, and I made a summary of the most important and recurring topics.

Visual Analysis

The time-lapse videos from the students' drawing program were collected in cloud storage and later analysed by sorting by what kind of tools were used, what kind of changes were made, and how big those changes were. They were registered in a table to get a visual overview (Appendix nr. 5). After that I ranked the students into different levels of

experimentation skills based on the amount and size of the digital changes in the painting.

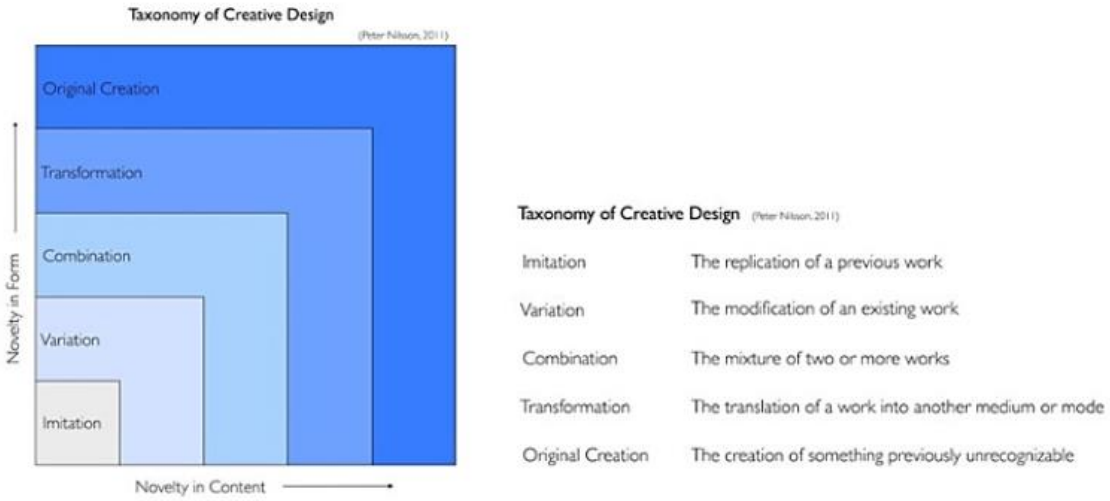


Figure 14, Taxonomy of Creative Design,(Nilsson, 2011).

Finally, I looked at what creative level had been achieved based on Peter Nilsson's (2011) *Taxonomy of Creative Design* and compared that to the results from the table to see if my discoveries matched the taxonomy's creativity level. I investigated whether the level of experimentation that resulted from the number and type of experimentations corresponded to the level in the taxonomy of creative design.

4.3 Considerations of Ethics and Validation

In my digital process (Case 1) I have used some reference photos from different sources on the internet. It is not possible to track all of them and ask for permission for their use in the time-lapse videos. For the use of these photos in the paintings there is no need to ask for permission because the photos have become something new and are hardly recognizable. The reason why I have chosen to show the photos in the time-lapse videos (without the legally necessary permission of the owner or producer) is that being *transparent* about all my actions in this project is an important part of it. The videos are not made with any commercial intention and will only show the process of the dialogue between the digital and the analogue.

Another ethical consideration was how to handle the art groups in which not all students participated. The small research that I conducted at the Kulturskole in three different groups (Case 2) also had to be interesting and educational for the students who had chosen not to participate in the project. They should not feel treated differently than the participants in any way. Those who did participate had to return a signed schedule (Appendix nr. 6) to me, in which the parents (if the students are under 15 years old) and otherwise the students themselves approve to participate in the project. Their anonymity must be guaranteed, and they must be able to withdraw from the study at any time.

The results of my process must be seen in the light of this master thesis' frame. The need for autoethnographic documentation after each digital or painting session made the process artificial and took away any spontaneous and intuitive action. This resulted in decreasing motivation and certain resistance to painting during the project, which was not specifically related to painting, but to the documentation part of it after painting. This gives a different picture of the painting process than normally would be the case.

One could argue for a different approach in this project instead of using a/r/tography as a methodological framework. A constructivist entrance with a hypothesis to test out in participatory action research in my art classes could have been an alternative. But then I might have missed what emerged in the spaces in between the three a/r/tographic perspectives, changing angles from artist to teacher and researcher and back again. I found most answers when not actively looking for them!

To increase the validity of this project I have applied triangulation of methods (Kleven & Hjardemaal, 2018). That means that I have used 3 different methods to approach the research question to get a broader view of it. I have analysed the outcomes from the thematical summaries of all the texts written for this project, both the reflective texts about my work and the observational text from the student assignment. In addition, I performed a visual analysis of all the visual results and finally, I analysed the quantitative elements from the time-lapse videos to see if they could confirm what I experienced from the first analyses.

Finally, a chosen research method can never be completely neutral because the choice of methods is based on prejudices and biases. Choices are placed in social and situated contexts. They reflect something about who we are and what values we have, personally, and in the community, we are part of. But even as the gained knowledge is objective, it is affected by the choices made by the researcher (Deitering, 2017). To minimize the impact of my biases, triangulation of methods can increase the validity of this project.

5 Di(gital) + (An)alogue: Unravelling the Dialogue

In this chapter, I will analyse the empirical data that emerged from this project and look at how the digital experimentation process has played out in my own work, and that of the students. From an a/r/tographic perspective, and speaking metaphorically about a *dialogue*, I will try to unravel the different parts of this dialogue. I want to look at what influenced it, what can be learned from it and what new questions arise.

The title *Di(gital) + (An)alogue = Dialogue, A transparent interaction* refers to the fact that the dialogue is the sum of both and is, therefore, more than just one of them. When it comes to art it is said that it is only the art medium that is different, and from that point of view, the digital is an extension of the older analogue possibilities in art.
The dialogue between digital and analogue is an abstract one, and hard to catch. But it is there, helping the development of a painting in more experimental directions. Although I *am* the dialogue in my own project, because I manage both myself and the project, it is still difficult to control it. What do these two different ways of signal processing tell us? Are they opposite to each other? Can they complement each other or is a combination artificial and of little use?

5.1 Case 1, My Painting Process

My painting project can be divided into different parts. Some of them triggered fear of not having enough skills, some of them pointed me to the importance of motivation in a project, while others offered me surprising new solutions and experimental use of colours and lines which motivated me to continue the project.

Visualising the Process

While working on this project I tried to visualise what I did to know and to understand what happened in the process. I ended up making this graphic representation. It shows both my and the students' processes. The starting point is a painting that is either approximately finished or at a standstill because one does not know how to continue. A

photo of the painting is then taken with a tablet with the aim of discovering different possibilities for continuing the painting. One option is then selected and painted onto the canvas, after which a new photo is taken, and the process is repeated. The total process can contain several loops until no more changes are made and the painting is finished.

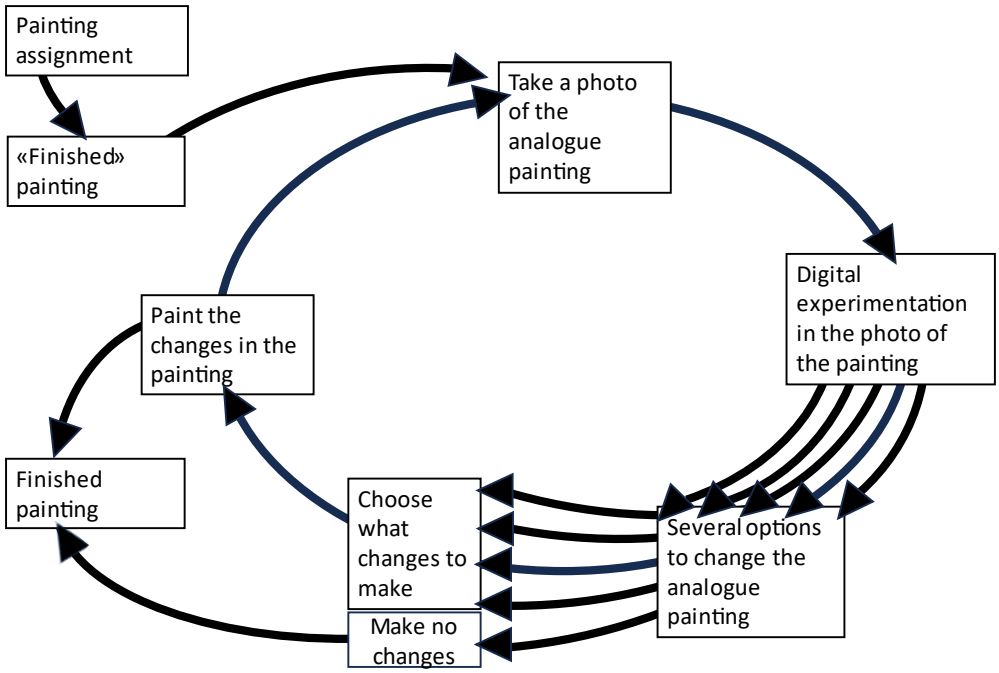


Figure 15, Visualisation of the development process, which can take several loops. Graphic made by me.

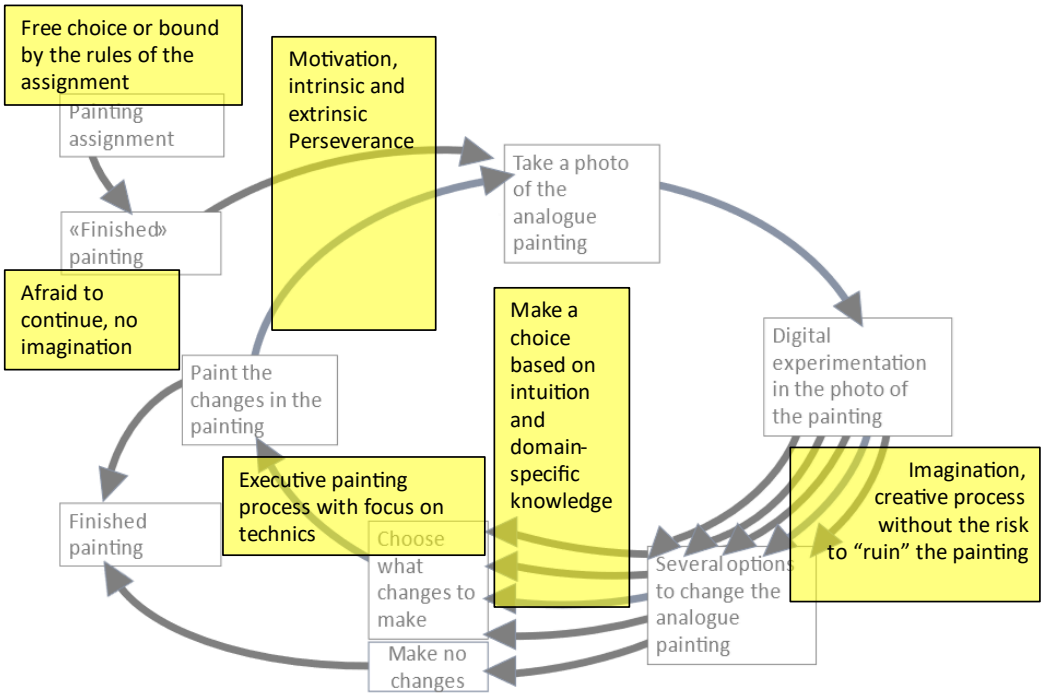


Figure 16, the characteristics of the steps in the process. Graphic made by me.

The painting process with the use of drawing software as a digital tool to develop a painting, is visualised as a loop. It can be seen as a method to increase experimentation in a painting process and perhaps create more interesting results. This process can help to work faster and generate more and more various ideas thus saving time to use in the slow process of oil painting or painting in general. Additionally, one can take more risks in the digital process, because they do not "ruin" the painting if one is not satisfied with the options tried.

The Reflective Process

When rereading my texts in my work diary, I tried to summarize the content in a more manageable and analytical form. The texts clearly showed the challenges I faced when trying to articulate the intuitive process. Because of that, my motivation for both the analogue and the digital work was decreasing. I experienced ambivalence towards painting as a whole and was critical of my work for being too polished and refined in my paintings. I wanted a coarse and rougher aesthetic in my paintings instead of the over-elaborated painting method that I used.

Without wanting it, the work diary about my painting process became very personal. That makes sense when it comes to expressing yourself through painting, but I expected, and hoped that I could have kept it more technical. The theme of “difference” that emerged from “inequality” is linked to myself and my experiences and makes it impossible to ignore the personal. On the other hand, the theme was a good help to structure the process and was necessary to counterbalance all the negative thoughts that had an inhibiting effect on the process.

It was hard to find a way into the digital process, not quite knowing what to do and what to look for. But old paintings helped me to build upon them. It gave me a kind of frame in which I should be creative. Both colours and shapes are given as a starting point and can be used or ignored in a new composition. The paintings that I made during the whole project show an increasing contribution from the digital experiments. In the beginning, the transparency and the composition of the different portraits were the most important, while at the end the variation in experimentation became more clearly visible in the paintings.

The paintings that resulted from this project can be divided into four different categories. A series of portraits, painted over old paintings, the landscape painting that challenged me in the same way as the students in their assignment at the Kulturskole, the Ukraine painting that was not meant to be included in this project and became therefore interesting and finally the paintings made on white canvasses.

Transparency and Composition in Portrait Paintings

To find a way into the project, I started by painting over an old painting. Reusing old canvases, and avoiding white ones, made it easier to insert new portraits and experiment with visual aspects because I could build on something that was already there. It was difficult to explain how I chose the portrait photos to use as a reference. And that also applies to the combination of the portraits. In addition to the theme of “difference”, intuition played a major role here. A few portraits came back more often in various digital proposals to change different paintings. I could not let them go, and they followed

me through the project. I struggled to determine the best composition while also deciding on the most suitable digital alteration for the painting. I found myself feeling frustrated, angry, and irritated by the bold use of colour, and my high expectations for myself hindered my experimental efforts.

By focusing on the transparency of the layers, and visualising the digital feature of reduced opacity, I made it difficult for myself. Normally I just paint over something I have done wrong, but now I could not fail because that does not work using transparency. By painting over it I would also miss the layer underneath and thus the double meaning of transparency in this project, especially present in the first three paintings. They are made in the same way, repeating both portraits, transparency and the use of full opacity in some areas, and are therefore related to each other and presented as a triptych.

Figure 17, Triptych "Difference", the first three paintings in this project with the focus on transparency 3 x 70 cm x 90 cm, acrylic- and oil painting on canvas.

