

Tabula Rasa - The performative and unique materiality of the blackboard

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ABSTRACT: This article is about the use of the blackboards in Waldorf education today. The blackboard still has a central position in the daily practice of Waldorf teachers. This article is based on three ideas and my own empirical research. First it discusses the teacher's blackboard activity as a form of performance. The teacher is here understood as a performer who performs chalkboard activity in front of pupils. Performance means that there is an interaction between the artwork, the person performing, as an act of dancing, singing, painting etc. and an audience. In the second idea, the blackboard is understood as a surface where the teacher makes site-specific images and texts. Here is the term unique (Benjamin, 2013) used. Benjamin's concept is here applied in relation to when teachers draw pictures by hand with chalk on the blackboard. The concept highlights the uniqueness of the created images and text representations in a specific educational context. The third idea is based on the materiality of the blackboard and its significance for the human relations to the blackboard in an educational context. Aspects that the blackboard has in itself as a blackboard and the materials related to this, such as a sponge and chalk are taken into account. Here is the concept focusing feature (Sørensen, 2009) central. The blackboard is in this context regarded as a focal point in the classroom, with its own voice. Blackboard features, materials, and the relationships between blackboard, teacher and pupils are therefore central in this context. Teaching materials like blackboards are in this sense viewed as invisible partners in educational activities.

Keywords: Performativity, materiality, Blackboard, theories of learning, Waldorf education

Introduction

Many people have memories of their schooldays. You may remember the presence of the blackboard as a dark accent wall, always there behind the teacher in the classroom. On this dark wall, like a black cosmos, a constantly changing drama of signs, text, colour and pictures would play out. The teacher was like a conductor with a piece of chalk and a sponge in hand. We pupils were the orchestra, with our different possibilities and talents. I myself clearly remember the scraping sound of chalk dancing across the blackboard, hammering rhythmically and ritualistically away, and the unbearable, spine-chilling noise of the teacher's nail coming into contact with the surface. Or the wet sponge that wiped away the signs and figures and moved over the black surface like a paint brush, making it even blacker.

To an outsider, much of the blackboard teaching that takes place in Waldorf education might seem to be based on a didactic tradition. This article is an attempt to investigate whether a blackboard is still a relevant teaching aid in Waldorf education and other educational institutions. The following is a quote from a 2013 issue of the Waldorf education journal *Steinerskolen, tidsskrift for pedagogikk, samfunn og kultur*:

At all the Waldorf schools in the world, the blackboard, chalk and the teacher's drawings are an important communication medium. This is how new subject matter is visualised and elaborated on. However, little (or

no) research has been done on this practice, despite its long history and worldwide use. We do not find much information about blackboard illustrations in Steiner's works either. (Tronsmo, 2013, p.11)

The fact that research on blackboard use and related experiences in Waldorf education is very limited makes it necessary to also draw on ideas from other fields than educational theory, for example from art and aesthetics. It is these ideas that I wish to present here. This article consists of two parts. It begins with a theoretical part comprising three sub-chapters in which I consider the use of blackboards in three different theoretical contexts. The article concludes with an empirical part in which I reflect on my findings in light of an empirical study on blackboard use that I conducted in connection with my master's thesis.

Performativity and the action of the moment

In this sub-chapter, I intend to demonstrate that the teacher can be regarded as a performer who performs blackboard activity in the moment. The blackboard activity is categorised under the collective term 'performance' (Benschnitt, 2007). A performance means that there is interaction between the artwork, or the person performing, as in an act of dancing, singing, painting or similar and an audience, and that the dividing line between the artwork or performer (teacher) and the audience (the pupils) is erased. This allows the audience (the pupils) to become participants in the work of art. A performance focuses on the here and now (the teaching itself) and always involves reality through the presence of people (the pupils and the teacher).

Performance is a concept that is open to different interpretations. Historically, the concept of performativity stems from philosopher of language Austin (Hermanson & Rudeke, 2007). and his ideas about language as action. More recently, Butler (2007) has been one of those who have used the concept in connection with theories of gender, sexuality and subjectivity as crucial to the discourse. In both these cases, the issue is what language constitutes, according to Hermanson & Rudeke (2007). There is also another approach to the concept of performativity, one that is more clearly linked to art and more relevant in this context:

an extended art field a 'performative turn', which really gained momentum with the development of action and performance art in the 1960s. The relaxation of the previous dividing lines between genres also changed the boundary between the work and the spectator, making the audience participants to a much greater extent than before' (Hermanson & Rudeke, 2007, p. 20)

Performance art is described here as the interaction between a work of art or the performer and an audience. It is also described how the dividing line between the work of art or performer (the teacher) and the audience (the pupils) is erased. Another characteristic feature of performance is that it is a specific one-off event, an activity that takes place in interaction between the different actors. Benschnitt (2007) describes the concept of performance in this way:

Regarding literature (or music, art) as action in a concrete situation means that we are talking about both one-off occurrences and events. Among other things, this leads to a problematisation of the classic work of art's subject-object relationship: instead of seeing the reader/listener/spectator and the work of art as two essentially different entities, performativity research sees one single context, an art event that is created through the interaction of several participants. Participants are not passive, external recipients, but take part in the art' (Benschnitt, 2007, p. 37)

Benschnitt describes concrete art situations as unique one-off events (teaching situations) in which both spectators (pupils) and performers (teachers) participate in a distinctive 'performance' (2007). Performativity research is interested in what takes place during the actual interaction between these parties. Participants are not passive, but contributing and equal actors in the performance itself. This entails problematising the classic subject-object relationship in the performance itself, and Schechner (2013) also claims that many everyday events can be described within the framework of performance or production. Schechner's point of departure is that the act itself is framed or highlighted in a specific way and takes place in a certain social setting, for example teaching and teacher-pupil interaction in a classroom using a blackboard.

