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'Exemplary in teaching' outside school - a case study of Open School in Denmark

Lars Emmerik Damgaard Knudsen & Eva Gjessing, Aarhus University

Abstract

The change of learning environment is pivotal when schools and local organizations embark on educational partnerships. The local organisations offer specialized knowledge to schools, and as classes move out of schools the contribution of the physical setting is crucial and central to this offer. We find this central to understand the didactical potentials of learning outside school and therefore explore how local organizations exploit their specific physical settings and the materials in situ for educational purposes and how they bridge the gap between their specialized knowledge and the students' general academic knowledge and prerequisites. Through our case study we find that teaching outside school has the capacity of exemplary in teaching, but that this quality widely depends on the didactics being conducted by the educator and his/her ability to relate the learning content to the physical setting and materiality in situ.

Introduction

The Open School program (Åben skole) was introduced in the reform of the Danish school system in 2014. Open School promotes students to visit a local organization or business, moving teaching out of the classroom into a new learning environment that offers materials in situ as teaching aids. It is defined as a collaboration between teachers and educators from local organisations and rests on the assumption that the site and the knowledge of local organisations are educationally valuable. Research shows that when bringing schools and local communities closer together it can enhance the creativity, critical thinking, knowledge and social responsibility of students, as well as provide a more tangible learning environment than the traditional classroom (Resnick, 1987; Rickinson, 2004; Hooper-Greenhill, 2007; Gruenewald, 2008; DeWitt and Storksdieck, 2008; Jordet, 2010; Hein, 2012). Research in this field has raised questions about the practical and principal implications of the political intentions on the collaborations between teachers and local organisations. Among these issues is a lack of clarity of what the didactic methods and requirements are. (Knudsen, 2020a; Pors, 2016; Chemi, 2017). Questions that have also been confronted with similar programmes, such as the

Cultural Rucksack initiative in Norway (Breivik & Christophersen, 2013) and the *Creative School* programme in Sweden (Myndigheten För Kulturanalys, 2013). Researchers on field trips such as Rebar (2012) concludes that teachers seldom receive training in planning and conducting field trips despite that the learning outcome of field trips are well documented (Anderson et al, 2006). Moreover, learning outside school in what Peacock & Pratt (2011) generally terms as learning spaces can challenge young people e.g. the structure and design of layouts and buildings can often distract learners from focusing on explicit learning objectives, and tensions between conflicting goals of Learning Professionals¹ and between different approaches to learning in such contexts.

Also researchers in the field of outdoor education have identified a need to develop didactic theories that address the use of the outdoor learning environment (Bentsen et al, 2009). In contrast to outdoor schooling, field trips and excursions, the intentions of the Open School program entails a mandatory collaboration between the teacher and a local organisation. This collaboration contains two essential pedagogical challenges: that teachers must embark on partnerships with the local organisations on teaching, and that different kinds of professionals are allowed to teach.

We draw upon the German educationalist Martin Wagenschein (1956/2010). His theory of how to use places and materials in teaching has continuously influenced European educational didactic thinking in particular the research and teaching practices of science in outdoor milieus (Graf, 2013; Westbury, Hopmann & Riquarts, 2010). Wagenschein is part of the tradition of the educational use of outdoor facilities in the line of: teaching aid (Rousseau, 1762/1979), schools connection to the society (Dewey, 1916), local environment as educational point of departure (Gruenewald, 2003), a reminder of humans place-based existence (Casey, 2009), a learning environment (Jordet 2010), an integrated part of teaching practice (Mulcahy, 2019), and an ecology for learning (Judson, 2020).

We begin by introducing the Open School Program followed by an overview of the interpretations and didactic practices of Open School (Knudsen, 2020a). This is followed by a presentation of Wagenschein's didactic theory of the exemplary in teaching and an outline of the case study methodology. The cases – the first at the Danish Architecture Center (DAC) in Copenhagen, the second at the Rønnebæksholm art museum in Næstved – are analysed using Wagenschein's theory. The cases demonstrate the didactic challenges and possibilities that teachers from local organizations experience and how they operationalize the learning environment - or not.