The Ukraine Painting as a Distraction

To occasionally get some distraction from the investigative nature of this project and the struggle to find words for the autoethnographic texts after a painting session, I worked on a painting I call *Ukraine*. That was an older unfinished painting made following the invasion of Russia in Ukraine, but I now used it as a playground to escape from the project. It was no longer about Ukraine, and it should not be a part of the research allowing me to work freer and more relaxed, although still using the interaction between the digital and the analogue. But it had become interesting to take with me because it

became clear what a forced project as this master project does to the creativity, motivation and pleasure of painting. I felt that I worked differently on this painting, knowing no one would see it or judge it. At the same time, it irritated me that I could not achieve this freedom in the other paintings.

Figure 18, The finished Ukraine Painting, 70cm x 90cm, oil on canvas.

The Landscape Painting

When working on the landscape painting, encouraged by the assignment of my students, I experienced a lack of motivation. Although I love being outside and enjoying nature, it never interested me to paint it. Perhaps because I do not have the skills to do so, but I think it is more that I feel I cannot capture this experience on a canvas. It is too big and too emotional for me to translate it into colours on a canvas. However, I took the challenge to try this genre because I wanted to expose myself to the same assignment as my students. They cannot refuse the assignment I gave them, so if my goal is to

experience what they do while working on the project, I need to do the same. That became an uneasy and uncomfortable journey. I struggled with it. Maybe because of the choice of landscape, I wanted to work with. A Christmas-card-snow-theme, a photo of the village where I live in winter. I chose this one because of the special dark sky that looks even darker because of the snow. But like my students, I couldn't change my choice but had to try to make the best of it. I got the hang of it when I thought the landscape was good enough to work with digitally. My son, who was a student in one of the art groups, asked if this was the best I could do. I said it was 'good enough' for what it was intended for, but he didn't think that was a good argument. He felt that I should get a better likeness, with more correct proportions, and that I should challenge myself in the same way that I encourage my students to continue if they think it is good enough but there is room for improvement. It was good that he made me aware of this and interesting for me to discover! I continued to improve the landscape. Landscape as a motif was challenging to work with. The tablet couldn't give me the satisfying experimental mode I had experienced with portraits. I had a lack of motivation to work on the landscape. In practice, motivation turned out to be an important condition for creativity. But maybe not only did I lack motivation, but I also didn't feel safe enough with the landscape motif to experiment with it freely. The process became a search for what the representation of a landscape could look like rather than experimenting with possible changes in landscape painting. The question of what a landscape is became more important than the interaction between the tablet and the painting. Although that was not the intention, it resulted in interesting digital solutions, some of which were painted on transparent plastic sheets as an experiment to analogously represent the digital layered process.

What can a Landscape Painting be?

Inspiration from different artists helped to see how differently a landscape can be expressed. Grayson Perry showed a landscape as a map, and Maiken Stene with her spatial landscapes, opened for new insights.

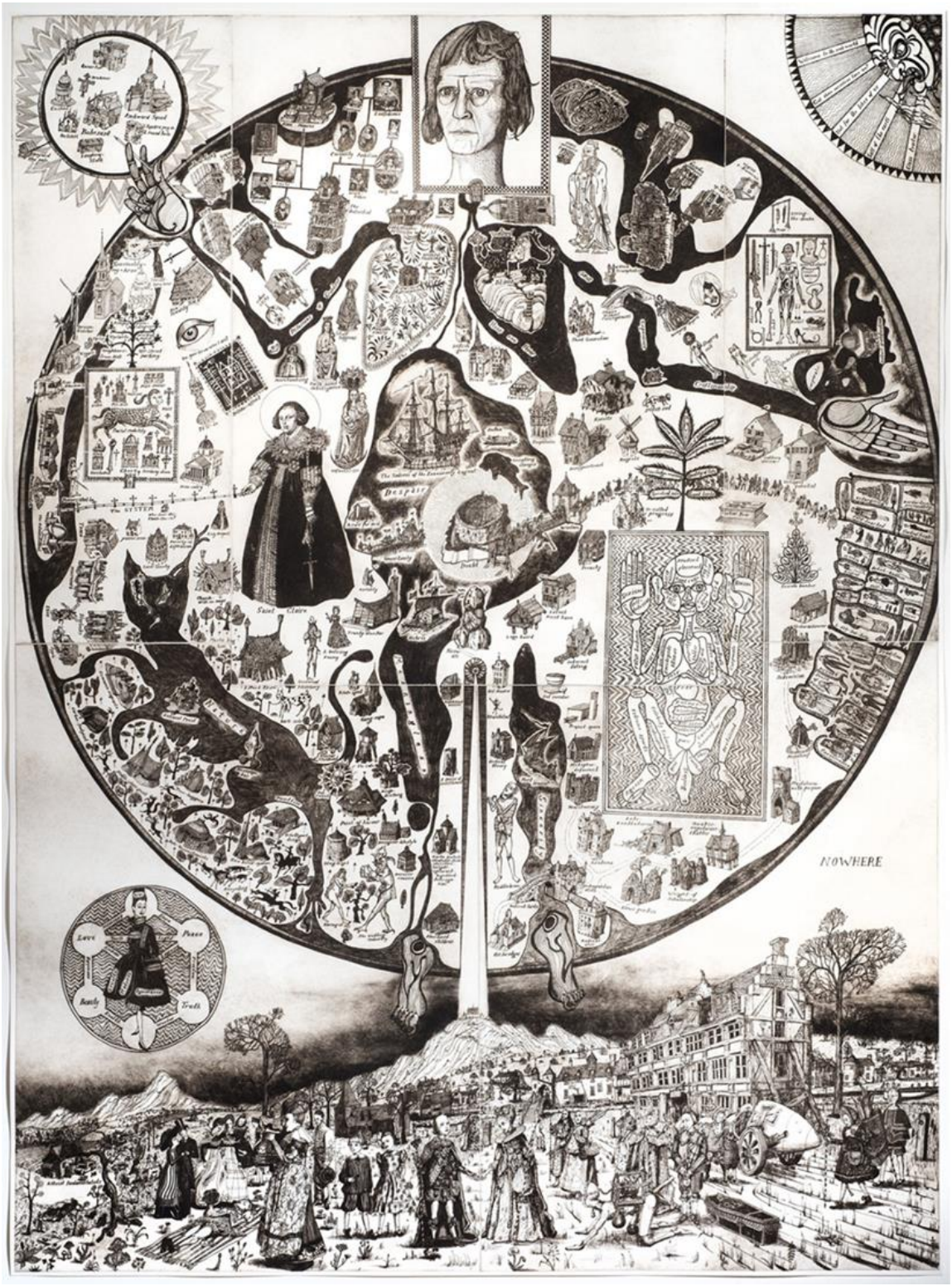


Figure 19, © Grayson Perry, Map of Nowhere, etching on paper from 5 plates, 2008.

Grayson Perry's *Map from Nowhere* is inspired by a medieval world map, the German *Ebstorf* map. Maiken Stene has chosen a different approach to working with landscapes. She builds her landscapes in different layers to emphasize depth and spatiality.

Figure 20, Maiken Stene, landscape from the exhibition at the Telemark Art Museum, January 2023, my photo.

But *Google Street View* and *Google Earth* were also new ways to explore a landscape, showing places from all over the world, including the places in The Netherlands where I have lived. That then brought me to the traditional windmills in The Netherlands, and the reason for their existence: namely to pump water from the areas that are below sea level that cover half of the country. In 1953 there was a large flood disaster in which many people died. That was the next association that came to mind. The sea level situation in combination with the changing climate made me leave The Netherlands and made me aware of the differences between Norway and The Netherlands, also leading to the theme in this project, "difference".

Figure 21, Google satellite picture from a neighbourhood where I lived in Breda, The Netherlands.

Figure 22, Google Street view photo from the house where I lived in Arnhem, The Netherlands.

Figure 23, Photograph from the flood in Hardinxveld-Giessendam in The Netherlands, 1st February 1953. Photo by Jeannette Swets.

Figure 24, Old map of Arnhem, The Netherlands. The town where I lived longest in the Netherlands. Photo from the book: Historische Atlas van Arnhem, Menno Potjer (2005).

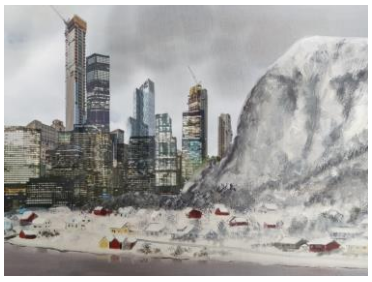
Although I experienced demotivation and resistance while working on the landscape painting, the most diverse and broad experiments were done in this part of the re-search.

Figure 25, Constructed Street View by me, made of photos from Google, showing 5 of the houses I have lived in The Netherlands.

Not knowing how to depict a landscape that was acceptable to me, I kept trying different entrances and possibilities, creating many more variations than was the case with the other paintings. The process of developing the landscape painting is most clearly visible in the time-lapse video. But I will try to come close by showing some pictures that visualise the process. Most of the experimentations are related to the theme of "difference" and contrast, in combination with memories and the places I have lived in my life. I even made a street view of some houses I have lived in, based on photos from *Google Street View*.

The original painting before the development process, was painted after a photo taken by me.

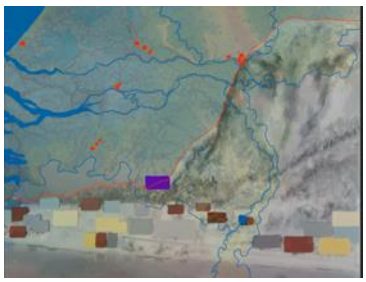
Trying out the contrast between my home country and Norway.



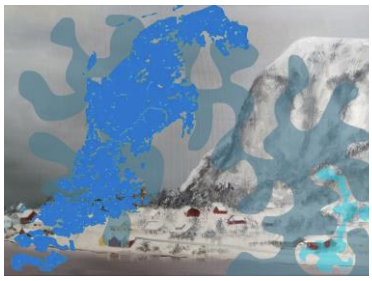
Trying out the contrast between the city and remote environments.

As a commentary on rising sea levels.

Abstract variation, using the various colours of the houses.



Combining the map of the Netherlands with marks of the places I have lived.



Inserting the part of the map of the Netherlands that is situated beneath sea level.

Combined with a photo from the major flood disaster in the Netherlands in 1953.

A graphic image of an old map of Arnhem, with the red lines indicating how I moved in it.

Making it a Christmas postcard.

Combining different solutions with much more colour.

Weaken the strong colours.

Inserting a photo of myself as a child.

Continuing with the old map of Arnhem.

Combining it with a diving mask to highlight the reason for leaving The Netherlands.

Figure 26, Process of the development of landscape painting in photos.

While the possible approaches to a landscape were expanded, digital experimentation around this subject became also more varied. However, the motivation for the landscape subject did not increase in the same way. I was missing the joy of painting that I had experienced while creating the portrait triptych and the freedom and playfulness that I felt while painting my Ukraine painting was no longer present. However, I continued painting because I wanted to understand what it feels like to work without motivation, as it can happen with my students if the assignment is not interesting enough. Additionally, I wanted to see if I could still produce something creative with extrinsic motivation, and I experienced that that was possible.

Transparency is a recurring theme in this project, referring to the openness of the working method, the various thinly painted layers, and the system of layers in the digital drawing program. But changing the sequence of the layers, or removing one of them, is logically only possible in the digital process. Therefore, I had to try to find a way to work analogously with different layers. The solution became to paint on transparent plastic sheets to imitate the digital layers and be able to “remove” one or change its sequence.

That was difficult to imitate because painting on these sheets was difficult and different from painting on canvas or digitally. The transparency was not the same, because the paint could not be applied as evenly as is the case digitally. Moreover, the size of the plastic sheets (50x70 cm) also determined the size of the canvas, much smaller than I mostly use. That did not help to make it easier.

I dropped the idea of the plastic sheets and started painting the map of the Netherlands over the landscape, where the blue colour indicates land beneath the sea level. I had decided to dedicate the painting to all my movements, with the underlying landscape referring to where I live now, and the rest to the different places in the Netherlands.

Figure 27, The finished landscape painting.

The Aylan Kurdi Painting as a Summary of the Painting Process

While I was philosophizing about the theme of inequality and difference and searching the internet for inspiration to express this, I came across an article about Aylan Kurdi. That was the little boy who washed up on the shores of Lesbos, Greece, after the boat

he was on with his parents to flee to Europe sank. All the newspapers at the time, in 2015, said that this should never happen again, but nothing seems to have changed.
I wanted this not to be forgotten, and I wanted to magnify and emphasize the situation by placing a happy playing child with an inflatable flamingo next to the dead body of 2-year-old Aylan. The sunglasses of the girl are dark, and she does not see Aylan. It was a difficult subject to work with, knowing that the situation of the boat refugees had not changed and that I had no influence on it. All I can do is remind people, and that is what I am trying to do with this painting. The painting process was technically not complicated, but emotionally difficult. It was also not easy to choose which digital idea to implement in the painting. Which one would best express the unjust difference and inequality between these two children?

In this painting, I want to emphasize the repetitive nature of the problem, like waves that keep coming to the beach. Europe is figuratively flooded with drowned “Aylans”, drowned on their journey to a better life and exploited by human smugglers who offer unseaworthy boats for far too much money.
This was the last painting of this project, using different visual means than I did in the first paintings. In addition to transparency and opacity, I used thin lines, repetition, and down and upscaling the shapes to focus on the theme. Using AI image generation to make reference images was not helpful. At the time, the faces of the AI-generated humans were still distorted and could, for example, have more or less than two legs or arms. But its rapid development may make it useful in the near future. The Aylan painting combines the two subjects in my paintings, namely portraits and landscape, and can be seen as a visual summary of this project. My inner critic was less present while painting because the painting does not have to be and cannot be beautiful.

Figure 28, "Remember Aylan Kurdi", painted by me.

Thematical Coding

Apart from the summary of the working diary, I analysed the texts with coding to see what kind of subjects I was writing about. I tried to create order in the texts that were about technology, moods, theoretical backgrounds, and lack of motivation through colour coding and categorization. I ended up with 12 different categories, which could then be divided into 4 main categories (Figure 11, Visualisation of the thematic categories, page 65).

1. **Reflections on my personal feelings**, which include negative thoughts about my work and motivation that indicate low creative self-efficacy. But also, some positive comments about the fun of playful and spontaneous painting. The personal reflections were most present at the start of the project and formed the bulk of the texts. I found that motivation is more important than risk-taking as motivation is needed for risk-taking. The process of interaction between the digital and the analogue divided the two

different activities into a design part and an executive part and resulted in a special type of painting that only can be made with digital help.

