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Modelling as a foundation for creativity

Abstract

The overall setting around this investigation is the writing of a PhD thesis 'To see the visually controlled' (Frisch, 2010), where my aim was to document, describe, analyse, compare and theorise formal (teacher-initiated) and informal (children-initiated) visually controlled drawings, also called modelling drawing processes, among 9–12-year-olds. The modernist narrative in art education presented by Wilson (2004) claims that modelling in drawing among children is uncreative. My investigation shows how creative processes can be detected by using Vygotsky's creativity theory and Kaufmann and Beghetto's (2009) 4c creativity model within a sociocultural theoretical tradition. The acts of creative processes done by moving modelled elements in a drawing around has not been thoroughly seen as a central strategy in children's drawing processes. This article is an attempt to shed light on these processes often found when looking at children's informal drawing processes. The importance of these 'shifting-around' processes are not always regarded as valuable and related to both modelling and creativity. The relation between modelling in drawing and creativity as part of children's drawing learning is explored in this article.

Keywords: modelling, creativity, drawing teaching, sociocultural, visually controlled, modernist narrative

Introduction

The overall setting around the investigation presented in this article is the writing of my PhD thesis 'To see the visually controlled' (Frisch, 2010), where my aim was to document, describe, analyse, compare and theorise formal (teacher-initiated) and informal (children-initiated) visually controlled drawings processes among 9–12-year-olds. When using the term 'visually controlled' I refer to a seeing-drawing-seeing-drawing process, also often referred to as observation drawing or modelling. To contribute with knowledge that could move drawing teaching in primary school towards the debunking (Nielsen, 2008) of a resistance among teachers in schools in Norway was an overall research aim.

My PhD research project was one case of children's drawing learning processes situated in Northern Norway on a small island called Vega; the one case was divided into two fields of investigation, or units of analyses, as mentioned above – one on formal and one on informal drawing. I am presenting part of the findings from my comparative study, which resulted in the seven comparative dimensions. These categories were interesting to look at and for describing and comparing both fields of investigation. Here, part of the findings within the informal field of investigation in the creativity category is presented.

To shed light on processes in drawing among children 9–12 years old that at first glance could be seen as repetitions or in the drawing of already existing schemes of objects (Karmiloff-Smith, 1990) was a challenge in this study. But when looking analytically into the data, processes interpreted as creative could be seen. My aim with the writing of this article is to show how creative processes can be detected by using Lev Vygotsky's¹ creativity theory (Vygotskij, 1995) and the 4c creativity theory introduced by James C. Kaufman and Ronald A. Beghetto (2009). The acts of creative processes done by moving modelled elements in the drawing around has not been thoroughly studied, to the best of my knowledge, as a central strategy in children's drawing processes. To shed light on these processes often found when

looking at children's informal drawing processes through the above-listed theoretical lenses would give value to these 'shifting-around' processes, which are related to modelling but not regarded as creative. The relation between modelling in drawing and creativity as part of children's drawing learning is explored in this article.

Teachers are significant in children's lives, and how teachers view students' drawing processes matters. To see creativity could be a path to an upgrade in children's informal drawing strategies based on modelling. The investigative question guiding the presentation of my research in this article is therefore as follows:

How can modelling be described as part of a creative process in children's drawing processes?

The term modelling in this article is meant to cover the process of making a drawing by visually controlling or visually checking the drawing against the model in a direct, ongoing seeing-drawing process. This can be to master the visually perceived model as a drawing or as drawing actions – that is, how to draw. Looking at another person drawing, and drawing strategies in, for example, drawing books or peers' drawing strategies (meaning sequence, technique, shaping of form) and internalising these drawings or drawing processes/strategies (in other words, learning it by heart) is also within this definition of modelling (Frisch, 2010; Brønne, 2017).

Theory

The 4c model of creativity

Vygotsky's (Vygotskij, 1995) understanding and interpretation of creativity and imagination (in Norwegian and Swedish 'fantasi', which does not mean the same as the English term 'fantasy') is expressed in a small publication originally written in the late 1920s/early 1930s derived from Vygotsky's PhD thesis published in 1925 (Lindqvist, 1995, p. 8, Lindqvist, 2003). He places these terms in his sociocultural and historical-dialectical theory of human development based on two phenomena that are interlaced: (1) the ability to reproduce and remember and (2) creative activity, which refers to the ability to combine and recombine already known skills and knowledge in new ways to meet new challenges.