An important aspect of performance is that it takes place in a unique moment. Phelan (2008, p. 209) calls this representation without reproduction. This means that performance is always based on what is happening in the moment. Thus, performance cannot be recorded on film, as that would only be a form of documentation of the action performed. In this way, performance takes place over a time that cannot be repeated, claims Phelan. A performance focuses on the here and now, and performance always involves the real world through the presence of the human body. The spectators have to take in all that happens through their gaze and pay attention to what is taking place. Phelan calls this a 'maniacally charged present' (2008, p. 212). What is unique to performance, according to Phelan, is the idea that, at a given time or place, a limited number of people can share a valuable experience that leaves no trace of itself, like a blank blackboard in a classroom after a lesson has ended.

Teaching as performance

In the lecture series on the methodological and didactic aspects of education, Steiner elaborates on what a teacher can do with the blackboard together with the pupils on the first day of school. This is from *Pedagogisk kunst* (2011) (the Norwegian translation of Steiner's Practical Advice to Teachers). The objective is to give the pupils a relationship to the principles of straight and curved shapes in the world. In the lecture, the event is described as a unique one-off event between the teacher, pupils and blackboard. The performance is described as a ceremonial, painstaking and sensory ritual. It is an imagined unique sequence of events involving a teacher, a blackboard and pupils. Through this performance, the pupils are supposed to develop an awareness that they have hands to work with. They should not just know that they have hands, but become aware of this fact through the act itself:

'Watch me do this.' (You draw a straight line.) 'Now do it with your own hand.' Now you can let the children do the same, as slowly as possible, for it will naturally be a slow process if you are going to call the children out one by one and let them do it on the board and then go back to their places. The right assimilation of teaching in this case is of the greatest importance. After this you can say to the child: 'Now I am making this (draw a curved line); now do the same with your hand.' Now each child does this too. When this is finished you say to them: 'This line is a straight line, and the other is a curved line; so now with your hands you have made a straight and a curved line.' You help the children who are clumsy with their hands, but be careful to see that each child from the first performs his task with a certain perfection. (Steiner, 2011, p. 44).

What is described here is an interaction involving the blackboard, pupils and teacher. Each pupil goes up to the blackboard and draws a curved and a straight line. This is a slow and painstaking process, as all the pupils should complete the action as perfectly as possible. It is said that the right assimilation is important, and through the act itself and the ritual, pupils can become aware that they can draw two shapes with their own hands. All the pupils are involved in the blackboard process, even those who have difficulty performing the action with chalk on the blackboard.

In *Teaching manuals and the blackboard*, Wylie (2011) describes how blackboard teaching was done in the 19th century. During science lessons, pupils were supposed to learn from nature itself by observing a frog or a plant on the teacher's desk. On the blackboard, on the other hand, the teacher could draw simple and spontaneous quick sketches of details to illustrate parts of the frog or plant that were not observable.

The goal of blackboard drawings was not necessarily to be realistic, but rather to catch the eye and to illustrate what the teacher says and what the children observe. Drawings should be done quickly and on the spot, to hold students' attention with a sense of dynamic performance (Wylie, 2011, p. 269).

The teacher's performative blackboard activity was considered important to the pupils' learning. It was not essential that the teacher's drawings were exact; the important thing was the blackboard activity in itself. Wylie calls this a 'dynamic performance' (s. 269). It involved quickly sketched drawings on the blackboard, drawn by the teacher in front of the pupils. The pupils were not just supposed to copy from the textbooks, but to observe what the teacher was doing here and now on the blackboard in front of them: 'they attempt

to write letters or words made in their presence on the board much more readily than they attempt to copy letters from the printed page' (p. 269). Wylie claims that pupils appeared to learn better when the words were written down on the blackboard in front of them by the teacher than if they simply copied them from a book.

The study *Chalk: Materials and Concepts in Mathematics Research* by Barany & MacKenzie (2014) also describes performative blackboard and chalk activity as an important instrument in the teaching of mathematics. The terms 'inscription' and 'rendering' (p. 4) are important here. I understand this to mean that the actual performance of the mathematical formulas is the visual chalk writing and that the rendering is important in enabling the pupils to follow their teacher's arguments during lessons. The physical visualisation using chalk is crucial because it takes place here and now, as a performance of mathematical calculations. This is characterised as two educational properties that are important to the pupils' understanding: 'following the argument' and 'unfolding' (p.14). This means being able to follow an argument, which can trigger understanding in pupils as they are able to follow what is unfolding on the blackboard. During the performance, the numbers emerge and the pupils take part in the process as the teacher shows the numbers on the blackboard, and the arguments are shown to be valid and transparent through the act of performance. The numbers are rendered visible by the teacher, and through his or her performance they come to be seen as valid, unlike numbers or text that is already printed in books or shown using a projector. The trick is to be able to use the blackboard as a visual surface and to be systematic and clear in composing what is performed on the blackboard. Professor Borovik (2010) also describes his relationship with the blackboard and the chalk that he uses in his teaching. It is like a performance, or a form of dance with the blackboard, chalk in hand:

I want to be able to do it quickly: as quick as I think; as quick as I talk. I want to be able to teach with my whole body, use gesture, employ pause to illustrate nuance, become as one with the board; become, in those rare moments of flow, both dancer and dance. Now the board dictates that, rather than pirouette, twist and enthuse, I click a frigid button (Borovik, 2010, p.1)

Borovik writes that he can no longer perform or dance his teaching in a way that involves the whole body and allows him to enter a state of 'flow' in which he becomes one with the blackboard. Projectors have become the standard tool in teaching situations today, and he just clicks a frigid button on a machine. The projector is unsuitable for teaching mathematics, since the task of a mathematics teacher is not just to convey information, he or she is also teaching students to think mathematically. It is therefore crucial to have complete control over the timing and tempo of the narrative. If a lecture involves calculations, which is inevitable in most mathematical disciplines, it is crucially important to let students feel the subtle play of rhythms and branch points in the procedure, claims Borovik (2010). In the actual teaching of mathematics, he needs to be able to speak and write on the blackboard at the same time. Borovik (2010) writes that he never addresses the audience while facing the blackboard, but turns to face the students every time he has something to say. Here, blackboard teaching is a form of performance art, like drama or ballet, and the blackboard surface therefore needs to be of the highest quality in the same way as the stage floor for a ballet dancer or the canvas for a painter.

The blackboard as a unique image in the classroom

In this sub-chapter, the collective term 'the unique' (Benjamin, 2013) is used as a point of departure for understanding the blackboard's position in the classroom as a place where unique images are created. Based on Benjamin's understanding of images, the teacher's hand-sketched chalk drawings on the blackboard are seen as unique images and textual presentations in their specific educational contexts. Taking this as my point of departure, I will first provide some background information in the form of a description of Benjamin's understanding of images, and then give some examples of how this can be transferred to blackboard teaching in the classroom.

The essay *The Work of Art in the Age of Mechanical Reproduction* (2013) sheds light on aspects of the unique image. The essay describes the relationship between our senses and perception technologies, with a

particular focus on photography, film and their transformations in the age of mass production. The essay also discusses the role of art in a society that focuses on the product, and the relationship between high culture and mass culture. Benjamin also touches on the relationship between art, technology and politics. The text is used here to highlight a certain understanding of images that illustrates the picture on the blackboard as a specific, unique and noticeable feature of the classroom. It has been possible to reproduce artefacts since antiquity, and perhaps even earlier. The industrial revolution brought new possibilities for mechanical reproduction of artefacts using machines. The ancient Greeks mastered the art of founding and stamping in bronze and terracotta, among other materials. Other works, such as sculptures and paintings, were always unique in antiquity. With time, printing was developed in China. Printing enabled the mass reproduction of texts and images. The invention of photography suddenly freed the human hand from its artistic function in the pictorial reproduction process. Henceforth, the human eye is looking into a camera lens, and the eye is doing the work instead of the hand. Benjamin quotes Valéry, who gave an almost prophetic description of our virtual age:

Just as water, gas, and electricity are brought into our houses from far off to satisfy our needs in response to a minimal effort, so we shall be supplied with visual or auditory images, which will appear and disappear at a simple movement of the hand, hardly more than a sign (2013, p. 216).

He describes a time where images, text or music are created by means of simple hand movements through and via technology. This flow of information and images can disappear just as quickly as a result of a new hand movement, such as clicking a mouse.

Benjamin claims that a flaw arises in connection with technical reproduction. An object's unique existence and the original itself, 'its presence in time and space' (p. 216), form the concept of authenticity. At the same time, technical reproduction provides new opportunities through the development of photography and film. Technical innovations make information available to the general public, with all the possibilities that this entails for enlightenment, information and manipulation, Benjamin writes. He summarises what is lost through the technical production of images in the concept of 'Aura' (p. 218). According to Benjamin, only the unique image has aura. For Benjamin, the decay of the aura means that 'the unique' (p. 216) disappears. Things become alike. He explains it as follows: 'To pry an object from its shell, to destroy its aura, is the mark of a perception whose "sense of the universal equality of things" has increased to such a degree that it extracts it even from a unique object by means of reproduction' (p. 219). His explanation for this is that the unique aura is no longer present in an image produced through technical reproduction. The aura is not only present in works of art or historical objects such as paintings, sculptures or other art objects, the concept can also be applied to phenomena and sensory experiences in nature.

We define the aura of the latter as the unique phenomenon of a distance, however close it may be. If, while resting on a summer afternoon, you follow with your eyes a mountain range on the horizon or a branch which casts its shadow over you, you experience the aura of those mountains, of that branch (p. 219).