2. **Reflections on actions** involved in the digital and painting processes and the interaction results. They contain the contrast between the spontaneous and intuitive working mode on the tablet and the safe planned mode while painting. The digital experimentations were mostly about composition and colour use, playing with different grades of opacity. I made many different proposals to alter the paintings and most of them were built on an inserted picture. I used the same amount of time on both the digital and the analogue work, in addition to researching what a landscape painting could be. I started using oil paint markers to work analogue with thin lines. All to create new ways of painting and develop my paintings in a new direction.

3. **Reflections and information about the subjects of the paintings**, like different definitions of the word 'landscape' and the implications of the different interpretations. Information about the geographical nature of the Netherlands below sea level, the flood in 1953 and the places where I have lived. But also, information about the reference images used and how they contrast with each other, and reflections about "difference". Difference in childhood, in justice, in countries, in climate, and in approach.

4. **Reflections related to art education and teaching** about how my experiences could be relevant to the students in the Kulturskole. Here it became clear how relevant the methodology of a/r/tography is. While struggling with the same landscape assignment as my students, I experienced how difficult it is to work without motivation. I have been confronted with how demotivation feels, and how it can overshadow the project into something very negative and paralysing. There is little difference in whether it concerns me or the students. This experimentation project and its success were much more dependent on painting skills and imagination skills than I originally thought, and in contrast, there is a big difference between me and my students.
I found how essential enduring uncertainty, perseverance and patience are in completing the assignment, both for myself and the students. That is why I find it striking that I

do not find these qualities in the subject wheel of the visual art curriculum of the Kulturskole.

The Digital Experimentation and Time-lapse Videos

While the autoethnographic texts give reflective insights about this project, the time-lapse videos give different information about it. It shows what has been changed in the original picture on the tablet and in which order the various actions were performed. The videos make it possible to compare the digital processes of the different paintings with each other. I counted the number of layers I had used, what kind of changes I made, how diverse they were, and how many loops (Figure 15) there were in the process. Also, the comparison of the length of the videos was interesting information.

Analysing the lime-laps videos was not that easy. Between 4 and 15 short videos of each painting were edited sequentially in Adobe Express into one for each painting to get an idea of the whole process. Some of the time-lapses start with a new photo of the painting in the process, but others use the same photograph to work out a different idea. The analysis table that I had made for the students who had only experimented digitally and not painted any changes in the original did not fit well for my work. I had to adjust this to relevant things when there was an interaction between digital and analogue multiple times. It would not mean much if I tracked how often I used a colour patch or an imported image in the altering process if the result was not included in the analysis to see what was used. I visualized this in a table (Appendix nr. 3), showing here a little part of it.

Painting	Imported image	Changed compo-	Changed colours	Insert colour fields	(Procreate) patterns, tools, tricks	Repetition, mirroring, size change	Insert lines	White canvas	The total amount of layers used	Input new photograph from painting	Taxonomy creativity level 1-5	Amount time-laps videos	Total duration timelapse video
Red painting Process	4 in 3rd 3 in 4th 1 in 9th	X	X	X	X	X	X			7 different pictures 9 loops			
Finished Red painting	2	X		X			X		94			9	3:18

Figure 29, Part of the table shows the compared categories in the digital process in the visual analysis of the time-lapse videos of my work.

By using the tablet to generate various possibilities to change the existing painting, a new challenge appeared. How to choose the best option? Is the choice based on intuition, on art and design principles or on theme? Much is about making choices between the different options to paint, which could be a subject for research in itself.

The original painting from 2014.

Inserted picture of Niels.

Drawn pictures and digital colour experimentations.

Digital experimentations.

Digital experimentations with repetition of lines of the face.

Painted, but something is still "missing".

Added digital white shapes.

White shapes are painted in.

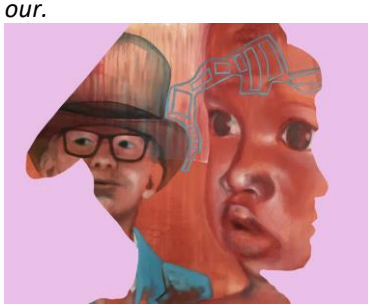
Digital muted colours.

Digital with more blue shapes.

Digital with more daring changes, introducing a new colour.

Digital, with brush strokes visible.

Digital, inserting a third portrait.



Digital, inserting a third portrait.

Digital, inserting transparent portrait.

Digital, trying out a different size and place.

Digital, trying out another portrait.

Digital, different sizes and places of the same portrait.

Figure 30, Example of the process of altering my first painting in this project.

While working on the first three portraits, the same reference photos appeared in the three different digital experimentation series. These are photos that are meaningful to me but are problematic in the videos because of the copyrights. The images I use in my paintings have very different origins. The original painting had as a reference a photo of a child from a UNICEF magazine. A child who needs help. I like to use old paintings of children's portraits as references because they fit well with the theme of inequality or difference. The portraits often show privileged, upper-class people in clothing that is not suitable for “normal” life and certainly not for children to play in. In addition, there is the advantage of not dealing with any copyrights.

Two other portraits used in the development of this painting come from *Instagram* where I follow the *Children of the Holocaust* account. Children who were murdered in the Second World War are commemorated here with both a photo and a short description of their lives if known. Here too, it is the theme in my work that brings these different children together on canvas pointing to the difference in the way children live and die. Another category is old photos of Royalty. Often extra dressed up and with beautiful lighting. These also fit well into the theme of difference and inequality.

While working I tried to write down in a work diary what I was doing and why. I captured the uncertainty about myself, my abilities, and how to formulate what I was doing. It was strange to use words for something that is an unwritten process, based on intuition and chance, in a work diary. But even though it seemed like I was just writing down what I did, things came out that were interesting.

> I work alternating between digital and analogue. Each step in the analogue process is photographed and processed digitally again. All tests are done digitally, and when I paint a part further, I often don't look at the digital sketches I've made, and it turns out differently than first thought (from my work diary, written 4.10.22. p. 2).

It seems that the digital experimentations on the tablet help to initiate the creative process, or strengthen it as a catalyst, but while painting it is no longer necessary to look at

it. Several things stand out at this stage of the project. The small size of the tablet poses limitations because what works at a small size does not necessarily work when enlarged. It is especially problematic when it comes to (thin) lines. That is why I bought oil paint markers to imitate the effect of lines on the tablet. When you work with oil paint, it is not as easy to choose opaque or transparent as you do on the tablet. Analogous colours have different qualities that are not as easy to change as on a tablet. Additionally, the light from the tablet is also part of the colours but cannot be painted on the canvas. In the part where I have worked with portraits and painted over old paintings, the tablet has proven to be a good partner. New ideas have arisen, in particular, the mixture of portrait and transparent paint in layers is a result of playing with the tablet. I have painted portraits before, and by practising I get better and more comfortable.

Figure 31, Several digital ideas to continue on the Aylan-painting.

The Theme in my Paintings

Inequality is something that has played an important role in my life. It applies to various areas, the social economic, health, geographical and ideological. The word is not necessarily negative in all areas, although it is not always easy to see this when you are standing in the middle of it. The experiences from the various periods create a "wealth" afterwards that strengthens me in life. During this project, becoming more aware of the meaning and the weight of words, I changed from *Inequality* to *Difference* because the word inequality implies a difference in value. I was not looking to visualise difference as in value, but more as an observation of the fact that things are not the same.

This theme has played a role in my paintings, especially in the portrait paintings. When I changed the genre to landscape, I entered a new figurative landscape to challenge myself and move away from the more familiar paths of portrait painting. However, I challenged myself to continue with the same theme of difference. It became the difference between the Netherlands where I come from and the west coast of Norway, where I now live. The fact that the Netherlands is 50% below sea level is frightening to think about. Climate change will affect the country more and faster than Norway, and that was in our minds when we moved to Norway as a young family sixteen years ago. This became a theme in the landscapes I experimented with digitally.

5.2 Case 2, The Students' Assignment

The 13 students from the three different groups, worked on improving their painting in the same way I did but on a much smaller scale. They should experiment digitally with the drawing program to create several proposals to improve and alter their landscape painting which they had made before.

The Participatory Observations

What I saw in the observations in the 9 hours on the Kulturskole, cannot be considered general because it concerns only 13 students and what I observed could also be coincidental. But it still gives interesting outcomes.

The tablet was to all the students a motivating tool when we started the project. Most of the students started trying out the different drawing tools and tricks on the tablet. They had fun playing with it, but no major changes came out of it. The students worked and concentrated without speaking much. They even didn't exchange ideas to try out. There was a difference in the way the younger students and the older students worked on the assignment. The youngest often started correcting what they considered wrong or a failure in their painting. This involved perfecting colour gradients and colour transitions. They generally had more difficulty imagining what they could do in altering their painting, had fewer ideas and needed more help from me. Once they had an idea to work with, they were no longer open to deviating or changing it and wanted to fully develop the idea even though I had asked for several idea sketches instead of one finished work. It was not clear whether they had no ideas or whether they were afraid that the ideas they had were not good enough and they therefore did not dare to show them. The older students were more concerned with how to make bigger changes and worked more flexibly. They experimented with different variations rather than correcting technical painting problems and they followed the advice I gave when necessary.

The second of the three hours they worked on this assignment, I wrote some ideas on the whiteboard about what they could do to change their painting and try something different from what they did in the first hour. These ideas were: inserting a new image, changing, or adding colours, changing or adding shapes, taking the contour lines of a shape and turning them into something else, replacing part of the painting with something else, using mirroring, repetition and distortion, using abstract shapes, creating a collage with many different added images. That helped a little, but not those who only wanted to work on the one single-minded idea they had from the beginning. The differences between the students who experimented with several ideas and those who did not widen, resulting in a creative divide. This might have reduced the motivation of students who struggled with the assignment. In the last hour of the assignment it became more difficult for several students to come up with new ideas and the results, as well as the approach, were less serious. People even asked when we were going to do something real with art again, with real materials, while a view others still had new ideas. When I asked at the end of the third hour who wanted to paint the new ideas in their

landscape painting, no one wanted to! The reason given by several students was that they did not have enough painting skills to make it exactly as it was on the tablet, and they were afraid of ruining the painting they were happy with. Others said they could not create on the tablet what they had in mind because they did not know how to do it. They did not have enough skills to use the tablet as a 'natural' drawing tool.
Thus because no one wanted to paint the changes in the original painting, the students never reached a second loop in the process, as visualized in Figure 15.

The Time-lapse Videos

The videos that show the process of the work on the tablet have been analysed in a slightly different way than my videos because there was only one loop in the students' process and many loops in mine.

Student nr	Painting	Drawing	Import image	Changed composition	Changed colours	Insert Colour fields	Procreate patterns, tools, tricks	Colour filter change	Repetition, mirroring, change size, change perspective	Amount new ideas for changes, imagination	Paint the changes in the analogue painting	Total	Experimentation level creativity taxonomy	Needed help to imagine changes	Small change	Big change	New picture	Duration timelapse video
2U3	X	X	X	X	X	X	X	X		XXX	-	11	5,5,5				X	1:30:14
8U3	X			X	X	X		X	X	X	-	7	4			X		1:38:15
7U3		X	X	X	X	X				XXX	-	8	3,3,2			X		2:08:00
3U3	X	X		X	X	X	X	X	X	XX	-	10	5,5				X	1:42:12
average												9	3,6					

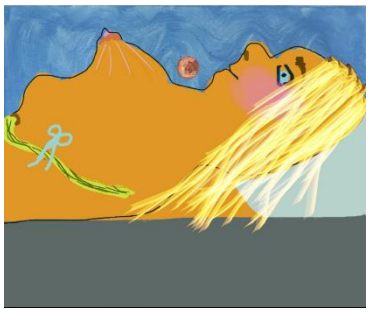
Figure 32, Part of the table (Appendix nr. 5) of counted operations performed in the drawing program in the student assignment.

All countable results were placed in a table to quickly obtain a comparative overview and to be able to make conclusions if possible (Figure 32, Appendix nr. 5). Although not necessary, the comparative overview in numbers confirms what I observed in the classes about how experimental the students worked, about their willingness to take creative risks, and what kind of changes they made in their experimentation process. I also reported if they needed help imagining what to change. The following examples of the

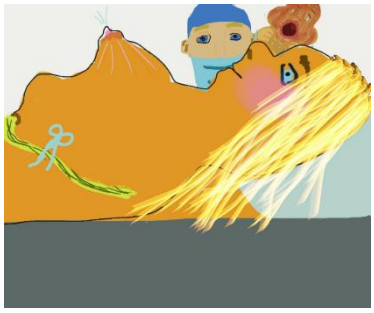
digital experimentation processes of some students show how various their changes were, and if they focused on shape, on the subject or tried out whatever was possible.

A variation on the painting A Winternight in Rondane, after Harald Sohlberg's painting.

Only using the contour lines to make new content.



Developing the new content.



The doctor is showing the newborn baby.

Using some lines in the painting to make different content.

Someone sitting on a moped.

Figure 33, Example of an 18-year-old student's experimentation process of video still pictures.

The student's process in Figure 33 focuses on the shapes in the imitation of Harald Sohlberg's painting, *Winter Night in Rondane*. This is a generally creative student who is not afraid of failure and wants to discover new things. The experimental example in

A student imitation of a painting of Monet.

The altering of the painting concerns an added lighthouse.

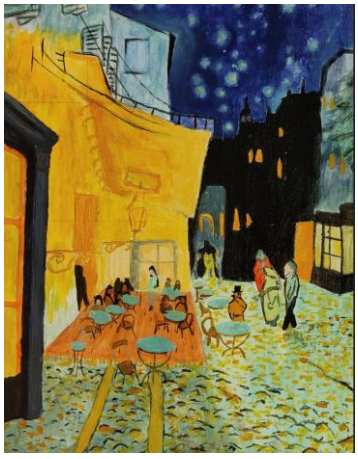
The lighthouse is replaced by another sailboat.

After the advice to make bigger changes, the sailboats have got wheels and become old-fashioned cars. She did not manage to finish the project.

Figure 34, Example of the experimentation process of a 13-year-old student.