The ability to be creative requires the use of imagination, or to picture possible solutions that do not yet exist, before they are operationalised (Juell & Norskog, 2006). But according to Vygotsky (1995) the ability to reproduce and remember is a basis for the ability to combine and recombine. To be able to model and learn skills and knowledge already developed by others is then a prerequisite for being able to create new artefacts. So, Vygotsky's (Vygotskij, 1995; Lindqvist, 2003) understanding of creativity is also of an epistemological nature.

The word 'creativity' is used in imprecise ways in everyday speech. Researchers have helped us sort out our use of the term, such as Howard Gardner (1993), who refers to two categories of creativity: Creativity with a capital C and creativity with a lower-case c. Big-C creativity defines products and ideas that are novel in society as a whole and that can still be defined as creative over time. Little-c creativity is defined as ideas or products that are novelties, or a discovery on an individual level, and judged as creative by the individual. This kind of creativity is contextually situated; it is experienced 'then and there' by the creator or by significant people around the creator. The 4c model of creativity is a continuance of and a nuanced model of big-C and little-c thinking.

The 4c model of creativity was developed by James Kaufmann and Ronald Beghetto (2009), as mentioned in the introduction; they give us a collected overall view of categories based on a large review of research articles and books on creativity. These two American

psychologists have contributed with the below figure to help us as teachers to ‘see’ creativity, and this is specifically relevant to art education teachers teaching drawing.

The difference between the little-c and the mini-c is a nuance cleared through this model, see Figure 1 below (Kaufman & Beghetto, 2009; Olafsson & Gulliksen, 2018), and is helpful to encourage creative processes and sensations among students in primary school.

The 4c – model of creativity:

Creativity	Big-C	Pro-c	Little-c	Mini-c
Features	Historical inventions benefiting the world that are important contributions to humanity.	Contemporary creations within a profession or a field that are valued by peers as contributions within this context.	To find new solutions to everyday challenges in everyday life.	The individual child’s / adult’s sensation of making or discovering something new.

Figure 1. The 4c model of creativity freely interpreted after Kaufman and Beghetto (2009) and Olafsson and Gulliksen (2018).

Drawing as mediation – A sociocultural theoretical overview

The concept of modelling is interesting because, according to Vygotsky (Vygotskij, 1995), it is closely interwoven with creativity as a human activity. There can be inventive and creative solutions to how to construct and make a look-alike, which is to find new drawing strategies in the making. There can also be creative solutions to how to visually express thoughts and feelings using visually controlled drawing in combinations and recombinations. This requires the skill of learning how to make the visually controlled drawing, to internalise it and use it in combinations with other drawn figures, in a new drawing, in new situations or contexts.

Vygotsky (1978) and Kindler and Darras (1997) maintain that the driving force in all pictorial imagery is mediation. In other words, we use culturally developed tools and signs to interact with the world, to communicate meaning. Mediation is achieved through various media, including visual media, in our social space. The construction of knowledge on picture-making is based on the assumption of the general development of humans being driven by the attraction to rules, regularity, predictability and order, on one hand, and the need to reject these regularities by making new discoveries, on the other hand. As humans, we are able to see and make exceptions through divergent thinking and actions and by elaborating further on these exceptions. With time, these findings can become part of our convergent rule-based agency. The repulsion-attraction tension (rejecting regularity by pursuing new discoveries, on one hand, and being attracted to regularity, on the other) results in qualitative, non-linear shifts in humans’ development. According to Kindler and Darras (1997), the development of picture-making can be grounded in this repulsion-attraction tension and can be seen as similar to Vygotsky’s view on reproduction and creativity as the two basic drives in all human development (Vygotskij, 1995).

Köhler’s and Pedersen’s pictorial socialisation and findings on creativity

In Scandinavia, Köhler’s (1981) research has focussed mainly on content when collecting 1000 drawings from 600 children, defined as drawings made without interference from adults – what we can call children-initiated drawings or drawings made in informal contexts with peers. He

asked the questions *What do boys and girls draw? Who do they identify with and what visual language do they use?* His conclusions were that pictures made by children often come from other pictures; they use pictures seen as significant from their visual cultural world as models. These results are also supported by Wilson and Wilson's (1977) previous findings in their ground-breaking article 'An Iconoclastic View of the Imagery Sources in the Drawing of Young People'.

But Köhler viewed the cultural traces of children as plagiarism, their content being clichés from gender-determined visual popular culture idealising, beautifying and escaping reality. The only good thing about children's trace-makings in informal contexts, according to Köhler (1981), was the children's willingness to learn to draw by using modelling and repeatedly drawing until they master the drawing to perfection. This unintended finding is important for the pedagogy of visual art and visual literacy.