The extraordinary aspect of nature experiences is always different and unique in its revelation, and this is what gives the experience its aura. What characterises art is its origins in the cult. It gained a sort of use value through the ritual and magical, Benjamin writes. This value was subsequently transferred to religious contexts and to institutions such as the Christian church. During the Renaissance, art gradually acquired a more secular position, and photography was invented three hundred years later. Mechanical reproduction is what characterises the medium of photography, and later film. Photography and film are forms that are designed for reproducibility. To ask for an authentic copy makes no sense. With photography and film, painting no longer had to document historical or political events. From then on, the art of painting was no longer bound by the tradition of representation. Impressionism and expressionism are clear examples of this. It is not natural in the present context to discuss how Benjamin in his analysis describes how the aura is reintroduced in film through the movie star; what he calls a 'personality' (p. 228). Here, Benjamin describes what applies to the production of commodities as brands, such as Apple and Coca-Cola. Benjamin describes the perception of the unique site-specific image as opposed to the mass-produced image as follows: 'A man who concentrates before a work of art is absorbed by it. He enters into this work of art the way legend tells

of the Chinese painter when he viewed his finished painting. In contrast, the distracted mass absorbs the work of art' (p. 236).

The unique image

With Benjamin's help, the blackboard can therefore be regarded as a place where teachers' unique images are created in the classroom and which can give the teaching and the classroom its unique educational identity. The blackboard can thus be so much more than a low-tech aid that can be replaced by projected images. Krause (2000) describes how the blackboard was introduced as a technical aid in classrooms nearly 200 years ago. The possibility of manufacturing blackboards industrially led to a technical and educational revolution in teaching. For the first time, teachers could communicate unique site-specific images to large numbers of pupils at the same time by using the blackboard in the classroom. All the pupils could see the unique images or signs shown on the blackboard in front of them at the same time. This created a completely new setting for teaching activities whereby a teacher could communicate his or her own thoughts directly using visual techniques. The blackboard was therefore seen as a mirror in an arena where thoughts and ideas that existed in the teacher's consciousness could be presented in large format directly to the pupils in the classroom. Wylie (2011) also describes how teachers, with the help of blackboard and chalk, could easily explain, demonstrate and correct: 'With a large surface that allowed spontaneous writing and drawing, teachers could make their explanations and corrections clear and engaging for several students at once' (Wylie, 2011, p. 261). Wylie claims that, as a technical communication medium, blackboard and chalk enabled a more spontaneous and direct form of teaching for large groups of pupils at once.

In a Waldorf education context, Johnson describes in *Chalkboard Drawing in the Waldorf Classroom* (2011) his own reflections on and experience of working with a blackboard. Johnson points to the blackboard as a unique characteristic or indicator of what was unique about Waldorf education, so that wherever you go in the world, you will 'have the same sense of "home" that is distinctly a Waldorf classroom' (p. 5). The blackboard helps to make the classroom feel like a home; somewhere safe and familiar. Johnson observed how children demonstrated curiosity and joy when they entered the classroom in the morning and glanced at the blackboard to see if there were new unique images there. The artistic approach taken on the blackboard can give rise to joy and engagement in pupils if the teacher acts from a true inner conviction, Johnson claims. The teacher's blackboard activities give him or her a natural and real authority as a teacher:

The child demands everything in a creative artistic way. The teachers and educators who encounter the child must present everything from the perspective of an artist... Whatever lives in our thoughts about nature must fly on the wings of artistic inspiration and transform into images (p. 10).

According to Johnson, the teacher's blackboard art can trigger and cultivate pupils' feelings and intellect. This can strengthen their connection to the content of lessons and to the teacher, she claims. In her paper, Johnson points to how the unique image on the blackboard can be a daily gift and a loving surprise from the teacher to the pupils, regardless of the teacher's artistic talent. Some teachers choose to draw on the blackboard while the pupils are present in the classroom, others draw when the children are not there. It is the gesture within, the movement and dynamic that are important, Johnson claims, not that the images on the blackboard are perfect or detailed. A lack of talent should not be an obstacle for the teacher. Practice makes perfect, in everyone's own unique way.

In *Room for Thinking - The spatial Dimension of Waldorf Education* (2014), Bjørnholt also claims that blackboard drawings are a unique characteristic of the classroom in that the creations of the individual teacher give the classroom a personal identity through the unique image. This creates what Bjørnholt calls 'the character of a home' (p. 120). Another key phrase in this context is 'creating a sense of belonging' (p. 121). The blackboard belongs to the specific classroom and is used by the individual teacher: 'It feels like it's mine' (p. 121). The blackboard is the teacher's visual platform, and the teacher leaves his or her aesthetic mark on it. In this way, the teacher owns and manages what happens on the blackboard. The image becomes part of the room, giving it a visual and unique identity and aura. The effort put into the blackboard drawings

is directed at the children, but it is also an outlet for the teachers' creativity and professional pride. The blackboard allows the teacher to create a personal and unique classroom, Bjørnholt claims. The blackboard gives the classroom a quality that Bjørnholt calls 'school-homeliness' (p. 121). Homeliness here does not mean making school like a private home, but a classroom home where the pupils and the teacher can feel at home. Bjørnholt also describes the blackboard images that are kept on the blackboard for prolonged periods, and explains the reason for this practice:

the idea of having the same image on the blackboard, evolving and being refined over several days or weeks as a visual support for the education, as well as a decorative, artistic element in the room, has connections to the idea of effects through 'mere exposure' (p. 121).

Bjørnholt claims that images and text that stay on the blackboard for a long time can have an exposure effect on pupils, meaning that the pupils relate at a subconscious level to an illustration or drawing left on the blackboard over time. Bjørnholt concludes that the blackboard image can provide visual support for the learning process by engaging the pupils' emotions and senses.