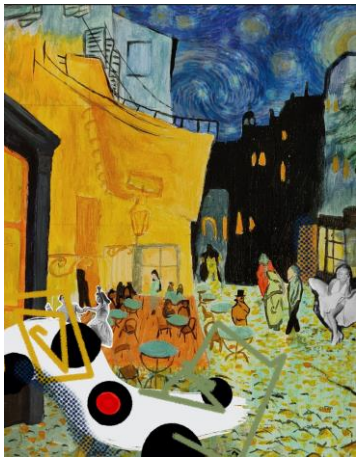
Figure 34 is based on the student's imitation of Claude Monet's painting *Sailboats at Sea.* This student is younger than the previous one and takes fewer risks when experimenting. The student planned to add a lighthouse and work on it for three hours. When I reiterated that it was about different ideas and not one great result, the student moved on to a new idea, adding another sailboat. The last idea came partly from me because the student had no other ideas to work with. This student was not very motivated for

the digital experiment assignment. Possibly due to the lack of skills in the drawing program, but perhaps also due to the fear of failure.

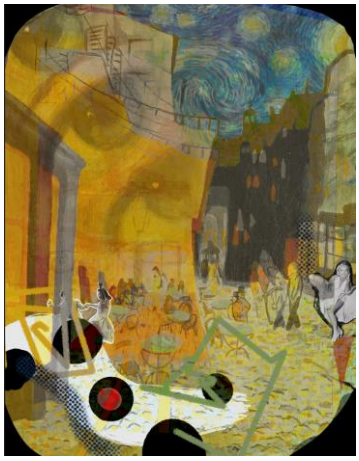


Original student painting after Van Gogh.

Inserting abstract shapes and cut-out images.

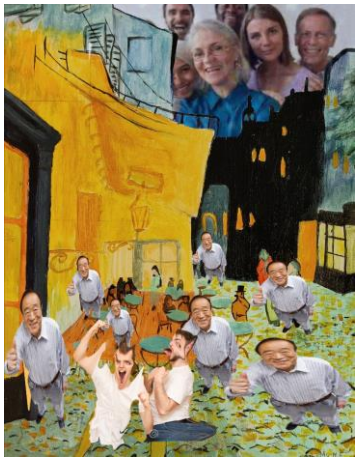


The sky has been replaced by another sky from Van Gogh.



Inserting transparent eyes.

Use of a colour filter In Procreate.



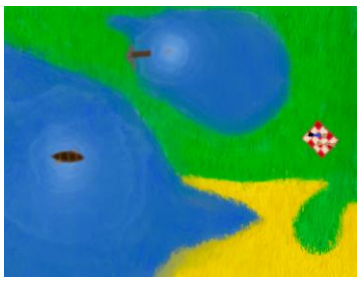
Inserting various persons. Some are disformed.

Figure 35, Example of the process by a 13-year-old student.

The third example in Figure 35 is also from a 13-year-old student. This student liked to work with the assignment, despite a lack of good skills to work with the drawing program. The experimentation process was carried out in the students' imitation of Van Goghs painting *Café Terrace in the evening.* This student was one of just a few students using abstract shapes in the experimentation, and the only one adding a part of another painting of Van Gogh (*Stary Night*) in the process. In the end, it is visible that the work became less serious and that distorted images of people were played with, which mainly produced a funny result.

Original student painting after a combination of Peder Balke and a campfire of Nikolai Åstrup.

divided into different areas.



The perspective is changed to a bird's eye view The perspective is changed to a bird's-eye view, with two lakes, a boat and a pier.

Changed colours with a Procreate filter.

Turned upside down.

Continued working on it, not finished.

Figure 36, Example of the process by a 14-year-old student.

This 14-year-old student already made an interesting painting by combining Peder Balke and Nikolai Åstrup (Figure 36) in one new painting. But it became even more interesting by changing the perspective of view, first to a birds-eye perspective, and then by turning the painting upside down.

Overall, it seemed that the quality of the experimental results did not necessarily depend on the ability to use the drawing program, but rather on the students' motivation and imagination. I expected differences in the students' motivation, just like with all the other different materials and assignments they work with. But the hardest thing for the students did not seem to be motivation but being able to imagine changes in the image. It did not seem that experimenting on the tablet made risky choices easier. The risky choices are the result of imagination rather than motivation, even on a tablet where choices can easily be undone.

6 Discussion About the Dialogue

By summarising what emerged from this research process, using the three different perspectives of a/r/tography as artist, researcher, and teacher, it becomes clear why a/r/tography as a methodology is appropriate in the research landscape. The three different perspectives are so intertwined and so closely related that it is hard to unravel them. That is why I will discuss the research question as a whole and not per case. In this chapter I discuss the discoveries from this project, starting with the method I created to experiment with digitally altering and developing a painting. I continue with the interaction between the digital and analogue ways of working. I conclude with various art education curricula and the skills and characteristics in the associated visual models that are necessary to develop creativity, but which I do not find in the model used in art education in the Kulturskole.

6.1 The Experimentation Process

In this chapter, I will discuss significant factors of what I have discovered in the "dialogue between the digital and the analogue". The research question was: *How can the explorative use of drawing software on a tablet contribute to the development of a painting?* My experiences from this exploratory process resulted in a method to experiment with visualising possible outcomes in the development of a painting, useful for me as a painter and useful as an art educational tool. In the graphic I made of the working method, there are phases in which different characteristics of the creative process are predominant. These characteristics will form the structure of this chapter.

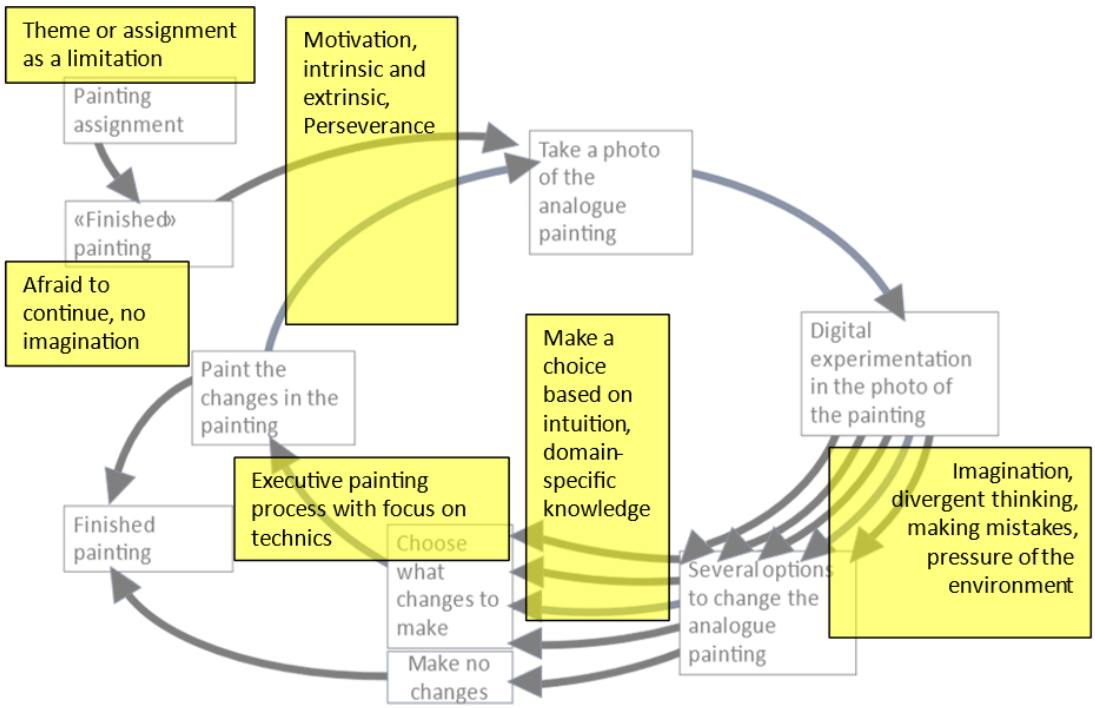


Figure 37, the characteristics of the steps in the process. Graphic made by me.

The Theme or Student Assignment as a Limitation

While working on this project, I noticed that some limitations limited the creative freedom and had a major influence on the experimentation process. They were of different nature, such as social pressure, the knowledge about the subject where creativity is desired, the quality of the materials, the theme, the available time, the knowledge of the drawing program, my mood, and the fact that everything should be recorded for research was hindering free experimentation.

Not all limitations and constraints are just negative. Some of them can be very helpful in guiding creativity in a direction and limiting the perceived infinity of creativity. To find a solution for something, there must be something concrete to work with. One of these limitations for me was the theme that I had chosen as a common thread throughout the project. Limitations determine the boundaries of the figurative box and therefore make it possible to "think outside of the box". In other words, it is difficult to cross boundaries when the boundaries are not set. In the students' case, they had the assignment text as

a limitation or guideline to the experimentation process on the tablet. The type of assignment and how it is formulated is important for the outcome. The assignment I had given to the students assumed that the students wanted to change their paintings, but that turned out to be a wrong premise. The fact that I see things to improve is for many different reasons not always the same for the students. These reasons could be that they did not dare to change the painting because they had not yet mastered the painting skills, or because they found it finished, or because they did not like the assignment or because it required too much effort. That was a learning point for me and changed my view on creating assignment texts. Perhaps the fact that they did not have to change their painting made them experiment differently and less seriously. This must be taken into consideration when looking at the results. In my own process, I have worked with a working title as a guiding line, starting with *inequality* and later changing to *difference*, stressing the equal value of two parts. The focus is not that one thing is better than the other, but it is just a statement of not being the same without any value judgment. This new title not only felt more neutral and friendly, but it also refers to the new materialistic philosophy that values everything in the world, object, or subject, human or non-human, analogue or digital, in the same way. Analogue and digital can be equal in value, but still different in quality when it comes to art, painting, and crafts.

I had an open mind when I introduced the tablets in the art classroom. However as Stana (2022) mentioned, that is not general among art teachers considering the polarised discussion on the use of tablets in art education. In my opinion, we need both the analogue and the digital in art education, but from the experience of this project, I would prefer to use them in higher art education when the students are a bit older and have experienced the different materials and have trained their basic art skills. Then the complementary use will strengthen the potential of art education (Souleles, 2016). To make the use of digital tools meaningful, teachers must also be able to use them properly (Wilks et al., 2012). That often means having enough time to learn it. The drawing program Procreate, which is quite intuitive in use, is easy to learn, with a lot of good tutorials on YouTube to help explain the less obvious functions. But there are still new functions to discover for me.

The Significance of Motivation in a Creative Process

When I started this project, I thought that taking risks, and in this case avoiding taking risks by using a drawing program on a tablet instead of painting, was important for the development of creativity. However, my experiences in this project show that motivation is more important in a creative process than risk thinking and -behaviour. Motivation is also needed to take risks, also when there is help from a drawing program. This applies to both intrinsic and extrinsic motivation, as I discovered in working with landscape painting. I agree with Amabile (2012) pointing to intrinsic motivation as being a decisive factor for creative behaviour. In my experience, extrinsic motivation was not undermining creativity, while Amabile states that that can be the case. Not all academics agree on this pointing to evidence that suggests that a possible reward can stimulate creativity and that extremely high intrinsic motivation does not necessarily guarantee creativity (Eisenberger & Shanock, 2003). What I found in my process was that when missing intrinsic motivation for the landscape as a subject to paint, the need to find a solution for this master thesis increased my extrinsic motivation. I continued to try and experiment, resulting in more and new solutions, and they were more creative (experimental) than at the start of the project. This is in contrast to what Beghetto and Kaufman (2014) found that external motivation in the form of a grade in school classes helps to complete an assignment, but the outcome will not be as creative as when made with intrinsic motivation. The motivation for the task was for me to develop my paintings using the tablet to experiment, but my students did not have the same motivation. They were satisfied with their painting and did not see a point in changing them. Therefore, the working method I developed did not work the same for them as it did for me. That made me realise that motivation in a creative process is more important than the act of taking risks.

The assignment I gave the students was probably not motivational enough. They spent lots of hours painting their landscapes and the paintings were beautiful. It was easy to understand that changing those paintings, even if they would look nice digitally, could give challenges when trying with acrylic paint without having enough skills to do so. The assignment text they were given was not well thought through enough, so it did not fit with further digital experimentation. Moreover, it is easier and more fun to make

changes to a painting that you are not completely satisfied with, which was not the case for most students.

The Importance of Perseverance in a Creative Process

I experienced the importance of perseverance when working on the landscape painting and dealing with demotivation (Doyle, 2018). Perseverance is related to high self-efficacy (Skaalvik & Skaalvik, 2013), and has consequences for the choices made when losing motivation. I could not find a satisfactory way to approach a landscape and after many different digital proposals to change the painting, I gave up. I allowed myself to start another portrait painting on an old painting. However, I could not abandon the landscape project. In terms of painting, I had only replicated a landscape photo and experimented with painting two plastic sheets that fit over the painting, to visualise an analogous layering system. At the end of this research project, I felt a strong need to continue painting on this landscape, visualising some of the possible changes I had experimented with digitally. I believe that I needed some time to adapt to a new subject in painting, but ultimately, I am satisfied with the result. It is not the painting itself that I am satisfied with, but rather the process of creation behind it and the variety of approaches I have found that I find fulfilling.

Divergent Thinking, Making Mistakes and Pressure on the Process

During the art lessons, I experienced that there were students who quickly had one idea and were not open to more or various ideas. Experimentation with an open mind is not possible if the decision about what to make has already been made and makes little sense. It may result in answering the assignment with few or no serious or well-thought-through ideas. The lack of motivation for altering or developing their painting might have played a role in how serious the assignment was taken, and in how many different solutions the students came up with. Although they were asked to think divergently, most students showed a more convergent thinking and results-oriented approach, as they are used to in compulsory education (Aboalgasm & Ward, 2015). The student's experimentation outcomes placed in a table (Appendix nr. 5) show differences when it

comes to age. The older students generally made more and more various changes, resulting in more experimental new images. The Nilsson *Taxonomy of Creative Design* (2011), Figure 4, confirms my observations. The students from the youngest group achieved an average less original result than the older students when looking at Nilsson's Taxonomy. But from the perspective of the *4 C Model of Creativity*, the result can still be innovative and new for the student, and therefore creative (Beghetto & Kaufman, 2014).