Pedersen (1999) studied a boy named Bo's formal and informal drawing processes from the age of two to 16 and published the analysis in his doctoral thesis. As method, Pedersen also used the drawings collected over the years as a source to help his own, Bo's parents' and Bo's memory while recollecting and recording the contexts the drawings were made in. Apart from confirming Wilson and Wilson's and Köhler's findings (the use of other pictures to make pictures), he also introduced the concept of children's pictorial socialisation (in Danish *børns billedmæssige socialisation*). He shows that the use of other culturally determined pictorial sources does not necessarily mean that the children are mechanically reproducing these but that they also actively use these internalised modelled drawings to make their own compositions or drawings according to what they want to mediate. In other words, his inquiry shows that children adapt what is learned by transferring knowledge in drawing from one context to another and can use this acquired knowledge in individual expressions or in creative combinations and recombinations. The child's ability to transfer skills and knowledge in drawing across contexts and situated tasks, and the creativeness in their own use of modelled drawings, is one of Pedersen's important findings. Recombining is a way to repeat and learn. It is also part of an informal process to make new, creative expressions.

Vygotsky on drawing

Vygotsky saw drawing as one of the earliest mediated activities in humans' development and was updated within the research made at the time on children's drawing development. In *Fantasi og kreativitet i barndommen* (Eng. 'Imagination and Creativity during Childhood'), he refers to the systematic and thorough research undertaken at the time to map children's drawing development, such as investigations and publications by Leukens, Barnes, Kerschensteiner, Ricci and Sully (Vygotskij, 1995, pp. 87–108). All of these early pioneering researchers in the field of drawing development saw childhood as valuable in itself, and because of this relatively new focus at the time, they were looking for ways of identifying and describing the characteristics of childhood. The stages in human drawing development were viewed at the time as a sign of seeing childhood as important and worthy of research, which was a new way of seeing the early stages of human beings. It is in this context that Vygotsky refers, among others, to Kerschensteiner's (1905) research on children's drawing development published in 1905 (Vygotskij, 1995, pp. 88–95).

Vygotsky refers to Kerschensteiner's fourth stage of drawing development, from 11 years and into the teenage years, as the time in human development when drawing activity diminishes, except when the children have been given education (and/or have a particular talent) in drawing at home or in school. Then the opposite can happen; if education in drawing is part of the child's context, their drawing ability can make a qualitative artistic leap (Vygotskij, 1995, p. 95). At this age the children are focused on how the drawing looks (Vygotskij, 1995, p. 94) and want to learn to control the world, including the skills of visual representation. I see

Kerschensteiner's findings explained and interpreted by Vygotsky in the early 1900s as an understanding of stages of development in drawing that can be challenged when education is given. This is an interesting reference when looking at modelled drawing learned informally, often by peers, among 9–12-year-olds today.

Method

With a qualitative methodological perspective using a case study of one case of children learning to draw as the investigative approach, the descriptive multiple data research strategy typical for the case study approach (Postholm, 2005; Creswell, 1998; Merriam, 1998; Stake, 1995) was found useful in this context. I have observed, interviewed, collected drawings, handed out questionnaires and made children re-draw their informal drawings in group interviews. The unit of analysis was three small classes in a country school on the island of Vega in Northern Norway – all together 61 children, from 9–12 years, in fifth, sixth and seventh grade. The school at Vega was chosen because they were known to have good drawing teaching, and being a small community it was also relatively easy to handle the task of gathering data from these children's informal drawing processes. Their one drawing teacher in art class was observed and interviewed. All together 11 hours and 30 minutes of recordings, about 30 pages of notes and close to a total of 500 drawings were collected (Frisch, 2010). About 300 were formal drawings, and 200 were informal drawings. This constitutes the database for the PhD investigation.

The data were clustered into two fields of investigation, one formal within the boundaries of the classroom and one teacher's drawing lessons within the time-boundaries of an academic year. The informal field of investigation grew out of the teacher's students' informal drawing activities during the same year. The two cases were then compared, and the features in the data and sociocultural theory led to the seven categories or comparative dimensions (Warner, 1971): drawing goals, drawing strategies, social arrangements, means of assistance, transfers, creativity/recombinations and drawing genres. These were used to describe, analyse and theorise the results of the comparison. This article focusses on one of these categories, creativity/recombinations, in a segment of the informal field of investigation.

Multiple data sources, often seen as a characteristic feature of case studies, such as observations while the children were drawing, recreating a drawing while observed, semi-structured interviews around their drawing processes and document studies such as the Norwegian National Curriculum in art and crafts were research activities found useful. The data collection strategies chosen for these particular findings presented in this article incorporate the collection of drawings, redrawing with observation and interviews with the drawers (the students 9–12 years old). First, the drawings, including a redrawing and an interview with Anita, who made them, are presented.