The blackboard as the focusing feature of the classroom

This sub-chapter takes as its point of departure aspects of the blackboard as an independent actor and materiality in the classroom, and pupils' and teachers' relationship with the blackboard in the educational context. This means properties that are integral to the blackboard by virtue of being a blackboard and related materials, such as sponges and chalk. The concept of 'focusing feature' (Sørensen, 2009) is important here. In this context, the blackboard is a focusing feature in the room and has a voice of its own. The blackboard's properties and materials and the relations that exist between the blackboard, the teacher and the pupils are therefore important in this context. Teaching aids such as blackboards are often invisible partners in a teaching context because they are taken for granted as part of the classroom context and teaching. I will provide some examples of how the blackboard as a focusing feature and a material actor is highlighted and made an active part of the teaching.

Kalthoff & Roehl (2011) describes how teaching materials, the objects themselves, are often invisible partners in the teaching context, here understood to mean that such objects are invisible in that they are easily overlooked because they are such self-evident educational instruments and teaching aids. The omnipresent big blackboard is such a natural part of the artefacts of the classroom. From this perspective, all parties are actors in the teaching situation and a fellowship arises between the teacher, pupils and the teaching objects, which in this case are the blackboard, chalk and sponge. This theoretical point of departure concerns the different roles and relationships between the parties as equal actors in the teaching context. A fellowship and a hybrid of teacher, pupils and blackboard arise that can be described as follows: 'For instance, a blackboard in a classroom requires teachers to competently use chalk in order to write and draw something on it, and at the same time directs the students' attention to its surface.' (Kalthoff & Roehl, 2011 p. 454). In this context, the blackboard has different functions and is part of different relationships depending on whether it is the teacher or the pupil who relates to it. The blackboard must fill the function of being read or drawn on and mastered by the teacher, while at the same time having the function of attracting the pupils' attention. Teaching objects here fill a different function or role for the teacher and for the pupils in the actual teaching situation. The blackboard is an object capable of attracting the pupils' attention when the teacher draws on it and the pupils at the back stand up to see better:

what's on the blackboard' or 'it's on the blackboard'. Students tend to copy the representation on the blackboard into their notepads, because 'what's on the blackboard is official' (teacher). This attitude mirrors the significance that the teachers attribute to the visualised 'facts'. Students realize how important these are and want to secure the 'facts'. In contrast to the fluidity and partial vagueness of oral classroom teaching, they seem to be 'hard facts'. (2011 p. 461)

What is written on the blackboard are facts that are copied by the pupils in their books, thus becoming visible there. The pupils become attentive to what the teacher writes on the blackboard, while things that the

teacher only says are not written down and taken note of by the pupils to the same extent. Kalthoff & Roehl describe this characteristic of the blackboard in relation to pupils as ‘eyes being “glued” to the blackboard’ (p. 462). The phenomenon arises when the teacher has written something on the blackboard, and the pupils refer to it afterwards and remember it more easily. Kalthoff & Roehl call this property of the blackboard ‘a performative effect’ (p. 462). The performative effect as a property of the blackboard can be described as follows: ‘the knowledge on the blackboard is public and shared knowledge because it was presented in front of an audience; it is short-lived and in progress because it can be corrected and erased persistently’ (p. 466). What is written on the blackboard is public and shared knowledge because it is presented in a social context in the presence of an audience. The content is characterised by being short-lived, light and fleeting, since it can easily be erased or modified.

Sørensen (2007) also explores the teacher-blackboard-pupil relationship through field studies in her article *Spatial imaginaries of technology*. She observed the relationship in which blackboard and teacher form one entity and blackboard and pupils another. She calls this a ‘one-to-many relationship’ (p. 22). That is to say: a ‘one-to-many relationship’ with the board and how what is written on the board is directly associated with the teacher. When the pupils performed a song together, she observed how the children formed a homogeneous group. She saw how the pupils paid attention to the slight movements of the chalk that the teacher made on the blackboard. Sørensen describes this as if the pupils were puppets in a puppet show where the blackboard was a controlling and big visual field in the classroom. Sørensen calls this phenomenon ‘authority vis-à-vis the pupils’ (p. 22). The classroom seemed to be divided into two areas: the area containing the pupil’s desks and the area where the teacher and the blackboard are. The blackboard represented and formed the boundary of what she describes as the ‘here’ and ‘there’ (p. 22) of the classroom: ‘“here” and “there” was created by way of the blackboard and the children attending the letters were “there” [or vice versa, depending on the perspective] (...) the geographical distance was also emphasised by the wording “come up to the blackboard” and “you can go back down to your seat” ’ (p. 22). The different areas in the room become clear when the teacher says ‘come up to the blackboard’ and ‘you can go back down to your seat’. The blackboard represents a type of materiality that creates a boundary between two interpersonal zones in the room.

In this context, the blackboard area is a visual and territorial area of the room that belongs to the teacher and is understood by the children to be a zone associated with the teacher’s blackboard activities and his or her integrity. Pupils can be invited into this area by the teacher on special occasions. When one of the pupils was allowed to demonstrate something on the blackboard, the other pupils applauded. This never happened when pupils did similar things at their desks. The pupils were given an elevated status by the other pupils, who clapped their hands. Here, the blackboard area has the status of an area linked to the natural authority of the teacher, but also to the teacher’s exposed position and vulnerability.

