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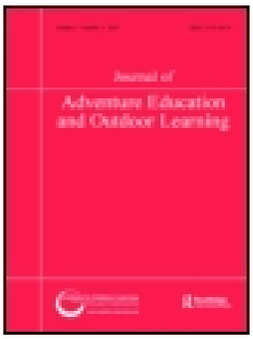

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Student teachers' views on outdoor education as a teaching method–two cases from Finland and Norway

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ABSTRACT
Outdoor education has many benefits for students, and the interest among teachers in this teaching method is growing. The aim of this study is to examine Finnish and Norwegian student teachers' views on outdoor education as a teaching method. Student teachers from one teacher education programme in Finland (n = 66) and one in Norway (n = 32) participated in the study. A web questionnaire with both multiple-choice and open-ended questions was used, and the data was analysed by statistical analysis and content analysis. The results showed that both Finnish and Norwegian student teachers have different kinds of previous experiences with outdoor education, although the Norwegian experiences were mainly around outdoor life in general. Both student groups expressed positive views on outdoor education, but the views of the Norwegian students were somewhat more positive. However, they both noted some negative aspects of teaching outdoors and communicated an insecurity regarding teaching outdoors.

KEYWORDS
Outdoor education; outdoor learning; teaching method; teacher education; student teachers

Introduction

There has been a growing interest in outdoor education in recent decades (Sjöblom and Svens, 2019; Bentsen, Mygind, & Randrup, 2009; Wilhelmsson, 2012). Outdoor education can be defined in various ways, but the basic principle is that education takes place outside of the traditional classroom, either in a natural or a cultural environment. This form of education is characterised as learner-centred, often collaborative, and one in which both the environmental and social context play a significant role (Waite, Bølling, & Bentsen, 2016). Promoting outdoor education is also seen as a strategy for opening schools during and after the Covid-19 pandemic (Mulvahill, 2020).

The tradition of outdoor life is similar in the Nordic countries (Svarstad, 2010), and a considerable part of the population spends time outdoors regularly with family and friends hiking, fishing, picking berries, foraging for mushrooms, and so on. Spending time at a cottage nearby a lake, the sea, in the woods, or in the mountains is also common. According to a national survey in Finland on recreation in nature (Natural Resources Institute Finland, 2013), 96% of the population aged 15 and over use nature for recreation at least sometimes, and just under one-third do this daily. Hence, the socio-cultural background when it comes to outdoor life in Finland and Norway is similar, but, in Norway, hiking and outdoor life is more deeply rooted as a family activity and can even be seen as a ritualised activity (Svarstad, 2010). The forms of outdoor life in Norway vary and develop over time, although the popularity of some activities, such as hiking, is stable, and this activity plays a central role in

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recreation among children and youth (Wold, Skår, & Øian, 2020). However, the decrease in the availability of nearby nature for play, and therefore the spontaneous contact with nature, is worrying (Skar, Wold, Gundersen, & O'Brien, 2016). The same tendencies can also be observed in Finland.

In the Nordic countries, the conditions for outdoor education in natural environments are favourable since the countries are generally sparsely populated. Hence, the distances to suitable sites, such as parks, other urban green areas, and forests are short from many schools and preschools. The educational context in Finland and Norway is also similar in many ways. In both the Finnish (Finnish National Board of Education, 2016) and Norwegian curricula (Kunskapsdepartementet, 2013), different forms of teaching in different learning environments are encouraged, including nature and outdoor education. In Finland, the focus is on outdoor education in general while, in Norway, the focus is more specifically on outdoor life and nature. In both countries, teaching outside the classroom and in nature is part of the physical education curriculum. Contrary to the Finnish curriculum, the Norwegian one emphasises lifestyle and outdoor life, and, in the higher grades, outdoor life is an eligible subject. The aim of this subject is that, through their enjoyment of the outdoors, pupils develop a respect for nature and deepen their understanding of nature's diversity. In addition, it is meant to enhance pupils' physical and mental health through engaging in recreation and activities in nature (Utdanningsdirektoratet, 2020). Furthermore, nature and outdoor education is mainly related to environmental studies (an integrated subject combining biology, geography, chemistry, physics, and health education) in Finland, and to science in Norway. According to the national curricula, in environmental studies, pupils go on outdoor excursions and do field research, and in science, pupils participate in fishing, hunting, and farming, and practice outdoor life. Table 1 compares outdoor education in Finland and Norway.