Results

Modelled drawings recombined – a creative sensation and procedure:

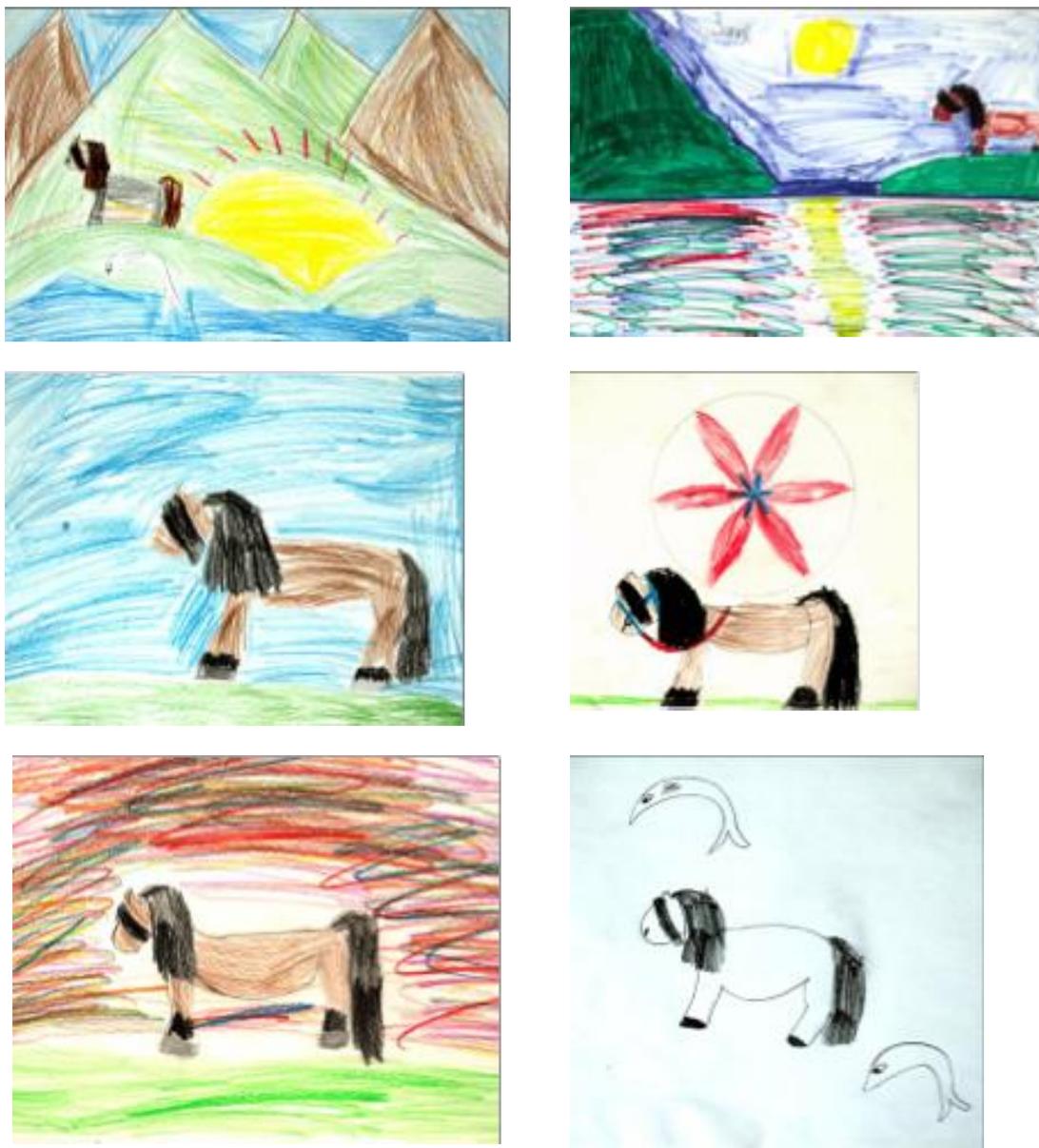


Figure 2. From upper left: 1a, 1b, 1c, 1d, 1e and Anita's horse, 5th grade, reconstructed/redrawn during the interview in 1f .

The following is an interview with Anita (fifth grade, 11/03/05), who has had a horse at home for a year (see Figure 2). She says she draws together with her older sister, who specialises in art and design in a senior high school.