In *The Materiality of Learning*, Sørensen (2009) also describes how the alphabet song created a sense of fellowship among the pupils in connection with blackboard teaching. Her exact words are that the pupils ‘performed a collective’ (p. 142), meaning that the pupils became a homogeneous group through the song: ‘With her body facing the blackboard, she turns her face toward the class and asks, “Are you ready?” (...) Everyone apparently knows what is going to happen’ (p. 140). The teacher turned to the blackboard and wrote down the alphabet song while the pupils sang the letters together. All the pupils knew what was going to happen on the blackboard. Through the song, what Sørensen calls the ‘here and now’ arose (p. 143). The blackboard as a visual platform helped to create the event, the pupils’ eyes were on what was happening on the blackboard as an external place. ‘The visual materiality of the letters appearing on the blackboard constituted a geographic place to which each child’s gaze was fixed’ (p. 140). In this context, the blackboard functions as what Sørensen calls a ‘focusing feature’ (p. 140). This means that the blackboard has an inherent property; it fills a material focusing function, which was highlighted through the song.

The concept of ‘affordance’ from Gibson’s *The theory of affordances* (2015) can help us to understand the blackboard and chalk as material partners. Affordance is the phenomenon that arises between an object, natural or man-made, when it invites human beings or animals to engage in certain forms of interaction. Through this concept, a blackboard can be interpreted as an enabler of certain actions with the chalk or

sponge. Gibson takes an example from architecture about the formal function of a niche in relation to a sculpture: 'In architecture a niche is a place that is suitable for a piece of statuary, a place into which the object fits' (p. 121). This means that the function of the niche is relative to the sculpture and requires the sculpture. Gibson describe natural objects in the world in this way, objects that are part of a natural context and cannot be moved without losing their context: 'but with the furniture of the earth, some items of which are attached to it and cannot be moved without breakage' (p. 124). Objects have their place in a specific natural context, and lose their original function if moved. Things interact with each other and relate to each other in a unique manner, and leave traces in a certain way:

A hand-held tool of enormous importance is one that, when applied to a surface, leaves traces and thus affords trace-making. The tool may be a stylus, brush, crayon, pen, or pencil, but if it marks the surface it can be used to depict and to write, to represent scenes and to specify words. (p. 125)

The function of the chalk is to make traces on an underlying blackboard surface, which means that the chalk needs the blackboard, through which the chalk fulfils its function and natural meaning. This is what calls Gibson 'trace-making' (p. 125) as an opportunity afforded to the chalk. Gibson provides the following examples of the relationship between objects: 'Each thing says what it is... a fruit says "Eat me"; water says "Drink me"; thunder says "Fear me"; and woman says "Love me" (...) The postbox "invites" the mailing of a letter, the handle "wants" to be grasped," and things "tell us what to do with them"' (p. 130). There is a natural connection between the objects. For example, a postbox invites us to post a letter in it. Gibson describes how objects are in 'a dynamic relationship with the ego' (p. 131). This means that an object's form and context naturally shows how it is to be used by people. Through its form, the blackboard invites drawing on it with chalk or washing it with a moist sponge, and it invites teachers and pupils to look at it.

In a Waldorf education context, the blackboard is a visual surface, a material object, something that affords a potential action by teachers and pupils in different ways. Johnson (2011) describes the blackboard as a visual focal point in the classroom shared between teacher and pupils: 'a focal point: a beautiful drawing done in chalk at the front of the room' (p. 5). The blackboard becomes a focal point or a focusing feature at the front of the classroom. Up there on the blackboard, from the pupils' perspective, the teacher's chalk drawings can appear. It is important here that the teacher is aware of the similarity between his or her own coloured chalk and the children's crayons. Johnson claims that it may help the pupils if the teacher draws a visual frame around the image on the blackboard. In that way, the pupils can understand the connection between the boundaries on the blackboard and the edges of the sheets in their exercise books. This will create a natural connection between what happens on the blackboard and what the pupils are doing in their exercise books.

Barany & MacKenzie (2014) also describe blackboards as omnipresent material classroom props. A blackboard without text on it also serves a function: 'Even as blank slates, blackboards are laden with meaning. As topical surfaces of potential inscription' (p. 11). The blackboard is a big black surface in the room, a robust prop that is always available. The blackboard is there, waiting for interaction. In this way, the blackboard demands attention, and you can hear the characteristic sound when someone writes on it with chalk. It is often the case that teachers who share offices use the blackboard differently when colleagues are present in the room, as if they were on a stage. For a teacher, the blackboard is a physical partner: 'As a semiotic technology, the blackboard is as much a stage as a writing surface. (...) Speakers frequently dramatized particular mathematical phenomena, using the board as a prop, setting or backdrop' (p. 12). The blackboard is not just a surface for writing things on, it is also a backdrop for the person teaching whereby it becomes like a stage in front of the pupils, the place where things happen. Krause (2000) describes the blackboard as an integral part of the classroom and the teaching itself, and thus nearly an extension of the human body: 'Chalkboard are simple devices, ones that can even be replicated reasonably successfully in nature with a patch of dirt and a stick' (p. 7).