In my case, painting over the old paintings and using parts of the original painting, helped me to start the project. The existing portrait determined and limited the possibilities I had. Amabile (2012) states that creativity should be the production of a novel and appropriate response, product or solution to an open-ended goal. Whether that is the case in my paintings, depends mainly on the environment or social context in which it arises or is being judged. The highest pressure I felt, was created by my inner critic who was constantly judging what I was doing. This emerged from my work diary but cannot be read from the paintings. That shows how important it is to look at different parts of the process, where each part of it tells something different about the experimentation processes, by using triangulation. Is this inner critic a consequence of the expected criticism from art experts or the public, or is it a character trait and part of my personality? To place it in one of Amabile's components, is it a part of the cognitive and personal characteristic component, or related to the component of collaboration and the environment? It is most likely both. This inner critic can be seen as a form of low creative self-efficacy (Beghetto, 2006; Tierney & Farmer, 2002), referring to one's expectations about one's creative abilities. This may be related to the intellectual risk-taking necessary in the creativity process (R. A. Beghetto, Karwowski, M., & Reiter-Palmon, R, 2021). Using a tablet to experiment with possible changes in a painting can be a way to avoid creative risk-taking, as any action can be undone, making it a good choice for exercising creative thinking skills. I am not one to take risks; I like to plan things well and be sure. That is not a good starting point for creative behaviour and results in few "mistakes", and therefore fewer learning moments (Yang, 2017). This might also have been

the case for the students, including the pressure of an inner critic and creative self-efficacy. After the experiences of this project, I will be much more aware of this and will try to discuss it with the students if I think it is appropriate.

As mentioned before, creativity is not a static condition but something to be developed. Being creative can be learned as a habit of mind (Sheridan et al., 2022). As with all other things to learn, it helps to practice a lot to increase your skills and experiential knowledge. By training experimentation skills to develop a painting, one should also train creativity. Seen from that statement, my paintings must have become more creative. However, that is not to be judged by me, but by the social environment (Amabile, 2012; Beghetto & Kaufman, 2014; Rhodes, 1961). Such an assessment is also an element of uncertainty in the creative process that might influence the risk one is willing to take.

The Role of Risk-Taking in the Creative Process

Risk is mentioned by Amabile (2012) as a condition for creative behaviour. Nevertheless, Tyagi et al. (2017) were not able to confirm this in their study of the correlation between risk and creativity. They meant that if it plays a role, it is only in the social field and about challenging norms. With my paintings, taking the risk is about not being appreciated or seen as inadequate or amateurish. Working on the tablet opened up a different way for me to deal with the risk, and it became a balance to play with. The fact that I could not fail on the tablet because everything could be undone and redone, acted as a catalyst and led several times to what Csikszentmihalyi (1990) called a *Flow* level. That refers to a state of optimal (intrinsic) motivation (Keller & Bless, 2008). That also happened in the executive analogue painting sessions. Moreover, for the students, it was easier to try new things and delete them if they were not happy with them before anyone else could see or comment on them. Maybe that will make using a tablet safer for them. Like Brunck (2014), I experience today's students as avoiding risks, preferring to take the safe path rather than experimenting with something new and being able to make mistakes. That is problematic because taking risks is an important part of creativity (Amabile, 2012).

Using a tablet does not guarantee that the painting process is without risks. Not everything can be reversed while using physical paint. This can be positive because the learning effects of making mistakes and the function of fear in a creative process are very useful (Wilks et al., 2012). The question is how much we can learn from digital mistakes. Uncertainty is an inherent aspect of creative performance. It marks the initial stages of creative thinking and action (R. A. Beghetto, 2021b). Accepting uncertainty as a natural part of the creative process requires courage. Courage is crucial not only in making decisions but also in committing to those decisions (May, 1976). Instead of avoiding uncertainty, we need to accept and tolerate it before we can benefit from it. During my creative journey, uncertainty sparked a kind of stubbornness and perseverance in me that ultimately turned out to be fruitful.

The Meaning of Imagination in a Creative Process

From my observations of the students, it became clear that most of them experienced difficulties in imagining possible changes in the painting. If you cannot imagine any changes and the risks you might take in applying them, you will not take any risks, even if any outcome can easily be erased. That means from a teacher's perspective it is important to stimulate students' imagination and make assignments that start and train imagination processes. Another possible cause of my students' lack of imagination could also have been the fear of negative reactions from group members. In that case, the group is not safe enough for members to express themselves freely, which may have hindered free imagination and experimentation. I had trouble with my imagination when working on the landscape project and not having the motivation for it. I did not see what a landscape could be, other than a traditional one. What helped me was to see how others approached the subject and to learn from it.

What I saw when working on this project was that the goal for the students was a good outcome (in their eyes) and should be achieved as quickly as possible and preferably in the easiest way. Then digital experimentation should have a positive effect and might be a motivator because it is much faster than developing all ideas analogously. But that was not always the case. The research I conducted with my students was too small to

draw any conclusions from, but it would be interesting to see if my method also could develop imagination over a longer period. The lack of imagination and the ability to imagine multiple different solutions had a demotivating effect on some of the students. This in turn resulted in even less imagination and became a negative spiral for some of them. Only a few students may have had a perceived fit of skills and task demands necessary to achieve what Csikszentmihalyi (1990) called a *Flow* level, which refers to a state of optimal (intrinsic) motivation (Keller & Bless, 2008) and passion (Amabile, 2012).

Domain-specific Knowledge as a Part of a Creative Process

Most of my students did not experience the same advantages of using the digital drawing program in the creative processes as I had. They could not apply the functions at a comfortable level to enjoy free experimentation in the drawing program. Due to time limitations and the lack of patience to delve into the application, they used only a few functions and repeated them. Domain-specific knowledge is important when working experimentally on the tablet. Not knowing the functions and their possibilities and little technical knowledge about visual image aspects stagnated the process. Relevant skills in the domain are a requirement for creativity (Amabile, 2012). In my process, domain-specific knowledge from my experience within the field of painting played a role when choosing what of the possible options to develop the painting to apply. Although it felt like intuition, it is based on knowledge that is less consciously present, nourished by experience.

Digital technical skills in this project can be seen as domain-specific knowledge. A general problem with digital skills is that the innovation of applications is happening so fast that it is almost impossible to keep up. Artificial intelligence in the form of image or video generating has developed in only two years. What will be next?

Separating Executive Painting Processes from Digital Design

The tablet to stimulate experimentation might be a good choice but takes away spontaneous and intuitive actions in the painting process, as also Søyland and Juell found out (2014). For me, it created an unnatural separation in the process, between the design

process and the painting process, where the executive nature of painting becomes almost meditative. This dividing is also seen by Sintonen (2020) as she states that the digital process loses the unique material characteristics and the sensory and embodied approach of painting. When painting I met several issues I did not think about when I started digital editing. I struggled with the difference in size between the tablet and the canvas. Thin lines are very different on a large scale than on a small screen. Also, the colours were different on the screen than in physical paint and less easy to change from opacity to transparency. On the other hand, using a tablet saved time and offered more flexibility. In summary, I think that the two different media cannot be compared, but should be seen and used as a complement to each other. They have both their qualities and can strengthen each other.

I experienced a change in my paintings after using the tablet and drawing program to experiment. Some functions are typical for digital use but do not make complete sense with analogue painting. Repeating lines or shapes and scaling and distorting them is difficult to do without digital tools. But with the copy-paste, scaling and distorting function, and then projecting it onto the painting, that becomes possible. This creates a special form of painting in which the digital process is recognizable and is necessary to develop it. The transparent layers turned out to be too decisive as a self-chosen limitation. Transparency means that the underlayer is partially visible, making it impossible to paint over an error because the underlayer also disappears. So, no mistakes could be made in the analogue painting and that made the painting process less relaxing and spontaneous. But the concept of transparency was important, not only in painting the different layers but also as a reference to openness in the entire process.

My wish to paint something “beautiful” and “technically well executed” was often related to a social and commercial reason. I would like to exhibit and sell my paintings instead of having them around me as a ballast. This can be related to the training for “school art” with the focus on the result and not on the creative aspect as Vanessa Hudvig mentioned in her master thesis (Hudvig, 2014). I recognized that that was the case and I felt that was a strong constraint that reduced the pleasure and motivation for painting. I discovered this while working on the *Ukraine painting* where I felt like I was

playing, as a break from the compelling project I was working on. To free myself from the restrictive rules to paint something beautiful and commercially relevant, I addressed the theme of difference differently in the last painting. I decided to paint something no one would like to buy because of the content and the theme, with a message that shows that nothing changed after Aylan drowned. All the newspapers at the time said that this should not happen again... and it still happens today. The choice to make a painting no one wants to hang up in their living room had a liberating and more motivating effect.

The project developed from the beginning with painting over old paintings to ending with creating a new painting from a white canvas, where beautiful or ugly is not an issue because the meaning is more important. The process also became a search for how I could let go of my self-criticism, something I had not anticipated would play such a major role.

6.2 The Development of Creativity in Educational Frames

In the different groups at the Kulturskole, the students were kind to each other in their comments, but they were still not very motivated to show their work, perhaps for fear of negative comments that they may be used to in ordinary school. Another possibility is that the students who enrol in visual arts are usually more withdrawn, and do not want to be the centre of attention. An unsafe classroom where classmates or the teacher comment negatively on other people's work is not a good start for creative experimentation and can thus hinder creativity. There must be a culture where experimentation is encouraged and where failure is not a problem. The best environment for developing creativity is where one's individual characteristics and those of the group context are adapted to each other (Cropley, 2006). My role as a teacher is important in developing or hindering creativity. In general, creativity should not be seen as an end in itself, but as a way to achieve a goal. The assignment required creativity to experiment in several different directions. The teacher can support creative behaviour by acting as a role model and allowing students to choose (Beghetto & Kaufman, 2014).

As Olafsson (2020) argued, Norwegian art teachers have different ideas about creativity and how it can be developed when it concerns their creativity than when talking about their students. That is also recognized by Hudvig (2014) when dividing “school art” and

"art". I believe that creativity is the same for me as for my students, but as an art teacher, I see the division in our field. On the one hand, teaching the techniques, and on the other hand, developing creativity. This does not always go together and is difficult to assess at the same time. I recognize that teaching the techniques can lead to what Hudvig calls "school art", as only made for the result, not quite creative but showing learned craft skills. Motivation is the reward in the form of a grade and is different from the motivation that is involved in self-chosen activities because of satisfying one's own needs. The Kulturskole could be a perfect environment for developing creativity based on intrinsic motivation. The students take classes voluntarily because they like to create and are not being assessed on what they do or make. But it seems that they transfer the habit from school to the art class at the Kulturskole, and that habit is working for the result, learned by "teaching for the test". This is what I experienced when they asked me if they were doing it right. It was difficult for them to understand that there is no right or wrong when experimenting with something. That habit is hard to change and hinders free experimentation which in my eyes is important for the development of creativity. In experimentation as a form of creativity and testing out something, there are no rules, and if there are any limitations, they should be properly challenged during experimentation.

Education in general seems to be based on learning and testing. The right answer in the test is being rewarded, not the most creative one. The children are trained to give the correct and generally accepted answer, which discourages divergent thinking (Aboalgasm & Ward, 2015; Richardson et al., 2017). It would be good to give convergent and divergent thinking an equal place in education from the start of primary school, to meet the demand for high-level creative thinking in the 21st century (Burkhardt, 2003). That means that today's curricula need to focus more on imagining and experimentation than they do now. In the students' assignment, I experienced that the students did not know what to try out, they lacked ideas and imagination to start to experiment with.

6.3 Characteristics of Developing Creativity in Art Education Curricula

To keep up with new research about creativity and new models that visualise qualities needed for developing creativity (in education), we need to look around us. Much can be learned from these, and they could potentially improve the way we think about developing creativity in Norway. And in my opinion, we must learn from these. Since the introduction of the *Visual Arts Subject Learning Wheel* in the Kulturskole in 2017, I have not been satisfied with it because I felt that some elementary parts were missing. I compared the *Visual Art Subject Learning Wheel* from the Kulturskole (Birkeland et al., 2012) with the *8 Studio Habits of Mind* (Sheridan et al., 2022), and the *Five-dimensional Model of Creativity* from The Centre for Real-World Learnings from Bill Lucas (Lucas et al., 2013) and *The 21st-Century Skills* from Engauge (Lemke, 2002). I was searching for differences and similarities that are relevant to the development of creativity in these frameworks.

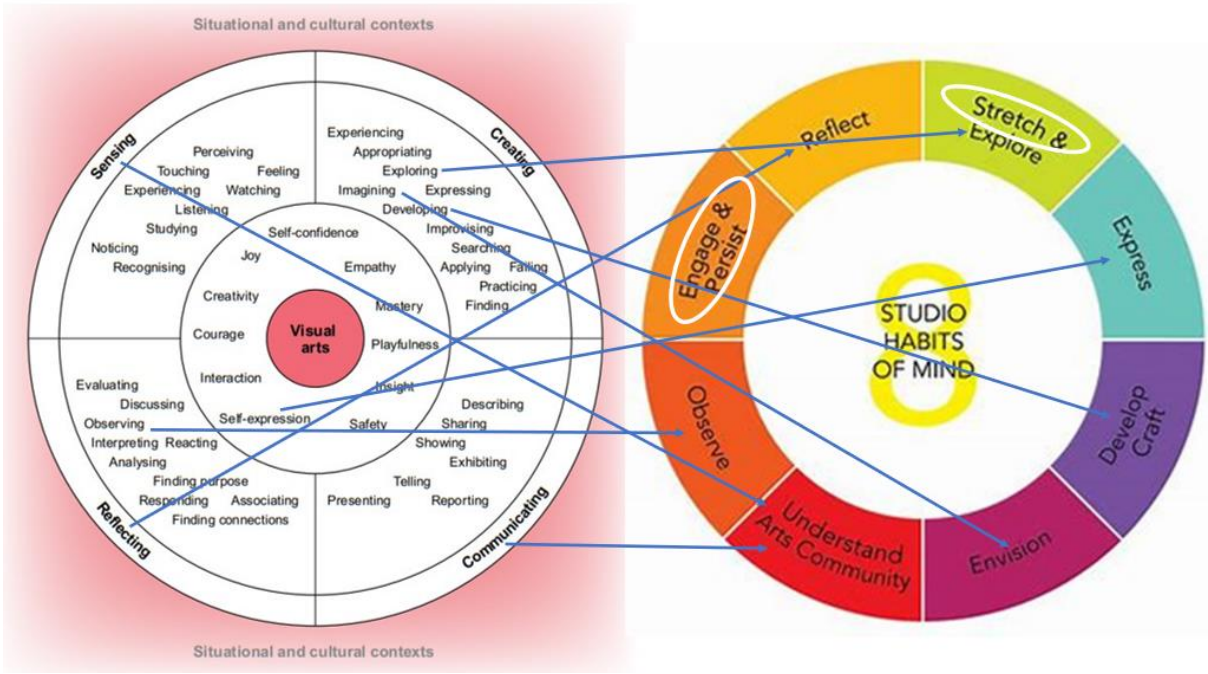


Figure 38, my comparison of the qualities shown in both models from (Figure 7, The Visual Arts Subject Learning Wheel from Curriculum Framework for Schools of Music and Performing Arts (Birkeland et al., 2012) and Figure 8, The 8 Studio Habits of Mind from the book

The basic values shown as concepts and characteristics in the inner circle do not completely represent what I think is important in art education. In the field *of creation*, you find the words *explore, fail, improvise, and develop*, words that can be seen in connection with the ability to experiment. In the middle are the qualities that you need in general in visual art, such as *courage, self-confidence, mastery, play and creativity*. These words can also be seen in relation to the ability to experiment. The general tone of the *Subject Wheel* is positive, but creativity and making art can also be hard, exhausting, and difficult. Then there is a need for *stretch* and *perseverance*, qualities that I found in *The 8 Studio Habits of Mind* (Sheridan et al., 2022), but are missing in the *Subject Wheel* of the Kulturskole. You need to *tolerate uncertainty* and trust your *intuition* when the going gets tough, qualities I found in the sub-habits of the *5-Dimensional Model of Creativity (Lucas et al., 2013)* Figure 1*,* page 36.