In both countries, besides schools, there are external organisations offering outdoor education, such as Nature Schools (see more in Author, Sjöblom and Svens, 2019). Nature Schools emphasise the role of outdoor education in promoting sustainability learning, and a recent doctoral thesis concerning sustainability in Finnish basic education showed that teachers see outdoor learning as a tool for achieving sustainability-related goals (Mykrä, 2021). However, in the higher grades, outdoor education is more unusual. A Finnish survey with nearly 3,000 ninth-graders indicated that visits outside of the school were rare in lower secondary education (Uitto, Kärnä, & Hakonen, 2013).

In recent years, larger studies regarding the scope and amount of outdoor education in Norwegian schools have been lacking (Gabrielsen, 2019; Jordet, 2010), which is also the case in Finland. Furthermore, a Norwegian meta-study revealed that research-based knowledge of outdoor education in the country is limited (Abelsen & Leirhaug, 2017). Numerous studies have been published about the Danish *udeskole* (see e.g. Bentsen et al., 2009; Bølling, Pfister, Mygind, & Nielsen, 2019; Jørring, Bølling, Nielsen, Stevenson, & Bentsen, 2020; Mygind, 2009; Otte, Bølling, Elsborg, Nielsen, & Bentsen, 2019a; Otte et al., 2019b), while outdoor education in Finland and

Table 1. Outdoor education in Finland and Norway.

Curriculum	Finland	Norway
General recommendations	- Different teaching methods in different learning environments - Nature and outdoor education - Outdoor education in general	- Different teaching methods in different learning environments - Nature and outdoor education - Outdoor life and nature
Physical education	- Teaching in different environments, inside and outside school	- Teaching in different environments, inside and outside school - Lifestyle and outdoor life
Outdoor life		- An eligible subject/5th—10th grade - Respect for nature - Understanding nature's diversity
Environmental studies	- Outdoor excursions - Field research in nature	
Science		- Fishing, hunting, and farming - Outdoor life in practice

Norway is not as well documented. Hence, there is a need for more research about outdoor education in both the Finnish and the Norwegian contexts. Moreover, in general, studies about outdoor education from the perspective of student teachers are not very common (Blatt & Patrick, 2014), especially studies that explore and discuss outdoor education in the contexts of the two countries.

The aim of this study is to examine Finnish and Norwegian student teachers' views on outdoor education as a teaching method. Two research questions are posed:

(1) How do student teachers describe their experiences of outdoor education?
(2) How do student teachers describe their perceptions of outdoor education?

The results will be elaborated and discussed in relation to the two underlying contexts in terms of a Finnish and a Norwegian teacher education programme. The current study (cf. Blömeke & Paine, 2008) addresses outdoor education as a teaching method and how it is framed by the two national contexts and understood by student teachers from two sites: one teacher education programme in Finland and one in Norway.

Literature review

The increasing popularity of outdoor education among teachers is, to some extent, a consequence of the subjective experiences of teachers, but the benefits of teaching and learning outdoors are also supported by a growing body of research. For example, research indicates that outdoor learning can have a positive impact on the social relations between students (Becker, Lauterbach, Spengler, Dettweiler, & Mess, 2017; Bølling et al., 2019; Mygind, 2009; Richmond, Sibthorp, Gookin, Annarella, & Ferri, 2018). Studies also report the cognitive benefits associated with outdoor education, such as enhanced motivation for learning (Dettweiler, Ünlü, Lauterbach, Becker, & Gschrey, 2015), increased classroom engagement (Kuo, Browning, & Penner, 2018), positive effects on long-time memory (Fägerstam & Blom, 2013), and positive self-efficacy beliefs (Richmond et al., 2018), to mention a few. The positive impact on learning outcomes has also been confirmed for students with emotional, cognitive, and behavioural disabilities (Szczytko, Carrier, & Stevenson, 2018). Other benefits include the promotion of physical activity (Mygind, 2007; Romar, Enqvist, Kulmala, Kallio, & Tammelin, 2019) and the potential for working on sustainability-related issues in outdoor education (Gabrielsen & Korsager, 2018; Sandell & Öhman, 2010). Spending time in nature during lessons is also important considering that both past and present frequencies at which time is spent in nature predict emotional affinity towards nature, which in turn, is an important factor for predicting nature-protective willingness and behavioural decisions (Kals, Schumacher, & Montada, 1999).