- (1) Interviewer: This is yours ... And you have made a horse here ...Yes –
- (2) Anita: Yes it's my favourite animal.
- (3) Interviewer: It's your favourite animal – the horse ... Can you tell me a little bit about how you

- learned to draw THIS horse?
- (4) Anita: It's my older sister – Maria.
- (5) Interviewer: Older sister – Maria that has taught you to make a horse.
- (6) Anita: First SHE drew, and then I started to draw like that  (see Figure 1f)
- (7) Interviewer: Yes
- (8) Anita: And then I started to draw ///, and then suddenly...suddenly I succeeded...

(Frisch, 2010, p. 197)

Analysis: Internalised modelled drawing

Anita looks at her sister's drawing behaviour when learning to make a horse and is enthusiastic when she talks about succeeding after watching her sister (4). Even though the model (the sister's drawing) is not available, Anita's assessment of her drawing is that she succeeded in making a drawing that looks like the model. The sensation of making a look-alike can be described as a mini-c experience (Kaufman & Beghetto, 2009). She internalises the observation and repeats it over and over again, as seen in Figure 2 (a–e) in different settings, trying out a variety of possibilities. Her sister's drawing can well be from memory, but for Anita, it is a model, and a model that has been internalised. She draws the horse over and over again in new drawings containing combinations of these figures. She can reproduce her sister's drawing of a horse without having the model present, learning it by heart – at the same time using it in new drawings in a creative procedure.

The horse as a theme is often popular among girls aged 10–11, according to Lowenfeld and Brittain (1979) and Wilson and Wilson (2010). Anita says she has a horse at home. We can assume that the horse is an important part of Anita's life; as she says, it is her favourite animal (3).

The horse in different settings of mountains, geometrical flowers learned from the math teacher, fish learned from her father, suns and water (Frisch, 2010) is a modelled drawing recombined with other modelled drawings into new drawings.

This graphical approach (Simmons, 1992), close to the formal Chinese and Japanese brush painting tradition, can be detected, with drawings such as dragons, lotus flowers, and mountains drawn to perfection and used in a variety of combinations according to their meaning as graphs or signs. We see that Thompson's (2002) observations of drawing processes as a learning-from-peers process in kindergarten are also valid in the informal arena among older children.

Anita learns from her sister and perfects the drawing of a horse. Köhler's (1981) unintended findings when researching the informal drawing scene are reconfirmed; children and young people often repeat their learned drawings, and they are perfected through repetition.

Repetition as an exercise and as a trace of the pleasure of mastering the making of a drawing, as Anita expresses (8), and the construction of the drawing in a specific sequence are important features of the drawing process. The recombination of these drawings into new drawings are features often found in informal drawing learning processes (Frisch, 2010). The sensation of succeeding modelling and the recombination process can be understood as mini-c creativity.

Creativity

It has been documented that once a drawing is learned, it can be ‘played around with’ – combined and recombined in new expressions (Frisch, 2010). This recombination process can also be a “how-to” learning process to practice and internalise a figure or a drawing. Knowing how to make a drawing is having the basic skills to carry out the making of new visual expressions by altering and recombining (combining in process) this with other learned drawings and/or memory drawing. This seems to be a common practice among the children (Frisch, 2010). The process of alternating and recombining learned similes is also found in kindergarten (Frisch, 2006) and is the essence of creativity, according to Vygotsky (Vygotskij, 1995), his understanding of creativity being a process of combining, recombining and adapting the known according to the need and drive to learn to make new things.

Discussion

Meaningful learning activity from the students’ perspective can be the process of using modelling when drawing. From society’s perspective, being able to communicate with ‘visuals’, including look-alike drawings, is part of being visually literate. Visual literacy is defined as ‘...the use of visuals for the purposes of communication; thinking; learning; constructing meaning; creative expression; aesthetic enjoyment’ (Baca & Braden, 1990, p. 65) and should be one of the basic skills taught in compulsory public school (Frisch, 1994).

According to Nielsen (2000), being visually literate is being able to depict and read visuals for everyday needs, such as an overview of a house, descriptions as images, sketches of wanted objects to make or visualisations of theories and processes in academics, and it is part of an overarching democratic project, involving lay-people, to understand and be able to communicate accurately in processes involving visuals in society. The purpose of the democratic project then is to produce participants in society as communicators and readers of visuals. And for some, this will evolve into becoming part of an aesthetic professional practice.

Children-initiated strategies, learning from a sister in this case, are voluntary and preferred and at the same time are challenging and are, as such, ‘in the flow’ (Csikszentmihalyi, 2002, pp. 74–75). The voluntary aspect of these modelled drawings and creative recombination processes cannot be underestimated, but there might be a lesson to learn and adapt to school teaching. This children-initiated, model-based drawing practices is contrasted with the expressive modernist narrative in the discussion that follows.