¹ Peacock & Pratt (2011) refers to Learning Professionals (or LP) when they speak of a common group of educators who young people meet outside school such as schools' liaison officers, communication assistants, explainers, guides, wardens, rangers, etc., many of whom have a background in education, as ex-teachers or trained teachers.

Didactic interpretations of Open School

Open School is a new term in Denmark, but the basic principles of teaching outside school rest on educational philosophies such as those developed by Jean-Jacques Rousseau's (1762/1979) and John Dewey (1916). Both advocated for an experience-based approach to learning and a close relation between schools and local communities, including learning and teaching in authentic milieus. In Denmark, the Open School programme was introduced as part of the 2014 reform of primary and lower secondary education (UVM, 2019; Retsinformation, 2019). However, an underlying educational paradox challenges the general idea of teaching outside schools. The modern word 'school' originates from the ancient Greek '*schola*', originally meaning 'freedom from production' – a freedom that privileged children in ancient Greece could use to learn how to think about nature, art and science in more abstract forms. In the contemporary Open School programme, however, production (in a broad sense of the word) is reintroduced to school activities as local organizations tend to introduce the students to forms of production while teaching (Knudsen, 2020a; Rosenbäck & Knudsen, 2020). This paradox is generally observable when educators from local organizations try to balance their specialized knowledge focused on production with the school's focus on teaching and learning. This results either in lessons where students have difficulties relating to the content in alignment with their existing subject knowledge, or in lessons that resemble a conventional classroom, rendering the idea of visiting local organizations pointless (Knudsen, 2020a, 2020b).

Strategies addressing the inherent paradox of teaching outside school

The partners involved in the implementation of Open Schools (teachers, headmasters, local organizations, municipal officials) navigate this paradox by interpreting the Open School as a framework for promoting either students' 1) *Bildung*², 2) learning of curricular content, 3) development of problem-based competences or 4) creativity (Knudsen, 2020a). Inspired by the cultural structural analysis of Thomas Højrup (2002) and the general didactic of Frede V. Nielsen (2006) these different interpretations represent different types of didactics and teaching in Open Schools, based on the different kinds of approach visualized in the model below (see fig.1).

² *Bildung* is German and means the development of the students' self in relation to existing cultural, natural and societal surroundings, which includes interpretations of and dialogue with history and the development of a sense of fundamental responsibility (Klafki, 2007).

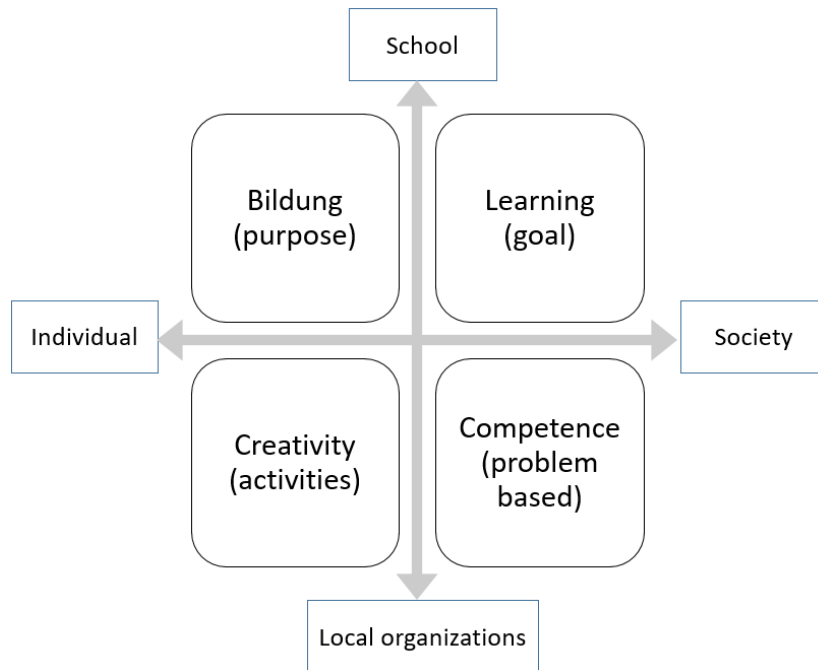


Fig. 1 Didactic positions in interpretations of Open School (Knudsen, 2020a, 2020b).