Overall, research has shown that there are many positive aspects of outdoor education, including domains not mentioned in this brief summary. On the other hand, there is a consensus that more research in this area is needed. In addition, it is central to keep in mind that the positive effects of outdoor education are not necessarily achieved if the activities are not thoroughly planned, well implemented, and evaluated.

Teachers' and student teachers' views on outdoor education

The potential of outdoor learning is often acknowledged by teachers (Waite, 2011) and student teachers (Blatt & Patrick, 2014; James & Williams, 2017). Significant life experiences in connection to nature, such as playing outdoors in nature, as well as farming and gardening with family, can be important in the development of a positive view on outdoor education among teachers (Waite, 2011) and student teachers (Blatt & Patrick, 2014). Besides, student teachers' understanding of the importance of stewardship for nature may have developed during their outdoor education at school (Blatt & Patrick, 2014). An outdoor education intervention study among student teachers suggests

that nature relatedness is connected to one's perceived competence and willingness to teach outdoors (Barrable & Lakin, 2020). Nature relatedness is considered as the 'the extent to which an individual feels close to nature' (Barrable & Lakin, 2020, p. 191; see also Nisbet, Zelenski, & Murphy, 2009).

Student teachers' memories from childhood play a significant role in how they view the importance of outdoor education in schools. Positive experiences from outdoor education in childhood often correspond to student teachers' intentions of taking students outdoors in their future teaching careers (Barrable, Touloumakos, & Lapere, 2020; Blatt & Patrick, 2014). Two-thirds of the student teachers in a U.S. study stressed that teachers play a central role in exposing students to nature, and many of the respondents mentioned that they personally have the responsibility of taking their students into nature settings (Blatt & Patrick, 2014). Some student teachers in the study also expressed concerns about the fewer opportunities that exist to spend time in nature with their pupils, when literacy and mathematics prevail in the curriculum. The student teachers also shared the belief that children are growing up today in an environment characterised by an increased use of technology and a decreased amount of time spent outdoors. Furthermore, the student teachers recognised the positive impacts of nature when it comes to, for example, learning from nature, the connection between nature and creativity, and the calming and relaxing effects of nature.

Research among student teachers identified three main themes of perceived obstacles to taking elementary students outdoors for learning activities (Shume & Blatt, 2019). The *logistics of organising outdoor experiences* were brought up by three-fourths of the student teachers in the study, which included compliance with school policy, safety concerns, appropriate clothing for the weather, costs, and limited access to natural areas, in addition to the time and effort required to plan and organise outdoor experiences. These barriers were also mentioned by in-service teachers in a British study (Waite, 2011). However, safety issues, apart from traffic, do not seem to be a concern for teachers in the Nordic context to the same extent as in the Anglo-Saxon context (Mygind, Bølling, & Seierøe Barfod, 2019). Two-thirds of the respondents stressed that *anticipated resistance from others* is an obstacle to organising outdoor education (Shume & Blatt, 2019). They were most concerned about resistance from school administration or other teachers, and cited legal liability issues as a reason for limited school support for outdoor education. Resistance from parents and the elementary students themselves were also mentioned. More than half of the respondents expressed *curricular concerns* when it comes to taking students outdoors. These concerns include a crowded curriculum which does not provide time for outdoor experiences when there is already a lack of teaching time, as well as the pressure caused by national exams and the preparation for these tests. In-service teachers share this concern about exams, even though they recognise and value the potential of outdoor learning (Waite, 2011). However, this should not be a direct reason for not prioritising outdoor learning in Finland and Norway, since basic education is not controlled in the same way by national exams. However, a crowded curriculum certainly can have a negative impact on the amount of outdoor learning provided in the Nordic countries.