The modernist narrative

If we hold the term modernism up to the light, we can see that it is based upon a paradox; the ambition to catch something that is changing and to put it into a defined and determined category. What should have renewal and change as its essence, has, in the term modernism, become a definition, and in this way, discredited its core as a rebellion against definitions. At the same time, it has eliminated all opposition, since it already includes in its agenda the right to define what change is. (Iberg, 2007)

The quote above is written by the Norwegian philosopher and musician Helge Iberg. The article this quote is taken from mainly focusses on modernism as expressed in aesthetics. Modernism in the visual arts evolved once the need to depict models (objects, people, landscapes, houses and so on) disappeared after the invention of and common access to the camera. Picture-makers were challenged to develop what the photography at the time did not have: colour, interpretations through imaginative and emotional visual expressions, as the expressionists represented, and interpretations of visual perceptions, as the impressionists represented (Glambeck, 1990). These various visual languages or ‘isms’ (impressionism, expressionism, fauvism, cubism, abstract expressionism and formalism, among others) within the pictorial repertoire of the Western art world have broadened the acceptance of a diversity of human

visual expressions. In this sense modernism's contribution to today's art scene as part of our art history is extremely valuable. If we accept that art reflects us as humans, or is the objectification of human sensitivity (Marx, 1975), more of us as humans can be reflected in art after the contribution of modernism as an epoch.

In its early days (the late 1800s and early 1900s) there was tremendous resistance against these new expressions. This can be seen in the (quasi)-academic literature produced with titles such as 'Contagious Psychiatric Diseases Then and Now with an Emphasis on the New Trends in Art' (Salomonsen, 1919) (Danish: *Smitsomme sindslidelser før og nu med særlig henblik paa de nyeste kunstretninger*). As the title above implies, modernist expressions have been developed in stormy environs. Then, the resistance so necessary for survival can in part explain the need for the strong establishment of modernism in various institutions, such as art schools, museums and so on. But as the quote that opened this section implies (Iberg, 2007), fixed strains are also found within modernism as expressions in architecture, literature, music, art and educational theories. Iberg (2007) sees the essence of modernism as artistic expression in retrospective. He sees the straight-jacket or the mould that only allows a specific repertoire of expressions and, by restraining and defining, also contradicts itself.

These are 'un-creative' limitations, and these limitations apply to modernism in art education as well, according to Wilson (2004, 2007) and Kindler and Darras (1997). These fixed views are manifested through the art-education book grounded on Piaget's (1973) stage theories of development aimed at teacher training: 'Creativity and Mental Growth' (first edition was in 1947) (Lowenfeld, 1957; Lowenfeld & Brittain, 1979). This leads us to the Lowenfeld-initiated discourse on modelling and creativity in art education found in the above-mentioned curriculum book for students to become art teachers. This discourse is at play (Nielsen, 2008) and can prevent teachers from seeing the above-detected mini-c processes based on modelled drawings.

Modernism: Lowenfeld on modelling and creativity

The two quotes below are retracted from the second issue of Lowenfeld's classic 'Creativity and Mental Growth'. "Never give the work of one child as an example to another! Never let a child copy anything» (Lowenfeld, 1957, p. 15).

I have heard many teachers and parents say, 'But my children love colouring books.' This is quite true. Children in general, however, do not discriminate between things good for them and things detrimental. That they love things is not always an indication that those things are good for them. Most children prefer sweets to vegetables, and without doubt would always prefer them. This, however, does not mean that we should adjust their diets to sweets. (Lowenfeld, 1957, pp. 18–19)

Lowenfeld is one of the main discourse-providers of modernism in art education (Wilson, 2007). Lowenfeld (1957, pp. 14–18) compares children's wishes to look at one another and copy and to colour in colouring books to the desire for candy. Colouring books, painting books and drawing books are all understood as synonyms in this inquiry, and are still popular among children in the age group in focus here, as seen in the informal case. These books have two major components: they are 1) commercial products, and they 2) present modelling challenges such as looking at a model, at others' drawings/pictures or at other drawing strategies, similar to Anita's informal learning process (see interview above). Lowenfeld compares the children's voluntary interest in these books with their taste for candy. It is something they want but it is bad for them, and we as responsible adults have to control and suppress this 'urge'.

Suppression of children's epistemology: To copy (in Norwegian, herme) and model

Children should not be given the possibility to copy, according to Lowenfeld, as it is damaging (as is candy) and ruins their ability to express themselves visually. In the Danish version (Lowenfeld & Brittain, 1979, pp. 51–53), the candy metaphor is dropped, but the strong warning against painting books, colouring books or drawing books with copying/modelling as part of the main drawing strategy is still highly prominent. It is intriguing that one of the most used informal learning strategies and means of assistance in the world, observed by researchers among native Indians in South America as well as between mother and child in Los Angeles (Scribner & Cole, 1972), is categorised as damaging.