This model visualizes how four general interpretations of the Open School relate to each other, all practised among schoolteachers, teachers from local organizations, municipal departments, government ministries and educational researchers (Knudsen, 2020a). The Open School interpreted as a framework for promoting *Bildung (purpose)* (Hammershøj, 2020) is a relationship between school and individual, which means Open Schools are viewed by certain practitioners as a means for supporting students' development through encounters with different cultural settings; i.e. a focus on democratic citizenship (Jensen, 2020). When Open Schools are interpreted as promoting *learning of curricular content (goal)* (Krøgholt, 2020), meanwhile, the relationship between school and society is emphasized to illustrate how what is taught can be adapted to and interpreted in light of society's varying demands and goals; i.e. a focus on subject-specific content. Promoting students' *competences (problem-based)* is an interpretation of the Open School that is often reflected in local organizations' focus on societal issues and on students' abilities to use knowledge to create social change; i.e. a focus on problem-based projects, such as the integration of immigrants in the local community (Levinsen et al, 2020). Finally, *creativity (activities)* (often identified as the intentions teaching artists bring to Open School) is an understanding of Open School focused on the students' individual work and development that is often practised by artists and collaborating art museums; i.e. a focus on the interpretation of works of art (Knudsen, 2020a, 2020b; Haastrup & Shakoor, 2016).

In summary, each of the four didactic interpretations leads to specific choices of how to teach the class curriculum, including how to use the physical settings and benefit from the specialized knowledge in local organizations. Martin Wagenschein's general didactic principles on learning through examples and experiments can specify how all four interpretations can be conceived, planned and carried out. When didactically employed, the learning environment offers the students' academic access to a topic and clarifies how taking teaching out of the school in all four interpretations could be understood.

The general didactics of Martin Wagenschein

Martin Wagenschein (1896-1988) was a German researcher, educationalist and physics teacher whose work contributed to the development of the German educational system from World War II to the present day (Graf 2013). One of Wagenschein's most well known papers is *Zum Begriff des exemplarischen Lehrens* (Teaching to Understand: On the Concept of the Exemplary in Teaching) 1956/2010), which has a central position in the European didactic tradition and has inspired research in the field of general didactics for years (Graf 2013). A central issue for Wagenschein (2015b), still relevant today, is that of *Stof-Fülle* (curriculum overload) in schools. According to Wagenschein (2010), and in line with the reform pedagogy of John Dewey (1916), it is not the size of the curriculum that results in successful teaching; it is the depth of students' learning that matters and this is primarily provided through experimentation.

Relevant to the issue of how local organizations can approach teaching in Open School, Wagenschein argued that teachers should focus on three closely related principles: 1) the *exemplary in teaching*, 2) *the genetic principle*, including *Einsteig* (access), and 3) *Socratic dialogue*. Wagenschein suggested (as also argued by David Gruenewald, 2008) that places and materials outside school have the potential to be used as authentic teaching aids. These can make complex phenomena more tangible and thereby enable the teacher to bridge the gap between his or her specialized knowledge and the students' more general academic knowledge and prerequisites. The *exemplary in teaching* is a didactic principle that rests on the idea that examples generated within the immediate environment have a greater cognitive, educational power than precepts (Wagenschein, 2010). Presenting examples using specific places and materials allows the teacher to illustrate and explain the causalities within a particular topic, to relate these examples to other parts of the subject and to put them into perspective. Wagenschein argues that the *exemplary in teaching* motivates students to embark on individual investigations and helps them understand even difficult content. The *exemplary in teaching* is guided by *the genetic principle*, according to which students' learning takes place at a pace driven by the students themselves. As a matter of becoming, students must learn to solve problems and develop a

critical sense – all of which constitutes the student's *Bildung* (Wagenschein, 2010). *The genetic principle* is Wagenschein's attempt to bridge the gap between school-knowledge and everyday-knowledge; through this principle, he strives to unite the logical and psychological aspects of teaching (Jørgensen, 2013). He describes it as a focus on an exploratory, investigative form of teaching wherein teachers support their students in posing and systematically finding and qualifying answers to their own questions (Wagenschein, 2010).