Reflections based on own research

In this second part of the article, I will present some reflections based on my own empirical research in relation to the three theoretical perspectives already described: performance, the unique, and the focusing feature. I have chosen to present the empirical findings in this way because very little research exists on blackboard activity and the science of education.

My findings are used to shed light on some aspects of the field of practice rather than to discuss the theories in relation to it. The research questions in my investigations concerned how three teachers work and use the blackboard in different Waldorf schools today. Video observation and interviews were chosen as the basis for the study. One of the research questions was: *How do Waldorf school teachers use the blackboard in their teaching?* Video observation was chosen for this part of the research process, since it concerns something that the teacher does and practises at a certain time and place on a blackboard in a classroom. The second part of the research process consisted of interviews with the observed teachers based on the video material that had been collected, transcribed and analysed. I used interviews to investigate the second research question: *What experience have you gained and what are your reflections as a teacher as regards blackboard work?* Based on these research questions, I chose a qualitative research method for my study. The findings are presented below under three theoretical categories, first by what was observed, then by what emerged during the interviews.

Blackboard teaching observed as performance

The video observations show the blackboard being used as a visual arena for small, quick and sketchy abstract signs, diagrams or texts performed on the blackboard using chalk. What stood out about these observations was how expressive and dynamic the activity was. The teacher often faced the blackboard in silence, as if he or she was engaged in creating a dynamic expressive painting or performing an expressionist dance in deep concentration and with intense focus. If I had to choose a term from visual art to describe it, a good choice might be 'action painting', in which the blackboard activity is largely based on dynamic movement where bodily gestures are prominent and the chalk is handled quickly and fleetingly. Another thing that the video observations revealed in the blackboard activities was an element of contemplative pauses. By pause I mean that the teacher was mostly facing the blackboard with his or her back to the pupils, and this gave rise to a quiet expectation and presence in the room, like an audience watching an ongoing performance. Cleaning the blackboard with the sponge was one thing that created such pauses, since the function of the cleaning is to remove chalk from the blackboard and make room for something new to emerge. The water performed an important function in this context, because the moisture from the sponge made the blackboard even blacker. The evaporation of the water from the surface of the blackboard gave rise to a process in time whereby the blackboard gradually became more grey. The cleaning process acquired a contemplative quality by dint of being a familiar everyday activity that has to be carried out to make a clean, empty blackboard possible. The blackboard ritual is thus reminiscent of the process of making beautiful traces in gravel with a rake, where the act itself creates physical traces that gradually emerge and disappear. I witnessed how the blackboard was erased in an ongoing process in time that is taking place right now.

The teachers' own perspectives on performance

Being a teacher is not about being an artist by virtue of one's profession, but more about being a communication artist. The blackboard is the teacher's tool, through which it is possible for the teacher to impart impulses to the pupils. This means that teachers can carry out activities on the blackboard in the form of blackboard teaching. Teaching activities unfold on the blackboard as a visual process in time. The blackboard activity, in which text or signs gradually emerge, allow the pupils to follow the process. In this way, the teacher arranges things so that the pupils' focus and attention are directed at the blackboard, since new activity is taking place there all the time. Maybe the pupils will not be worried about making mistakes when they draw themselves? On such a dynamic blackboard journey, the pupils cannot observe the finished material, but are given an

opportunity to participate in a journey of discovery. An important aspect of this form of blackboard activity is that the teacher must be the 'captain' and know the subject matter well. This allows the teacher greater freedom to improvise based on his or her experience and knowledge of the subject. For example, if the pupils ask questions that the teacher is not prepared for, the teacher can use the blackboard to set another course and navigate to show the topic from another perspective. This can be compared with mastering a form of improvisation. A teacher who knows his or her subject in depth becomes a medium himself. In this perspective, it is important for an educator to have a good choreographic overview of the blackboard surface. It is easy for blackboard teachers to feel exposed and vulnerable when they compare their own visual blackboard performance with that of their colleagues, because this can introduce an element of uncertainty and result in teachers not daring to engage in blackboard activity to the same extent. Uncertainty can be overcome if the teachers develop their own relationship with the blackboard as an instrument. According to the teachers, the pupils were not judgemental about their blackboard activities. The key to blackboard skills is about using the blackboard humbly and feeling that what is being done is of significance in the world. Blackboard skills can be achieved through practice, which allows the teacher to become friends with the blackboard and the associated materials, but it takes time, humility and practice to learn to play a new instrument.

The blackboard observed as a unique image

In the video observations, the blackboard served as a surface for the teachers' own and unique images in the classroom. The images gave the appearance of well-thought-through finished paintings, largely created by the teacher in the pupils' absence. The paintings were detailed, powerful and colourful decorative elements in the classroom. The chalk pictures were not erased immediately, but were used as illustrations that guided the teaching over time. These guiding images that the teachers drew on the blackboard with the pupils present were simpler and more fragmented. To choose a description from the field of visual art, the images can be regarded as frescoes that visualised the subject being taught. The pupils might ask how long the paintings would be left on the blackboard, as if they were describing the inherent impermanence of chalk paintings. Maybe they knew that the chalk can only stay on the blackboard for a certain period of time and that the blackboard has to make way for new works? In video observations, the cleaning of the blackboard had the appearance of a surface systematically painted black with a roller. It was methodically cleaned in several rounds, and thus looked as dark as a wall that has been painted black.