The results of this inquiry also reveal that modelling as a drawing strategy is a substantial part of the informal drawing arena and that children express notions of shame when admitting that they use this drawing strategy. To me, this is alarming and begs the question *Can this expressed shame be traced back to a modernist understanding of modelling?*

Another interesting aspect of the modernist understanding is the appreciation of nature or the natural, the genuine, the original and the primitive, which is expressed, for example, by copying/modelling African art as the icon and representative of modernism in painting, Pablo Picasso, did. African expressions can be seen in his famous painting 'The Ladies from Avignon' (Picasso, 1907, found in The Museum of Modern Art in New York, MoMA). In this way Picasso also used informal teaching/learning strategies applied by the so-called 'primitive' or 'natural' people and also by children today, as seen here.

I interpret Lowenfeld's text quoted above as being highly authoritative, and, as a consequence, modelling as a drawing strategy and as a means of assistance in the formal and informal teaching/learning arena is in a sense made invisible within this discourse. This prevalent feature is unique for the pedagogy of the visual arts. In the pedagogical fields of music, dance and drama the balance between the joy and the sensation of learning to master and interpret what has been made by others together with others, and the open space for creating new expressions, is a natural approach to nurturing quality in expression. Acknowledging modelled drawing processes does not mean underestimating or suppressing other drawing processes – the narrative drawing process, the imaginative drawing process or the memory-based drawing process, all important parts of the joy of developing visual aesthetic expression.

On the contrary, modelled drawing strengthens these often creative pictorial expressions, as was thoroughly documented by Pedersen (1999). The concept of creativity is essential in Lowenfeld's writings, his understanding of the concept being the space where new expressions and continuous explorations can flourish (Lowenfeld & Brittain, 1979, pp. 55–72). But it is set up against the reproductive aspect of learning to make a drawing that Lowenfeld advocates for a break with informal learning practices. This voluntary informal model-based learning practice, as seen in Figure 2 is more in line with the history of learning by modelling within visual art and in contemporary teaching/learning practices in other aesthetic fields, such as in music and drama.

Modelling as part of a creative process

The findings presented in this article – the sensation Anita describes of succeeding in modelling a horse, what we according to Kaufman and Beghetto would call a mini-c creative sensation and then using it over and over again in new combinations (Vygotskij, 1995) – are contrasted by.

Art and crafts as a subject can give students the possibility to develop their abilities to be creative and to make new expressions or products (as other school subjects can). But Lowenfeld's polarisation of some of the main features of modelled drawing against other drawing 'drives', such as narratives and memory/scheme drawing, is expressed in the quotation below. Lowenfeld is here referring to an unpublished doctoral dissertation written by Russell

and Waugaman (1952–1954): “Research has experimentally proven that such imitative methods have a detrimental effect on the child’s creativeness” (Lowenfeld, 1947/1957, p. 16).

Here, Lowenfeld bases his assumptions (referring to the use of drawing after each other and the use of drawing/paint/colouring books) on an unpublished dissertation (Russell & Waugaman, 1952) that builds upon a close-to-experimental research approach executed in a formal arena in the early 1950s. Unlike this inquiry, drawings made spontaneously in natural, informal contexts were not the starting point for the inquiry, and looking for the insider’s perspective and for context by interviewing the children was not one of the research strategies. When reading Russell and Waugaman’s (1952) research and results from the early fifties, I see the publishing of these results in context, as a protest against using simplified stick pictures of the human figure, houses, birds (the example used by Lowenfeld), animals etc. as models to copy in reading and arithmetic exercise books (these models are underestimating the children and cannot be compared to what is found in colouring books in the informal arena today). The results can be explained by the children’s response to and understanding of what is expected of them in the context of a formal (and often very strict) arena at the time and cannot be used as proof of modelling being of universal damage to children’s drawing development in art teachers’ training at all times. King (1991) has examined Lowenfeld’s basic arguments and academic sources for seeing colouring books as detrimental (including a review of Russell & Waugaman, 1952) and, on the contrary, strongly suggests that colouring books today can be seen as one of several different useful teaching tools that can teach children art appreciation.

Lowenfeld (1957/1979) also refers to his doctoral student Heilman’s (1954) dissertation. The article is of such poor academic quality, it is hard to take the text presented as research seriously. These are the two sources from the 1950s Lowenfeld has to support his view on modelling and the use of drawing found in colouring books as harmful.