Wagenschein (2010) states that all new topics should be introduced in an everyday language to support student participation and secure the students an *Einsteig* – a gateway to the subject. He suggests that teachers should gradually introduce the terminology related to the particular topic and let the students become familiar with the substance through critical and practical testing of the questions they raise. This will encourage a shared sense of participation, ownership and a deeper understanding among students. Examples are used by the teacher to illustrate the complexity of and everyday connections to the phenomena chosen by students; for instance, the study of natural erosion and its consequences. The teacher engages in a *Socratic dialogue* (Nelson, 1929) with the students to scrutinize all possible explanations suggested in the process. The teacher keeps his/her distance as long as the students are able to reflect, intervening whenever they are stuck (Wagenschein, 2010).

Empirical data and methodology

This comparative case study (Simons, 2009) is based on the research project *The Open School programme: Exploring the educational qualities and challenges* (2015-2019), which includes fieldwork in the form of observations, photos and interviews relating to 55 Open School lessons (Kvale, 1996; Pink, 2009). The central research question was '*what is Open School?*' with a focus on describing the different didactic interpretations of Open School across ministries, municipalities, schools and local organisations that exist. Data was transcribed and analysed using the NVivo qualitative data analysis software. All data collection followed the Danish Code of Conduct for Research Integrity (Ministry of Higher Education and Science, 2014). Because of the research on Open School we found that the operationalization of the learning environment was pivotal to examine (Knudsen, 2020b). In this article, we examine the relations between teaching and the learning environments outside school that is central to the basic idea of Open School. For this study, we have chosen to focus on the teachers' and educators perspectives to be able to understand the possibilities and challenges new learning environments offer. From this body of empirical material, we have chosen two cases based on the criteria of: how do local organizations 1) exploit their specific physical settings while teaching? 2) bridge the gap between their specialized knowledge and the students' general academic knowledge and prerequisites? Moreover 3),

how can comparison between the cases illustrate the didactic challenges and potentials of 1) and 2)? Following these criteria, both cases identify issues observable across the fieldwork and hence qualify as what Flyvbjerg (2006) calls *critical cases*. Which means they are analytically generalizable beyond the cases themselves as they illustrate challenges and opportunities familiar to all schoolteachers and educators from local organizations participating in Open School activities (Knudsen, 2020b). The cases are written as thick descriptions (Geertz, 1973/2000; Pink, 2009) based on observations, conversations, photos and interviews related to a three-hour lesson at the Danish Architecture Centre (thick description written by Eva Gjessig) and a four-hour lesson at the art museum and manor house Rønnebæksholm (thick description written by Lars Emmerik Damgaard Knudsen). The observations were carried out as non-participatory semi-structured observations (Pink, 2009) allowing the researcher to follow the observation-guide sensitive to the situation. The observation-guide focus on (selected points): *Where are we? What are the students asked to do? How do the teachers and educators employ the learning environment in his/her teaching?* Interviews with teachers and educators were conducted in relation to the observations and were semi-structured following the guide with a focus on (in selected points): *What is the lesson about? Why have you chosen this particular place? What materials are the students asked to use? How does that support the intentions of the lesson?* Each class and lesson is unique, and the comparisons are hence focused on the general aspects of the relations between teaching and the environment.

From the broad perspective of the intentions and paradoxes of Open School (see figure 1), we apply Wagenschein's theory as a strategy to analyse the didactics of the cases framed by the challenges and opportunities inherent to teaching outside school. The concepts of the *Exemplary in teaching*, *The genetic principle*, *Einsteig* and *Socratic dialogue* allow us to examine how the environments and materialities of the particular learning spaces are used didactically, as well as how the specialized knowledge relates to students' prerequisites.