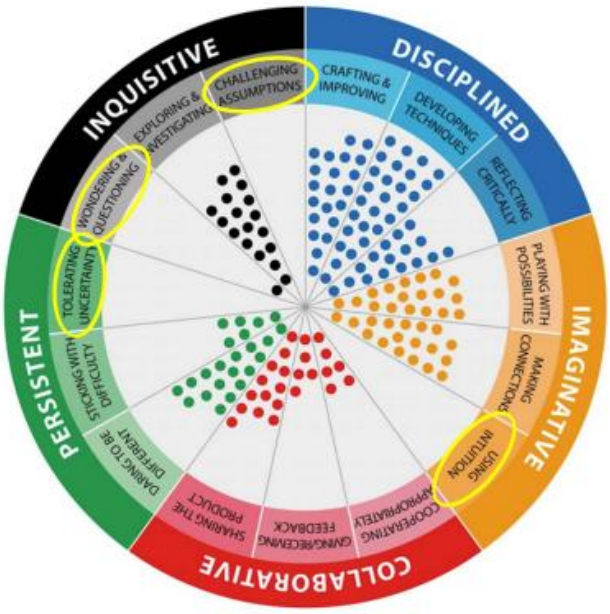


Figure 39, Outcome of the research project of creativity assessment in Norwegian schools by Lutnæs (2018), with my marks on the empty habits.

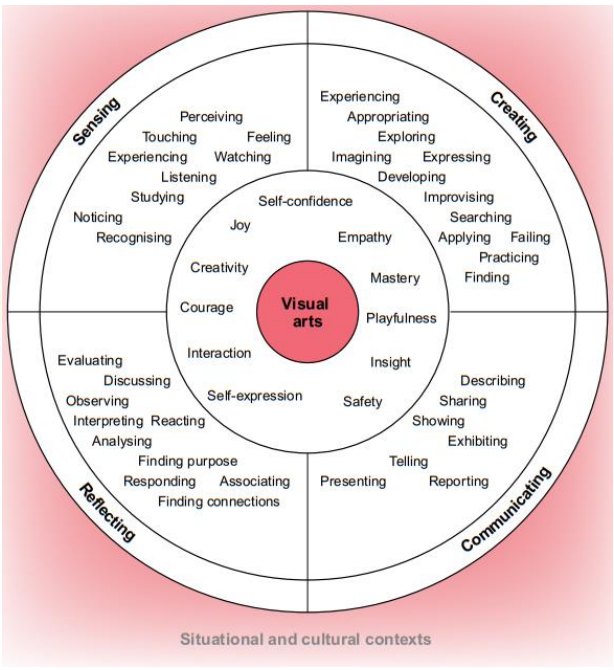


Figure 7, Visual Arts Subject Wheel from the Framework Plan of the Norwegian Kulturskole (Birkeland et al., 2012).

These qualities were missing when assessing the sub-habits of creativity in Norway (Lutnæs, 2018), and could indicate that they have received less attention in Norwegian art education. The quality of *patience* is not represented in the aforementioned habits, but

from my teaching practice, I see that it is one of the first things I use to teach my students. To learn something new takes time, effort, failures, and new attempts.

It is interesting to see other plans that highlight the development of creativity in other ways than we in Norway are used to. I will mention one from Australia where even more qualities to develop for increasing creativity are explored and systemised. Without completely analysing the research done by Karen Murcia and her colleagues (2020), due to the limited nature of a master's thesis, the qualities in the scheme seem to be more complete than what I experienced from the *Subject Wheel* on the Kulturskole. This comparison must take into account that Murcia's model only concerns the development of creativity. At the same time, the subject Wheel of the Kulturskole model also includes skills, techniques and other art-relevant issues.

While the *Visual Arts Subject Wheel* from the Norwegian Kulturskole focuses on *safety*, other plans mention the need to *tolerate uncertainty* and *persistence.* For me, this difference in emphasis has to do with the difference in opinion that a child must have a safe environment in which to develop, or that the child must develop resilience to cope in unsafe situations. There seems to be a tendency to remove difficulties from children rather than teach them how to deal with them.

PROCESS: Characteristics of children's creative thinking				
AGENCY	BEING CURIOUS	CONNEC-TING	DARING	EXPERI MENTING
Displaying self-determination	Questioning	Making connections	Willing to be different	Trying out new ideas
Finding relevance and personal meaning	Wondering	Seeing patterns in ideas	Persisting when things get difficult	Playing with possibilities
Having a purpose	Imagining	Reflecting on what is and what could be	Learning from failure (resilience)	Investigating
Acting with autonomy	Exploring	Sharing with others	Tolerating uncertainty	Tinkering and adapting ideas
Demonstrating personal choice and freedom	Discovering	Combining ideas to form something new	Challenging assumptions	Using materials differently
Choosing to adjust and be agile	Engaging in "what if" thinking	Seeing different points of view	Putting ideas into action	Solving problems

Figure 5, 'A' to 'E' of Creativity: A Framework for Young Children's Creativity (Murcia et al., 2020).

I hope future curricula in Norway will include some of the thoughts from other countries, that in my eyes are essential for the development of creativity to focus on. However, the planned update of the Kulturskole's *Framework Plan* is unlikely to address these topics, as it currently appears on the website of the Kulturskole counsel (Hofsli, 2024).

Both in the media and in scientific research, more and more questions are being asked about the adequacy of the current education system. The focus should be more on developing independent citizens who can build their own lives and contribute to society with the necessary knowledge and creativity. I believe changes are necessary to cope with and keep up with the rapid developments in the world, and that changes in compulsory education will also influence the focus on developing creativity in future curricula in art education.

6.4 Digital and Analogue, a Good Dialogue?

The title *Di(gital) + (An)alogue = Dialogue, A Transparent Interaction* refers to the interaction between the digital and the analogue and how these can interactively contribute to increasing creativity and openness about the use of digital tools and aids in creating paintings. There must be at least two participants to have a dialogue, and this points to the dependence of the analogue and digital parts on each other. The title also refers to the transparent painting method that I used, where the new painting layers are transparent and do not hide the previous layers. In addition, it refers to a/r/tography as the methodology used in this research, where metaphors play an important role, and letters are used playfully to see words in a new way. This dialogue between the analogue and the digital way of creating and developing visual art has proven to be fruitful in my process of developing my paintings. Although less clear, the students also have benefited from it and have been made familiar with this method and might use it again in their next painting project. The result of experimenting digitally on the development of a painting is that the painting and design process are separated, making the design process playful and harmless, while the painting process becomes a more executive craft process. The interaction between the two different media creates a special kind of painting, in which some features of the digital design of the image are somewhat reflected. In the Aylan painting, for example, the contour shape of his body is repeated in various

sizes. This is hard to do without the digital help of both the drawing program and the projector which makes the painting a “dialogue” painting. It is a result of both the analogue and the digital part of the development.

Moving the creative process from the canvas to a digital medium also has disadvantages. With an analogue painting, you can learn from the mistakes you make. Some (wrong) lines tell the story of the process (Stana, 2022). It is about finding a solution to make the mistakes part of the whole. That requires a lot of creativity. In a digital process, the consequences of making mistakes are less visible, and instead of learning from them, they can be forgotten.

Could the dialogue between the digital and analogue working methods, resulting in an analogue painting made with digital assistance, be an authentic solution in today's world where art is easy to copy and print? Artists are worried about their future when it comes to AI image generators, but big changes in art history have been there before. Traditional art painting survived both the camera obscura and the photo camera, and these new techniques contributed to the development of new styles. Digital tools will likely do the same, but AI image generators may be a relevant issue. However, there is also the possibility of placing more value on human creative and craft processes in the future. This requires that there is a clear difference between human and AI art, and that legislation is introduced that demands that AI be clearly labelled.

For a long time, digital editing was used to make analogue images more beautiful afterwards. In this case, digital assistance is used before the analogue painting work. The roles have been reversed. The combination of the slow nature of creating oil paintings and the fast pace of mass production of digital sketches worked well for me. But it also showed the significant differences between the two media. Oil painting, a traditional, tactile and artisanal activity that slowly produces unique and embodied works of art is in stark contrast to the digital mode. Creating digital images is new, easy and fast. It can be done anywhere without the need for many tools or materials. It is suitable for mass production, easy to share on social media, you do not get dirty, and you do not have to clean the workshop afterwards. These benefits suited the students well. Additionally, it

saved paper and all types of drawing and painting materials are integrated. So many advantages can make it difficult to make a long and difficult oil painting process attractive to students and there is a danger that the digital method will be favoured. On the other hand, there are also disadvantages. The digital process is not tangible, and it is more difficult to give it a personal expression. The physical process is completely different and not comparable. The paper-saving environmental effect disappears when compared to the energy use of storing all our digital experiments. Experiences from this project show that some students asked for “real painting” when they worked on the tablet.

7 Conclusion

This thesis is the result of the experiential journey to discover the possibilities that digital experimentation with a painting can offer. About what can happen and what can be learned from it in artistic and art educational processes. The intention was not to provide concrete answers that offer a solution for everyone, but to highlight possibilities that can get a stagnant painting process going again by digital experimentation. The process and its development were important in this project. It has grown from a research question to an experience that has taught me a lot about myself as a painter, as an art teacher and as a researcher.

This project taught me the need to have technical skills in arts and crafts. Using digital tools as I did with my students in this project will only work if general painting skills are present to realize the digital ideas in paint. This argues for more technical painting education, which comes at the expense of the attention paid to developing creativity and imagination. This highlights the dilemma the teacher faces in arts and crafts education. Developing creativity and imagination seems to me to be more important for overall development than painting skills. The latter can always be developed in higher art education. Experimenting on a tablet can be useful, but here too one must learn skills to use it in a meaningful way. Also, the age of the students is significant for positive outcomes.

Digital experimentation offered me new ideas, styles, and variations, which I felt took my painting results in new directions. Yet the most educational thing for me was that even in the absence of motivation, creativity is possible, albeit on a slightly different level. In the landscape painting where the motivation was lacking, I did the most extensive research of all the paintings and experimented the most with possible solutions.

In my view, the “dialogue” or interaction between digital and analogue techniques, culminating in an analogue painting supported by digital tools, offers an authentic solution within the contemporary art landscape. I think this is already the case for many artists, who use digital methods in their work at different levels. But I hope that the human

creative process and the uniqueness of a painting made with good craft skills will be more appreciated in the rapidly developing world of digitality and artificial intelligence.

The changing world needs creativity to meet its challenges. I hope that the method I have developed can make a small contribution to the growing need to develop more creative people. Whether the *Framework Plan* of the Norwegian Kulturskole and other educational frameworks focus on the right characteristics to develop that creativity is uncertain and deserves more in-depth research in the near future.

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9 List of Figures

10 Appendixes

Appendix nr. 1A *Subject Wheel for Writing 1*

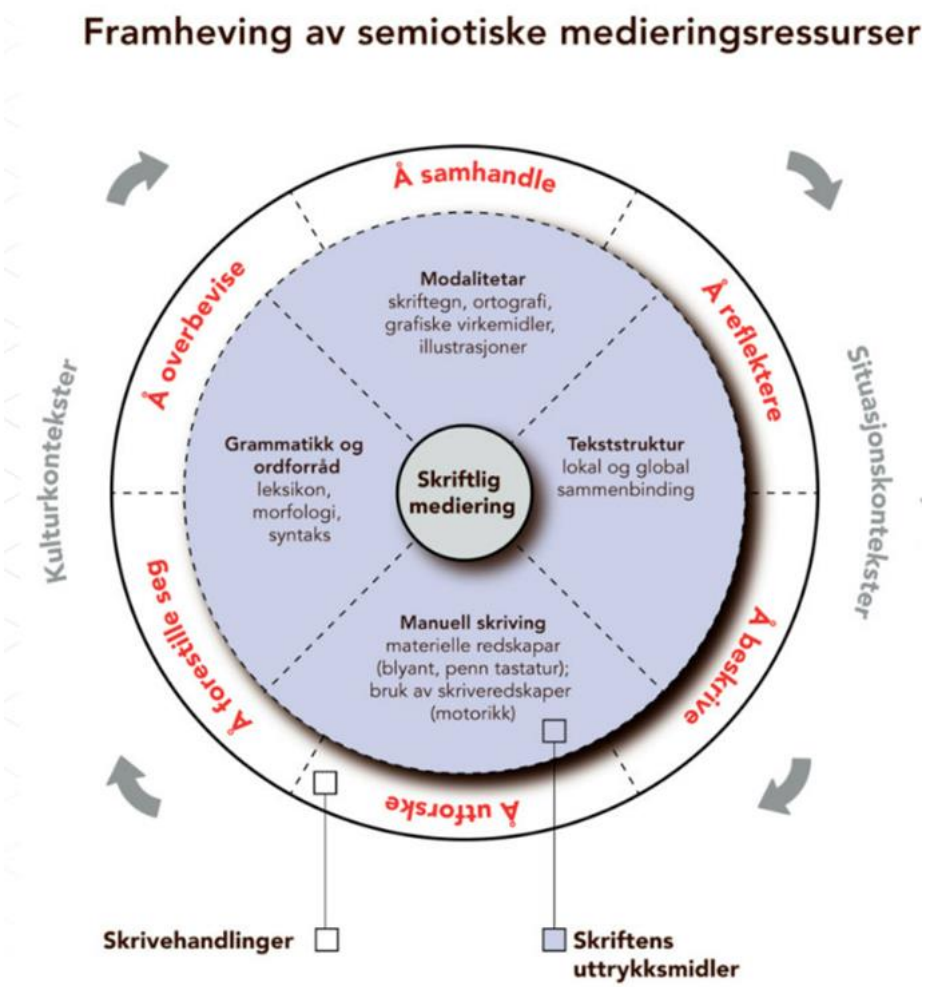


Figure A, The original subject wheel for writing, part 1, used as a start for the subject wheels in the Kulturskole (Evensen, 2010).