But the fact that these studies from the early fifties are referred to in the Danish version of *Creativity and Mental Growth* (Lowenfeld & Brittain, 1979, a translation of the American 6th edition from 1975) is surprising. Lowenfeld polarises modelled against creative drawing processes, and unfortunately this view on drawing is still prevalent (Wilson & Wilson, 1977; Wilson, 2007) and still undermines art-education practices.

Lowenfeld’s most extreme utterances on modelled drawing have been moderated somewhat over the years. This development is seen from the American/English version from 1947/1957 to the Danish version from 1979. The Danish version was used in Norwegian teachers’ training up until the mid-1990s (Nielsen, 2000). But the essence of his ideas, the derogatory depiction of modelling contrasted with the concept of creativity, are still prevalent within the Norwegian public compulsory school system today.

By looking closely at sociocultural definitions of creativity (Vygotskij, 1995; Kaufman & Beghetto, 2009) and exemplifying this term in practice as is done in this article, the common-sense use of the term creativity as ‘untouched’ artistic practice (with as few recognisable visual-reference features as possible) can be challenged. The common-sense concept of creativity is unfortunately often misused, worn out and watered down so that it has no real content. The concept of creativity can be explained and understood by using theoretical definitions closely linked to documented processes and practices, as done here.

The theory/practice exercise of documenting and defining creative practices has also been undertaken by Lindström (2006). Seven criteria for evaluating creative performance were developed by Lindström and his team for Sweden’s National Agency of Education in 1998. One of these is the ability to use models, or when, and I quote: ‘the student actively searches out models to emulate’ (criterion 6: Lindström, 2006, p. 56), which would include the ability to use models and elaborate on them by, for example, making new combinations and recombinations of the models. In a drawing practice models must then be part of a repertoire.

Vygotsky (Vygotskij, 1995, pp. 11–13) sees human actions as two fundamental activities: reproducing and creative or combining/recombining activities. Reproduction is a condition for the ability to create new artefacts, the new artefacts being rooted in elements of the previously reproduced. The more previous experiences, here, for example, a wide repertoire of internalised observations, the more significant and productive the creative actions, here, drawing expressions, will be (Vygotskij, 1995, p. 20). The combinations and recombinations (combinations in process) are well documented in the data, but being in an informal drawing genre related to line drawing often associated with visual popular culture aimed at children in form and content, the creative processes can easily be overlooked, as could be the case in Figure 2.

The ‘tweens’ perspective

One of the sources of modelling used by the children in the informal arena are models from popular culture. The informal drawing strategies often involve making similes with figures from popular culture as models, such as the W.I.T.C.H. figures, Donald Duck and Diddl.

In their book *Researching Children’s Popular Culture*, Mitchell and Reid-Walsh (2002, pp. 13–45) refer to how adults have a tendency to either trivialise or neglect the children’s relations to and involvement in popular culture or, on the other hand, to make the children’s popular culture a damaging risk zone (comparing it with junk food) without really inquiring about what this popular culture world means to the children.

When interviewing the children while redrawing, I experienced, as other researchers have before me (Sørenssen, 2008), how positively surprised these 9–12-year olds, or tweens*, were when my interest was focused on their world of informal drawing-making. And as the results show, the layers of informal drawing reveal that making a simile is not necessarily only about learning to make a simile. The data strongly suggest that these learning-drawing processes are motivated by the will to express togetherness, friendship, social alliances, family relations and common interests in various forms. (*Tweens’ is the word used for the in-between-childhood-and-teenager age-group, 8–12, by toy producers and marketers [Sørenssen, 2008].)

Conclusion – Summary

Michl (2001, p. 12) introduces the concept of redesign and advocates the use of the term for covering what we usually would call design processes in the professional world of product development and product-making. He argues that we always build on others’ inventions and contributions, that this is a feature in all trades and, that by using the term ‘redesign’, the contributions of others to creations or design products are acknowledged. It is important to encourage the will and motivation to learn from others without feeling that you are ruining your artistic integrity. If the contributions of others are acknowledged (or the fact that the designs of others have been modelled or partly modelled), we are more in control of the work being done and of our own combinations and recombinations in the making of new creations.

If teachers in compulsory school can see and encourage these processes of modelling and the creative use of modelled drawings in school, it might be one step closer to acknowledging a diversity of teaching practices tangible both to students and teachers. The results of this qualitative study show that modelling and creativity can be complementary.

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¹ Vygotsky and Vygotskij are the same person. This article will use the name Vygotsky (the English spelling) in the article when writing about him, but when books and articles referred to use 'Vygotskij', the references in the text will be loyal to the literature referred to (often, Norwegian and Swedish) in regard to spelling the author's name.