Analysis

In the following, we present and analyse a case from DAC and a case from the museum at Rønnebæksholm. Placing the cases within the model of '*Didactic positions in interpretations of Open School*', the didactic intentions at DAC are focused on developing students' creativity and competences through a problem-based form of teaching, while the educators at Rønnebæksholm promote curricular content in their development of creative activities. As we will illustrate using Wagenschein, the educator leading this particular workshop at DAC was severely challenged by the poor facilities

for conducting a problem-based form of teaching, while the educator at Rønnebæksholm benefited greatly from the museum's facilities in promoting learning and creativity.

Case: Danish Architecture Center, Copenhagen

The case takes place at the Danish Architecture Center (DAC) within the teaching department DAC & LEARNING. DAC & LEARNING offers a variety of workshops in order to expand students' knowledge of architecture and urban landscapes. DAC & LEARNING targets students in primary and secondary school, as well as higher education, and is intended to correspond to the age and educational level of the students. The educators at DAC are architecture students, student teachers and university students. The workshop we observed focused on sustainable city planning and lasted three hours including a short break. The visiting class of fourteen students aged 13-15 accompanied by four teachers came from a school for children with special needs. The workshop would normally be held at DAC's workshop space designed as a laboratory with models, posters and various architectural tools, but unfortunately, the laboratory was double booked and the workshop therefore unintended took place in one of DAC's flexible meeting rooms.

Thick description

At 9.15 a.m. the DAC educator, Mike, leads the group of students and teachers from the entrance through the DAC gift shop and up a staircase to the meeting rooms in the attic. Passing the shop, the students look with interest at the books on architecture and town planning, the scale models of buildings, playful structures and smaller pieces of design. Entering the meeting room, with its bare walls and a longitudinal glass wall towards the corridor, the students' attention is drawn to the modern light fixture in the ceiling and a pair of designer chairs in the room. The chairs and tables are set up for a business meeting with one big table in the middle of the room. As some of the boys take a seat in the chairs, they imitate a "real businessman with a cigar". A teacher explains to Mike (the educator) that he had too little time to prepare the class for the workshop with the materials sent to the school in advance. A backlit whiteboard is fixed to the wall at the end of the room. Mike starts a PowerPoint presenting the theme of the day, 'Sustainable cities', but he is interrupted by a student that leaves the room followed by a teacher. Mike continues to show drawings, photos of cities and graphs illustrating issues such as population growth, pollution levels and waste accumulation. He presents examples of how to solve sustainability problems such as the Supertrees in Singapore, green areas with permeable pavements and lakes for rain overflow in cities. Being seated around one big table, the students tend to look more at each other than at the screen and at Mike. Through the glass wall, they see a table with refreshments being prepared and, as the presentation ends, the students slip out into the corridor to have some tea. However, the table is not set for them, but for

a meeting next door and the students are quickly called back. Mike and the teachers divide the students into groups, moving the table apart. Each group of students are given a photomap of a particular area in Copenhagen in which they are asked to discuss and design green solutions. An initial brainstorm session is organized as a game with cards handed out among the students. Each card contains information and questions about sustainability issues such as excessive atmospheric CO₂ levels, over-consumption and waste accumulation and extreme weather conditions leading to torrential rain. The idea is to make the students talk about these issues. However, the students find it difficult to read the text on the cards and hence to fully understand and discuss the issues. Many of the words are unfamiliar to the students and must be explained by the teachers or Mike. After the brainstorming session, the students are asked to draw their suggestions and ideas for a more sustainable city on tracing paper covering their city map. Pencils in different colours are placed on the tables and rolls of sketch paper are handed out.



Pictures 1 and 2 Students passing the gift shop walking upstairs to the meeting rooms. A student mapping out sustainable initiatives at a plan of the city area. Photos by Eva Gjessing.

With help from the teachers and Mike, some of the students start adding green areas, football pitches, parks and green roofing, and rivers and lakes to the plans. Other students do not take part in the group work and conflicts and social tensions arise. A teacher explains to me, the observer that the students' bad behaviour is caused by a general sense of frustration of a recent change of teachers at the school. It takes a lot of effort to get the students to complete the task and to make a final presentation and evaluation of the workshop. The students are eager to get out of the room and to have lunch.