The teachers' own perspective on the unique images

It is a pedagogical challenge that pupils photograph the teacher's finished paintings on the blackboard with their mobile phones instead of drawing and processing the material by making their own illustrations of the subject. The special thing about an image on the blackboard is its transitory nature. Perhaps that is why pupils photograph the blackboard – to be able to preserve the memory of the images? It may be an expression of the spirit of our age, an age in which experiences are documented, shared and presented through social media. The blackboard image is not constructed, but created by a person, the teacher, who was physically present in the room and created his or her own site-specific paintings. The teachers create by drawing on the blackboard instead of using ready-made charts in their teaching. The charts, on the other hand, are 'ready mades' – finished illustrations and models of reality made by a stranger. Instead, the teachers create paintings themselves, live, and thus make it possible for the pupils to understand by allowing them to observe the unique image's visual emergence on the blackboard. A managed image process on the blackboard takes place by colours being mixed, allowing pupils to become involved in the colouring process and experience in real time which colours go together. The teacher can also challenge the pupils by telling them how difficult it is to draw what he or she is trying to visualise on the blackboard. This can stimulate pupils' engagement and a presence in their own image processes. Accuracy is an important aspect of drawing here, particularly in science subjects. The pupils can practise their powers of observation, and the teacher can help in this process by continuously describing how he or she is drawing something. The pupils' visual

input from the blackboard image can thereby be turned into own experience if they themselves carry out the process of drawing. A blackboard painting in the classroom can thus illustrate to the world the teaching that takes place in class at all times. The teacher identifies with the blackboard as if it were her own and the class's blackboard, as Waldorf schools often have 'home classrooms'. The blackboard is thus perceived as the visual imprint of the individual class teacher's teaching. The images become part of the room and give the room its visual identity, and the content of the blackboard is aimed at the pupils. If the pupils do not participate in making the image on the blackboard, the images can appear as surprises, like finished works at an art exhibition in a gallery. These works of art can delight and surprise pupils.

The blackboard observed as a focusing feature

The blackboard activity observed by means of video observation was linked to the teaching of writing. The teacher drew a simple dividing line, a chalk contour on the blackboard, that the pupils could use as a visual orientation aid. The contour on the blackboard was visually analogous to the sheet in the pupils' exercise books. In this way, the blackboard and chalk became symbols of the books and pens in the pupils' hands. Songs were also a clear sub-element in the blackboard situation. Through group singing, pupils became a homogeneous group, which created a calm work atmosphere and a focus on what was taking place on the blackboard. The concentration and focus was maintained for as long as the activity was centred on the blackboard. In this way, the pupils remained attentive and focused on what was taking place on the blackboard for as long as they were writing and working together with the teacher. The blackboard was the very hub from which the activity radiated out; it was as if the function and movement of the chalk on the blackboard functioned like a conductor's baton, and each pupil was a musician in the orchestra. The teacher was the conductor, the blackboard was the music stand with the score, and the pupils' books and pens their individual instruments. In this context, the blackboard was an object and a focusing feature in the classroom.

The teachers' perspectives on the focusing feature

The blackboard is not easily noticed because it is so silent. It is such a self-evident part of the setting that it becomes almost like a mute surface in the teaching context. But when teachers write on the blackboard, it speaks. What is on the blackboard is written down by pupils in their books to a much greater extent than things that the teacher only says, which are not written down and taken note of by the pupils to the same extent. Pupils may have difficulty remembering a paper copy that is handed to them, but an image on a blackboard is something they might still be talking about much later. In this way, the blackboard is more visually engaging than a sheet of paper. The blackboard is materially heavier than the sheet of paper, is it not? The blackboard belongs to the teacher, and there must be a boundary in the classroom to highlight this. This boundary is given physical form through and by the blackboard. The blackboard area belongs to the teacher and her integrity, but also to her exposed position as a teacher. Sometimes, the teacher will let pupils into her blackboard realm, but only under special circumstances, and it is important to be fair and ensure that all the pupils are allowed a close encounter with the blackboard. The blackboard is also respected by pupils as an arena belonging to the teacher, the teaching and the aesthetic expression. The blackboard's position as something that calls for interaction is manifested in a certain way in how the pupils expect something to happen on the blackboard. During non-blackboard-related teaching activities in the classroom, such as ring games and similar activities, the teacher does not want the blackboard to be visible as a visual distraction. The blackboard can then be covered by two side panels, and thus 'withdraw' from the classroom. This is about limiting the blackboard's possibility of catching the pupils' attention, but the opposite can also be done: the blackboard can be opened up if the teacher wants the pupils to see what is written on it. The blackboard becomes a visual focusing feature at the front of the classroom, and teachers can feel how the blackboard demands their beautiful chalk drawings to be on show to the pupils. When it comes to the practical aspects of blackboard use, it is important to be aware of the role and visual effect of the blackboard when leading pupils through a drawing process: the coloured chalks can function as visual colour codes where the pupils can learn how different colours have different meanings, as in a musical notation system. The sensory,

material quality of the chalks and blackboard are interlinked with the dynamic of the black surface, where the teacher can light up the blackness by colouring surfaces and creating beautiful pictures, in contrast to the dry and informative lines made by whiteboard markers. In the teacher's relationship or love affair with the blackboard, it is important that it be kept clean, so that it can serve its purpose as a Tabula Rasa.

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