Appendix nr. 1B *Subject Wheel for Writing 2*

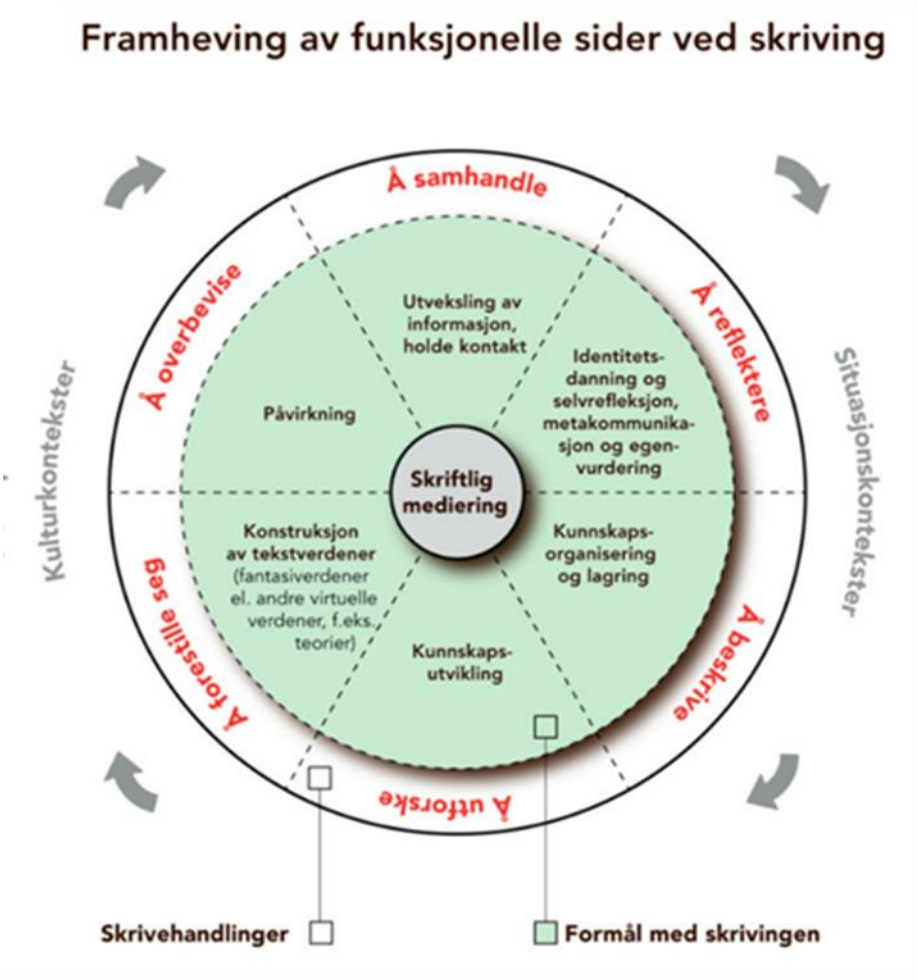


Figure B, The original subject wheel for writing, part 1, used as a start for the subject wheels in the Kulturskole (Evensen, 2010).

Appendix nr. 2 Student Assignment
The preceding assignment was to paint a landscape:

- Paint a landscape on a white painted wooden board or canvas.
- The landscape should clearly distinguish between the foreground, mid-ground and background, rendered using one of several depth effects.
- The landscape can be based on your imagination, a photo or a landscape painting.
- Make some preliminary sketches if necessary.
- Sketch the landscape lightly on the large sheet or plate if necessary.
- Use acrylic paint (take a little paint, you can take more if you need!)

The assignment for developing a painting using digital drawing software on a tablet:

- Use the tablet to take a photo of your painting.
- Import it into Procreate and experiment with possible changes to the painting that change its composition, expression and/or meaning.
- Make at least 3 different suggestions to change the painting.
- Use various functions and tools in Procreate, such as drawing, inserting other images, repeating, scaling or distorting shapes, changing colours, and adding lines or (abstract) shapes or patterns.
- Choose one of the options and paint it into your painting if you think it will improve the expression and quality of your painting.

Appendix nr. 3 *Table of Actions Taken in the Time-lapse Videos*

Painting	Imported image	Changed compo-	Changed colours	Insert colour fields	(Procreate) patterns, tools, tricks	Repetition, mirroring, size change	Insert lines	White canvas	The total amount of layers used	Input new photograph from painting	Amount time-laps videos	Total duration timelapse video
Red painting Process	4 in 3rd 3 in 4th 1 in 9th	X	X	X	X	X	X			7 different pictures 9 loops		
Finished Red painting	2	X		X			X		94		9	3:18
Green	1 in 1st 1 in 4th 3 in 5th	X	X	X	X	X	X			5 different pictures 9 loops		
Finished	2	X		X			X		70		9	3:30
Blue	10 in 1st 5 in 2nd 1 in 3rd 3 in 4th	X		X		X				4 different pictures 7 loops		
Finished	3					X			72		7	2:53
Sandra	3 in 1st 6 in 2nd 2 in 3rd 3 in 4th							X		5 different pictures 5 loops		
Finished	2								44	5	7	1:20

Painting	Imported image	Changed composition	Changed colours	Insert colour fields	(Procreate) patterns, tools, tricks, filters	Repetition, mirroring, size change	Insert lines	White canvas	The total amount of layers used	Input new photo from painting	Amount time-laps videos	Total duration time-lapse video
Landscape	19 in 1st 2 in 2nd 2 in 3rd 0 in 4th	X	X	X	X	X	X	X	43 in 1st 7 in 2nd 18 in 3rd 6 in 4th	2 on plastic sheets, 2 on canvas		
Finished	2	X		X			X		74	5 different photos in 4 loops	4	3:27
Ukraine	5 in 1st 0 in 2nd 1 in 3rd 0 in 4th 0 in 5th 0 in 6th 0 in 7th 0 in 8th	X	X	X	X	X	X	X	12 in 1st 5 in 2nd 8 in 3rd 3 in 4th 9 in 5th 7 in 6th 19 in 7th 9 in 8th			
Finished	0		X	X		X	X		72	7 loops	8	2:38
Green- purple	9 in 1st 2 in 2nd 3 in 3rd 0 in 4th 0 in 5th 0 in 6th	X	X	X	X	X			26 in 1st 8 in 2nd 22 in 3rd 23 in 4th 4 in 5th 22 in 6th	6 different pictures in 7 loops		
Finished	3	X	X	X					103	5 loops	6	2:57
Alian	1in 1st 3 in 2nd 2 in 3rd 0 in 4th 0 in 5th 1 in 6th 0 in 7th 0 in 8th	X	X	X	X	X	X	X	4 in 1st 4 in 2nd 29 in 3rd 7 in 4th 33 in 5th 8 in 6th 07 in 7th 4 in 8th	6 different pictures in 8 loops		
Finished	2		X	X		X	X		86	8 loops	8	4:21

Appendix nr. 4 Visual Analysis of the Paintings

Red painting

To start the project it was easier to continue on an old painting. The original portrait was a stable factor for me as I took the next steps to further develop the painting. This painting has the theme of *difference* and builds up from portrait to portrait and ends up with 3 portraits. There is no eye contact between the different portraits. One of them looks to the viewer. The main colour is as in the start still red. Added abstract shapes, and reduced saturation in some areas. It was nice to work with, both analogue and digital. It was exciting because it was the start of the project, not knowing what to look after and what to record. I made 9 digital series (loops), starting with 7 different photos.

Green painting

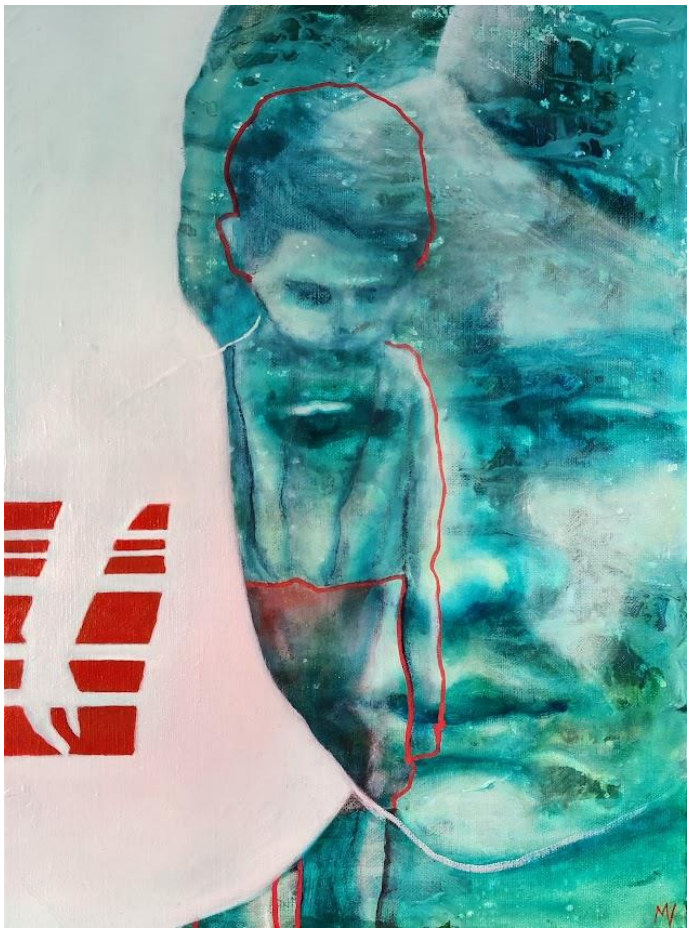
The same development as the red picture, finding new elements to add. The clothes of the girl were very nice to make abstractions of, focusing only on flat shapes in opaque colours. The collar was partly abstract with pink triangles and formed an interesting contrast with the original lace. The silhouette of the third person contrasts and brings the eyes of the other persons together.

Blue painting

The original painting did not have a portrait on it. I started with the Dutch girl who initiated a process of thinking about the Netherlands and my youth. The addition of red in the painting points to the colours of the Dutch flag. Later I added Boris and repeated him in a different size that fitted in the abstract shapes of the original painting. He was born in the Netherlands but he sees himself as a Norwegian boy. The girl looks back, and Boris looks ahead.

Triptych "Difference"

Sandra's painting



This is the smallest painting in the series. It is made in such a way that it fits in a suitcase to take with you to the Netherlands as a gift for a friend. It was not intended to be part of this project, but interesting things emerged from using the interaction between the digital and analogue working methods.

I started by making a blue-green background colour in acrylic. Then I chose a portrait photo as a reference and painted it with oil paint. Something was missing on the left side that made the composition unbalanced, and I tried adding one more to correct that. There was not enough room, so eventually a person was added on a smaller scale. Due to an incorrect selection in the digital process, because I did not yet fully understand the functions in Procreate, the negative form of the boy was created by chance. Both faces are looking down and there is a little hand that might need another hand to hold it. In this small painting only red and some variations of blue-green are used.

The Landscape Painting

To paint the original landscape to alter afterwards was not easy. I did not like painting all the details of the houses and was therefore not so accurate with the scales. I wanted to start the part of altering as fast as possible, but I was reminded by my son to do it the way I would expect it from my students. The process of altering was even more difficult, and I lost motivation and joy in the project.

At the end of the project, after some months pause, I continued working on it, being more satisfied with the changes I made. I just needed to start painting them instead of waiting for better ideas to emerge. It is not my best painting, but it has the best process behind it. I have met all the qualities needed for the development of creativity, and I think the painting has become more creative than it was originally.

It is also a very personal painting, showing the places where I have lived in Arnhem when my life was not that easy. It also refers to the water and the sea level of the country—one of the reasons why I left the Netherlands.

The Green-Purple Painting

This was originally an abstract painting with references to a sculpture. Because I was tired and demotivated because of the landscape painting, I started with another painting hoping my motivation would come back. In the digital experiments, I continued with the theme of water: flooding and the low altitude of the Netherlands. Eventually, I started doing portraits again to find new motivation for the project. The light was accidentally determined by a window in a reference photo, and with this light, I continued to add other portraits.

My motivation came back, but after inserting the three faces, it was hard to continue. The digital process was long, and I waited til the end of the project to decide how to finish the painting. The courage to paint in more purple to enhance the light and dark contrast and to make the portrait on the left side more visible.

The Ukraine Painting

This painting was an unfinished one with references to the war in Ukraine. I decided to use this one to play with, and let it not be a part of this project. But I soon realised that the playful method and the fact that painting did not have to be part of the project gave me a lot of freedom and pleasure and was therefore very interesting for this project. I continued working on it as a distraction from the other paintings, as a free space without any requirements. That worked well, but I used far too strong colours even though I had intended to mute the colours. Maybe I need to accept that strong colours are a part of me.

The Aylan Kurdi Painting

The theme of difference is clear in this painting. Two children with completely different starting points and possibilities in their lives. The sea that is a playground for one person is a grave for another. The sunglasses and the inflatable flamingo point to the luxury of protection against the sun and protection against drowning. Moreover, the glasses are so dark that in addition to the sun, they also make the refugee problem less visible. The pink colour of the flamingo is symbolic and contrasts with the blue of the dangerous water and the soft tones of the sand on the beach.

This painting is not painted over an old one but started with a white canvas. Here, the interaction between the digital and analogue approaches to developing a painting is most clear. Merging the reference photos of the two people could be done analogously. Yet the repetitive contour lines of the boy's body, and their reduction and enlargement, would be difficult to analogise, especially without the aid of projection. Also, the opaque colouring of some parts of the body, and finding out where and what colour to paint, was a result of digital experimentation.

Appendix nr. 5

Table of operations performed in the drawing program in the student assignment.