Analysis

The workshop at DAC facilitates an understanding of city planning and encourages the students to develop creative solutions to existing challenges of sustainability in larger cities. However, the observations show difficulties in implementing the intended problem-based approach. The difficulties demonstrate that the workshop does not match the participating students' existing knowledge, competences and abilities. It also highlights the necessity of preparation and use of the materials achieved beforehand in order to succeed with a long-term *genetic* teaching method for deeper learning. The workshop's focus on sustainability, on the risks facing cities as a result of climate changes and how architects work to find solutions, is an issue that fits with a curriculum in geography and could have given ground for the didactics of *exemplary in teaching*. Meanwhile, the materiality of the office space neither gives the students a sense of the creative work of an architect or a gateway, an *Einsteig*, for understanding the topic's relevance to the everyday life of the students. Visiting DAC therefore ends up having minimal meaning. The workshop could just as easily have taken place in a regular classroom and probably with fewer distractions. The educator tries to introduce the terminology of sustainability to the students by starting a game intended to encourage the students to discuss and relate the content to their own experiences. However, the students have difficulties understanding this new vocabulary including the text written on the cards and their *Einsteig* to the topic fails. During the PowerPoint presentation, the educator neither pauses to include the students' knowledge in a dialogue on the issue nor does he ask questions that relate to their own experiences of sustainability. A *Socratic dialogue*, which could have made the students draw parallels from the pictures of Supertrees in Singapore to their own neighbourhood, is not established. As a result, the task remains rather abstract to the students and their focus is easily disrupted.

Case: Rønnebæksholm art museum

This case takes place at Rønnebæksholm, a manor house outside the Danish town of Naestved that dates back to the 14th century and today houses an art museum. Rønnebæksholm is known as the shared mid-19th century home of former owner Marie Toft and the famous politician, minister and poet N.F.S. Grundtvig. Two art schools have moved into renovated barns, creating a milieu of museum, arts and education (Rønnebæksholm, 2019). A large number of school classes visit Rønnebæksholm each year for lessons on current art exhibitions, Grundtvig, Christianity and Marie Toft. We observed a visit of students from one 3rd and one 4th grade class from a school in Copenhagen, accompanied by three teachers and two teaching assistants from 10 a.m. to 2 p.m.

Thick description

The museum's educators Maria and Diana greet the students in the barn. The two classes and their teachers quickly enter the room and fill it with laughter, talk and play. Maria gathers the students on a small stage and hands out the lyrics to a song. Maria: *"I know you know this song and have been practising it back home. Let's send your teachers outside and rehearse it together, and then invite them back in later for a concert. But you have to do what I tell you, alright?"* The class accepts; they rehearse and perform the song and the teachers applaud and smile. The classes have been preparing for their visit for some time, including this song, and they continue working with the topic when they return to school. After the concert, the students are divided into two groups. One group stays with Maria in the barn and another follows Diana outside; after approximately 45 minutes, they swap. Diana takes her group to see the garden and "Friendliness", a pavilion commissioned by Marie Toft in tribute to Grundtvig. She asks the students about the period when Marie and Grundtvig lived: What was different in Denmark? What did the country look like back then? The students' answers follow various tangents, but Diana acknowledges them all. After five minutes, she asks the students to interview each other about stories from their parents or grandparents' childhood. As they begin to do so, they get up and spread out on the park lawn. After a while, Diana gathers the group again and leads them to the "Friendliness" pavilion, instructing them: *"Try to imagine that every step we take on our way to the pavilion is a step back in time, so by the time we get there, we will be 162 years back in time."*



Pictures 3 and 4 Students talk about stories from their grandparents and enter the Friendliness pavilion. Photos by Lars Emmerik Damgaard Knudsen.

When they arrive, she opens the solid wooden door with a big old iron key. The students are eager to enter the old building, which resembles a small castle. They comment on the interior – a table, two chairs, a bed and a few posters with information about Grundtvig and Marie Toft - before running up the stairs in the small tower and out onto the roof deck. Diana talks about the symbolism of the trees planted in the park and the church nearby before the two groups

switch. The group that stayed in the barn with Maria learned about the life of Grundtvig and his marriage to Marie Toft. Maria brings out an old, large suitcase. She pulls out dolls, an old bible and other props, handing them to the students. They each pick a prop and keep it throughout the session. Maria asks what they are holding and what it makes them think of. She relates their input to the overall story about the challenges Marie Toft and Grundtvig faced before and during their marriage. The students ask questions about what Denmark was like in the mid-19th century and what life was like for children - especially Marie Toft's daughter, who inherited Rønnebæksholm when her mother passed away. Maria either answers herself or opens the questions for other students to answer. When both groups have completed the sessions with each of the museum educators, they convene in the main building to visit the chambers once inhabited by Grundtvig and Marie Toft.



Pictures 5 and 6 Students prepare and present their shadow pictures of Marie Toft and Grundtvig. Photos by Lars Emmerik Damgaard Knudsen.

Next, they head to the cellar, where students interpret the love story between the two famous former residents using shadow pictures to depict scenes from Marie Toft and Grundtvig's lives. The lesson ends back in the barn, where they sum up and say goodbye.

Analysis

The lessons lead the students through various parts of the estate as they work with Grundtvig and Marie Toft's story by singing, listening to historical facts, relating the past to their own lives, seeing authentic buildings, telling stories and making pictures. Applying Wagenschein's didactic perspective, the lesson offers the students an *Einsteig* through a *Socratic dialogue* because the history and life of Grundtvig and Marie Toft is introduced to them through the teachers' preparation and the museum educators' continuous incorporation of the students' own questions, observations and

experiences with the surroundings. The museum educators refrain from placing the students in classroom-like surroundings with chairs, tables and tasks. Instead, they use the *exemplary in teaching*, with visits to the barn, the pavilion, the main building and the cellar, where the students can study exemplary parts of the life of Grundtvig and Marie Toft to understand its historical context. Together, they perform Grundtvig's song for Marie, discuss the time and place related to the various props they are given and cut pieces of paper into characters in the shadow picture workshop. Places and materials are not only used as a replacement for fact sheets, tests and an overloaded curriculum; they are used to engage students in an interpretation of Grundtvig and Marie Toft's story in a *genetic* way of learning. The educators focus on telling the story of Grundtvig's life and the time he spent at Rønnebæksholm with Marie Toft. The students learn about national and regional history, conditions, relations and the causality of events; as such, the lessons are well aligned with the school history curriculum. This is conducted via a number of creative activities involving singing and making pictures. The educators encourage students to experience the materiality of Rønnebæksholm, express themselves and interpret Grundtvig and Marie Toft's story.

Discussion

In this study, we have found that the teaching environment plays a clear role for learning outside school, which follows the general state of art in the field (Resnick, 1987; Rickinson, 2004; Hooper-Greenhill, 2007; Gruenewald, 2008; DeWitt and Storksdieck, 2008; Jordet, 2010; Hein, 2012). Through the didactic theory of Wagenschein and the examination of two cases, we are able to describe in detail the didactic risks and dangers as well as the potentials and opportunities when teaching is moved outside school and local organizations and teachers collaborate. Through the theory of Wagenschein we have illustrated how and why teaching can be challenged and enriched by moving teaching outside the classroom. Though these facilities potentially offer access to specialized knowledge and materiality in situ that is normally out of reach to the teacher, the cases emphasize how the spatial surroundings do not always support these intentions. The detailed analysis reflects how Open School as a mandatory programme in Denmark is both promising and disturbing, as moving out of school is no guarantee for educational success. We have found explanatory power in Wagenschein's general didactic theory as the notions of *exemplary in teaching*, *genetic principle*, *Einsteig* and the *Socratic dialogue* has addressed the general question, posed by Pors (2016), Chemi (2017) and (Bentsen et al 2009), of how should teaching be conducted outside school. Our study also contributes to the research of Breivik & Christophersen (2013), who discusses different issues of collaborations between teachers and local organizations. As Breivik and Christophersen conclude, a general issue is the feeling of uncertainty of what role the teacher and educator

should take. Our study shows the same results and adds details about the relations to the students' learning, which are at risk of dropping when visits outside school are ill prepared as in the case of DAC. On the other hand, well prepared visits and tight collaboration between teachers and educators seem to deliver positive learning results, as in the case of Rønnebæksholm, where the students are offered *Einsteig* through both *exemplary in teaching* and *the genetic teaching principle* as well as a *Socratic dialogue*.