Student nr	Painting	Drawing	Import image	Changed composition	Changed colours	Insert Colour fields	Procreate patterns, tools, tricks	Colour filter change	Repetition, mirroring, change size, change perspective	Amount new ideas for changes, imagination	Paint the changes in the analogue painting	Total	Experimentation level creativity taxonomy	Needed help to imagine changes	Small change	Big change	New picture	Duration timelapse video
2U3	X	X	X	X	X	X	X	X		XXX	-	11	5,5,5				X	1:30:14
8U3	X			X	X	X		X	X	X	-	7	4			X		1:38:15
7U3		X	X	X	X	X				XXX	-	8	3,3,2			X		2:08:00
3U3	X	X		X	X	X	X	X	X	XX	-	10	5,5				X	1:42:12
average												9	3,6					
total	3	3	2	4	4	4	2	3	2	9						2	2	
9.7	X	X		X	X	X				X	-	6	2	X	X			1:36:24
9.5	X	X	X			X				XX	-	6	2,3	X		X		1:20:11
9.4	X	X		X	X	X	X		X	XX	-	9	5,5				X	2:07:24
9.6		X	X	X		X	X	X		XX	-	8	3,5				X	1:33:16
average												7,2	3,6					
total	3	4	2	3	2	4	2	1	1	7				2	1	1	2	
8.9		X	X							XXX	-	5	2,2,2		X			1:06:06
8.3		X	X							XXX	-	5	2,2,3	X	X			1:13:12
8.6	X	X	X	X	X		X	X		XXX	-	10	2,5,5	X		X		1:26:67
8.4		X	X	X	X	X	X		X	XX	-	9	3,3				X	0:33:18
8.1	X	X	X		X	X			X	XX		8	2,4	X	X			1:20:19
average												7,4	2,8					
total	2	5	5	2	3	2	2	1	2	13				3	3	1	1	
Total of table	8	12	9	9	9	10	6	5	5		-			5	4	9	7	

Appendix nr. 6 *Declaration of Consent for the Participating Students*

Vil du delta i forskingsprosjektet mitt om analog og digital bildeskaping?

Dette er eit spørsmål til deg om å delta i mitt forskingsprosjekt der føremålet er å samle inn opplysingane om erfaringane med digital og analog bildeskaping i visuell kunstundervisinga på Ulstein kulturskule. I dette skrivet gjev eg deg informasjon om måla for prosjektet og om kva deltaking vil innebere for deg.

Føremål

Planen er å gjennomføre eit undervisingsopplegg om samspelet mellom analog og digital bildeskaping med elevane på Ulstein kulturskule, i gruppene frå 7. klassa og oppover. Målet er å få innblikk i på kva slags måte ein IPad kan vere eit verktøy i visuell kunstundervising på kulturskule. Undervisingsopplegget vil bli gjennomført våren 2023.
Prosjektet er meint til å samle inn data til min masteroppgåve i samanheng med utdanninga Master i design, kunst og handverk på Universitet i Sør-øst Norge (USN), Notodden, som er ansvarleg for forskingsprosjektet.

Kvifor får du spørsmål om å delta?

Du får spørsmålet fordi du går i ei av dei aktuelle visuell kunstgruppene på Ulstein kulturskulen.

Kva inneber det for deg å delta?

Du deltar som vanleg på dei visuell kunsttimane. Prosjektet baserer seg på opplysingane frå mine observasjonar i dei planlagde timane og på (bildar av) kunstnarisk arbeid frå elevane.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Dersom du vel å delta, kan du når som helst trekkje samtykket tilbake utan å gje nokon grunn. Alle personopplysingane dine vil då bli sletta. Det vil ikkje føre til nokon negative konsekvensar for deg dersom du ikkje vil delta eller seinare vel å trekkje deg. Det vil ikkje påverke forholdet ditt til skulen/læraren.

Ditt personvern – korleis vi oppbevarer og bruker opplysingane dine

Eg vil berre bruke opplysingane om deg til føremåla vi har fortalt om i dette skrivet. Vi behandlar opplysingane konfidensielt og i samsvar med personvernregelverket. Opplysingane blir anonymisert, men mogleg kan ein kjenne seg igjen i dei anonymiserte omskrivingane. Bildematerialet blir ikkje namngitt, med mindre du ønsker å bli kreditert for bildane.

Kva skjer med opplysingane dine når vi avsluttar forskingsprosjektet?

Opplysingane blir anonymiserte når prosjektet er avslutta/oppgåva er godkjend, noko som etter planen er slutten av 2024.

Kva gjev oss rett til å behandle personopplysingar om deg?

Eg behandlar opplysingar om deg basert på samtykket ditt.

På oppdrag frå Universitetet i Sør-øst Norge har Personverntjenester vurdert at behandlinga av personopplysingar i dette prosjektet er i samsvar med personvernregelverket.

Dine rettar

- Så lenge du kan identifiserast i datamaterialet, har du rett til:
  - innsyn i kva opplysingar vi behandlar om deg, og å få utlevert ein kopi av opplysingane,
  - å få retta opplysingar om deg som er feil eller misvisande,
  - å få sletta personopplysingar om deg,
  - å sende klage til Datatilsynet om behandlinga av personopplysingane dine.

Dersom du har spørsmål til prosjektet, eller om du ønskjer å vite meir eller utøve rettane dine, ta kontakt med meg eller med:

- USN, ved Åsta Rimstad, Førsteamanuensis Institutt for estetiske fag, Asta.Rimstad@usn.no, tlf 35 02 64, rettleiar.
- Personvernombod på USN: Paal Are Solberg, e-post personvernombud@usn.no.

Dersom du har spørsmål knytt til Personverntjenester si vurdering av prosjektet kan du ta kontakt med:

- Personverntjenester, på e-post (personverntjenester@sikt.no) eller på telefon: 53 21 15 00.

Venleg helsing

Monica Vermeer

Samtykkeerklæring

Eg har motteke og forstått informasjon om prosjektet om digital og analog bildeskaping og har fått høve til å stille spørsmål. Eg samtykker til:

- ☐ å delta i undervisingsopplegget med observasjon av læraren
- ☐ at bildar av kunstnarisk materiale blir brukt anonymisert

Eg samtykker som forelder/verje på vegnet av barn ..... at han/ho får lov til å

- ☐ å delta i undervisingsopplegget med observasjon av læraren
- ☐ at bildar av kunstnarisk materiale blir brukt anonymisert

Eg samtykker til at opplysingane mine kan behandlast fram til prosjektet er avslutta.

……
…….
Signert av elev (forelder/føresette når eleven er under 16 år), dato

Appendix nr. 7 Notification Form

Sikt

Notification Form

Reference number
261149

Which personal data will be processed?

- Name
- Online identifiers
- Voice on audio recordings
- Other personal information

Describe the other types of personal data
Bildar av kunstverk laga av elever på kulturskule

Project information

Title
Digital og analog bildeskaping.

Summary
Digitalisering har kommet for å bli. Også i visuell kunstundervising på kulturskulen. Korleis kan vi bruke digitale hjelpemiddlar på ein hensiksmessig måte, uten at bruken i seg sjølv er hovudmålet. Eg har formulert ein 2-delig problemstilling: • På kva måte kan digitale hjelpemiddel (projektor, IPad og Procreate) hjelpe utviklinga av tradisjonell malekunst? • Korleis påverkar dette risikovilje og eksperimenteringsevne i bruken av og forståing for visuell grammatikk (komposisjon og fargebruk), både i eigen praksis og i kunstundervisning? Prosjektet er ein kombinasjon av forsking på eige utviklinga med bruk av digitale hjelpemidlar, og på korleis elevane bruker dei. Er ein villig til å ta meir risiko når det er enkelt å gå eit steg tilbake i ein teikning på IPaden?

What is the purpose for processing personal data?
Eg vil bruke dei allereie registrerte e-postadressene til elevane på kulturskulen til å sende ut informasjon om prosjektet og samtykkeskjemaet. Desse adressene vil berre bli brukt frå kommunale pcer med to trinns sikkerheit.

External funding
Ikke utfyllt
Type of project
Master's

Contact information, student
Monica Vermeer, monicavermeer0@gmail.com, tlf: 98445154

Data controller

Institution responsible for the project
Universitetet i Sørøst-Norge / Fakultet for humaniora, idrett- og utdanningsvitenskap / Institutt for estetiske fag

Project leader
Liv Andrea Mosdøl , liv.a.mosdol@usn.no, tlf: 35026265

Do multiple institutions share responsibility (joint data controllers)?
No

Sample 1

Describe the sample
Visuell kunstelevar på kulturskule frå ungdomskulealder til og med 18 år.

Describe how you will identify or contact the sample
Eg jobbar som lærar visuelle kunstfag på kulturskule, og tar utgangspunkt i dei eldste av mine elevar, frå ca. 13 år til og med 18 år.

Age group
13 - 18

Are any of these groups included in the sample?
- Vulnerable groups

Which data relating to sample {{i}} will be processed? 1
- Name
- Online identifiers
- Other personal information

How will data relating to sample 1 be collected?

Participant observation

Legal basis for processing general personal data
Consent (General Data Protection Regulation art. 6 nr. 1 a)

Who will give consent for children under 16 years?
Parents/guardians

Who will give consent for youths 16-17 years?
Youths

Other

Describe
Analyse av (bildar av) kunstnarisk arbeid av elevane

Legal basis for processing general personal data
Consent (General Data Protection Regulation art. 6 nr. 1 a)

Who will give consent for children under 16 years?
Parents/guardians

Who will give consent for youths 16-17 years?
Youths

Personal interview

Attachment

Intervjuguide elevane.docx

Legal basis for processing general personal data
Consent (General Data Protection Regulation art. 6 nr. 1 a)

Who will give consent for children under 16 years?
Parents/guardians

Who will give consent for youths 16-17 years?
Youths

Information for sample 1

Will the sample receive information about the processing of personal data?
Yes

How does the sample receive information about the processing?
Written (on paper or electronically)

Information letter

Samtykkeskjema.docx

Third persons

Will the project collect information about third persons?

No

Documentation

How will consent be documented?
- Manually (on paper)

How can consent be withdrawn?
Ta kontakt med meg, og få tilbake samtykkeskjemaet.

How can data subjects get access to their personal data or have their personal data corrected or deleted?
Dei kan spørre meg i timane.

Total number of data subjects in the project
1-99

Approvals

Will any of the following approvals or permits be obtained?
Ikke utfyllt

Security measures

Will the personal data be stored separately from other data?
Yes

Which technical and practical measures will be used to secure the personal data?
- Continuous anonymisation
- Restricted access
- Record of changes

Where will the personal data be processed
- Mobile devices

Who has access to the personal data?
- Project leader
- Student (student project)

Will personal data be transferred to a third country?
No

Closure

Project period
09.01.2023 - 01.12.2024

What happens to the data at the end of the project?
Personal data will be anonymised (deleting or rewriting identifiable data)

Which anonymisation measures will be taken?
- The identification key will be deleted
- Personally identifiable information will be removed, re-written or categorized

Will the data subjects be identifiable in publications?
Yes

Explain why
Det handler om maksimalt 23 elevar, og dei veit kva slags grupper er involverte i prosjektet. I tillegg er namnet mitt kopla til Ulstein kulturskule og slik er det mogleg å finne ut kven som har deltatt i prosjektet. Det kan også hende at nokre elevar ønskar å bli kreditert for bildane dei har laga i prosjektet.

Additional information

Other attachments

Sikt

Assessment of processing of personal data

Reference number	Assessment type	Date
261149	Standard	06.12.2022

Title
Digital og analog bildeskaping.

Institution responsible for the project
Universitetet i Sørøst-Norge / Fakultet for humaniora, idrett- og utdanningsvitenskap / Institutt for estetiske fag

Project leader
Liv Andrea Mosdøl

Student
Monica Vermeer

Project period
09.01.2023 - 01.12.2024

Categories of personal data
General

Legal basis
Consent (General Data Protection Regulation art. 6 nr. 1 a)

The processing of personal data is lawful, so long as it is carried out as stated in the notification form. The legal basis is valid until 01.12.2024.

Notification Form

Comment
OM VURDERINGEN
Personverntjenester har en avtale med institusjonen du forsker eller studerer ved. Denne avtalen innebærer at vi skal gi deg råd slik at behandlingen av personopplysninger i prosjektet ditt er lovlig etter personvernregelverket.

Personverntjenester har nå vurdert den planlagte behandlingen av personopplysninger. Vår vurdering er at behandlingen er lovlig, hvis den gjennomføres slik den er beskrevet i meldeskjemaet med dialog og vedlegg.

VIKTIG INFORMASJON TIL DEG
Du må lagre, sende og sikre dataene i tråd med retningslinjene til din institusjon. Dette betyr at du må bruke leverandører for spørreskjema, skylagring, videosamtale o.l. som institusjonen din har avtale med. Vi gir generelle råd rundt dette, men det er institusjonens egne retningslinjer for informasjonssikkerhet som gjelder.

TYPE OPPLYSNINGER OG VARIGHET
Prosjektet vil behandle alminnelige personopplysninger frem til 01.12.2024.

LOVLIG GRUNNLAG
Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Prosjektet vil innhente samtykke fra de foresatte til behandlingen av personopplysninger om barna under 16 år. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte/foresatte kan trekke tilbake.

Lovlig grunnlag for behandlingen vil dermed være de registrerte/foresattes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER
Vi vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:
- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at foresatte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke

viderebehandles til nye uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER
Personverntjenester vurderer at informasjonen om behandlingen som de registrerte / deres foresatte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18) og dataportabilitet (art. 20).

Vi minner om at hvis en registrert/foresatt tar kontakt om sine/barnets rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER
Personverntjenester legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

Ved bruk av databehandler (spørreskjemaleverandør, skylagring eller videosamtale) må behandlingen oppfylle kravene til bruk av databehandler, jf. art 28 og 29. Bruk leverandører som din institusjon har avtale med.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og eventuelt rådføre dere med behandlingsansvarlig institusjon.

MELD VESENTLIGE ENDRINGER
Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til oss ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke typer endringer det er nødvendig å melde:

https://www.nsd.no/personverntjenester/fylle-ut-meldeskjema-for-personopplysninger/melde-endringer-i-meldeskjema. Du må vente på svar fra oss før endringen gjennomføres.

OPPFØLGING AV PROSJEKTET
Vi vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Kontaktperson hos oss: Sturla Herfindal

Lykke til med prosjektet!