Confronting the validity of our case study, we consider both cases as unique but still representing generalizable analytical points about teaching outside school. However, the study faces explanatory limits due to the choice of examining only two cases and to the narrow focus on teachers and the educator's perspectives leaving out students' views and experiences. More cases and participants' views would strengthen the reliability of the study. Furthermore, thick descriptions can be subject to critique for merging researcher's views with participants' behaviour and experiences and the validity is hence questionable (Jorgensen, 2009).

Nevertheless, we maintain that both cases are important examples of how and why local organizations and their educators are able (or not) to exploit their environment and specialized knowledge in supporting learning outside school. This is due to general observations of poor learning facilities and ill prepared classes made in the general fieldwork of the project (as reported in Knudsen 2020a, 2020b) and generally addressed in the literature of learning outside school (DeWitt and Storcksdieck, 2008; Rosenbäck & Knudsen, 2020). Furthermore, we learned that the model of *Didactic positions in interpretations of Open School* constructs a four-piece matrix risks excluding other relevant interpretations and losing sight of the interconnections between each position. On the other hand, it places schools and local organizations on an equal footing and visualizes how different school outcomes are possible through partnerships between schools and local organizations. In this light, we accept the model's limitations in providing a clear picture of the relations and interplay between different educational positions.

Conclusion: The exemplary in teaching outside school

Programmes to move teaching outside school, such as the Danish Open Schools Programme, are debated in terms of their purpose, relevance and didactics (Rosenbäck & Knudsen, 2020). In this article, we have focused on asking: *How do local organizations exploit their specific physical settings and the materials in situ for educational purposes? How do they employ the learning environment when bridging the gap between their specialized knowledge and the students' general academic knowledge and prerequisites?*

In the analysis of the two cases in this article, we find that teaching outside school has the capacity of *exemplary in teaching*. This capacity though is largely dependent on the educator's didactic competences to relate the curriculum to the physical setting and materiality in situ. At Rønnebæksholm, the *exemplary in teaching* is facilitated through a set of creative activities that enable the students to adapt to the new knowledge and express their interpretations of the story of Grundtvig and Marie Toft. In this manner, the cultural material setting is used systematically through creative and inclusive activities, providing a way for the educators to bridge the gap between their own and the students' knowledge. Both educators at Rønnebæksholm use the different buildings, interiors and various props to connect the content to the students' own backgrounds and create a *Socratic dialogue*, with an *Einsteig* for the students. When deprived of this possibility, as it happens to the educator at DAC, we see how the physical setting can actually counteract the qualities of the exemplarity in teaching. The office space in which the workshop is held does not support the students' understanding of the profession of an architect; nor does it support the educator in adapting the lesson to the class of students with special needs.

In the case at DAC, we also saw the negative result of schoolteachers ignoring the need for proper preparation for the workshop as stipulated by DAC and thereby falling short to apply *the genetic principle* to the workshop in an extension of the learning before and after the workshop. Ill prepared, the students became insecure and unmotivated, as the content of the workshop did not match their level of ability and knowledge. An additional obstacle was the shortage of time whereby Wagenschein's *genetic principle* was not met leaving out time for students' questions when encountering the unknown surroundings of the exemplary in teaching.

Even though the two cases represent different interpretations of Open School, it is clear that the educator at DAC has more specialized knowledge than the educators at Rønnebæksholm, but the physical facilities at the latter are far better used for promoting the *exemplary in teaching*, maintaining a *Socratic dialogue* and ensuring the students' *Einsteig*. As such, teaching students the specialized knowledge of a local organization seems to be fundamentally dependent on how well the physical facilities are used. To ensure that the foreign places and new forms of knowledge match the students' prerequisites when teaching outside school, Wagenschein offers valuable didactic knowledge.

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