Research has also shown that many teachers are concerned about the potential loss of control and expert status in outdoor education (Glackin, 2018), but this concern may be somewhat exaggerated. For example, in a British study, teachers reported no loss of control during outdoor sessions while working on a project; on the contrary, student engagement was increased, and the loss of the teachers' expert status enabled the forming of a co-learning relationship between teachers and students (Scott, Boyd, & Colquhoun, 2013). A multi-case study with three Finnish teachers using outdoor learning in the form of fieldwork in biology found that their main arguments for this teaching method were that it brings authenticity to learning and that important and meaningful affective and cognitive experiences are gained (Kervinen, Uitto, & Juuti, 2018). Furthermore, the teachers pointed out that regularity is a key element in achieving the benefits of outdoor learning and that it is central to justify outdoor learning as the 'real studying' of subjects, by, for example, assessing outdoor tasks. At the same time, the teachers also emphasised the importance of the freedom of students in outdoor learning.

Case description: teacher education in Finland and Norway

Student teachers from one Finnish and one Norwegian teacher education programme participated in this study. Both programmes offer courses in outdoor education, although there are differences concerning the number of courses and their contents (Studiehandboken, 2020; Studieoversikt, 2020). In the Finnish programme, students have one compulsory course, *Science I* (5 ECTS), in which outdoor education is a main topic. This means that all student teachers gain basic insights into outdoor education, even though they do not choose it as an optional subject. The Norwegian students who choose the subjects science or physical education also gain insight into outdoor education, especially those who select physical education. The Finnish students who choose the optional courses in environmental education, *Outdoor education I, Outdoor education II*, and *Sustainable development—environmental education*, gain a deeper insight into outdoor education. Besides this opportunity, the Finnish students can deepen their knowledge in outdoor education by choosing among four other optional courses closely related to the topic. According to the learning goals in physical education, the courses in the Finnish teacher education programme do not include outdoor education. However, since the descriptions of the courses in physical education are not always that detailed, outdoor education may also be included in these courses, even without an explicit learning goal in that direction. This is the case in both teacher education programmes, although the course names and descriptions do not always give a full picture of the contents included in the courses. In summary, Finnish and Norwegian student teachers have varying knowledge of outdoor education on the basis of what they have chosen to study. In Finland, all student teachers are qualified teachers of 6–12-year-old children in all subjects, and they gain a deeper knowledge of outdoor education if they choose environmental education as their subsidiary subject or some of the optional courses partly focusing on outdoor education. In Norway, all student teachers are qualified for teaching math and Norwegian, and those who specialise in science or physical education gain in-depth knowledge of outdoor education.

Methodology

To answer the two research questions, we chose a qualitative and comparative research approach with quantitative elements. A comparative design involves making the familiar strange by using a contrasting mode, which enables a closer look at the contextual features, knowledge structures, systems, and beliefs (Blömeke & Paine, 2008). Web questionnaires were used in the data collection, and both the qualitative and quantitative data enabled a deeper understanding of outdoor education as a teaching method used by student teachers from two different contexts (Patten, 2014).

Participants and data collection

In the study, student teachers from one teacher education programme in Finland and one teacher education programme in Norway were invited to participate. A web questionnaire with both multiple-choice and open-ended questions was developed by the researchers, with the aim of investigating the student teachers' experiences and perceptions of outdoor education. The questionnaire was first done in Google forms in Swedish and then translated to a questionnaire programme used by the Norwegian university. The key term, outdoor education, was explained at the beginning of the questionnaire in order to give the participants the same definition of the concept. The questionnaire revolved around five themes, namely, backgrounds, experiences of outdoor education at school and university, experiences of implementing outdoor education, perceptions about the advantages and disadvantages of outdoor education practice in general in their future teacher work. A pilot study was carried out involving a group of students enrolled in a teacher education programme to test the questionnaire. The pilot resulted in some minor changes to the questionnaire.

The questionnaire was sent by an e-mail to the third-, fourth-, and fifth-year student teachers in the Finnish teacher education programme (n = 155) and to the third- and fourth-year student teachers in the Norwegian teacher education programme (n = 301). Students were contacted given that the intention was to choose participants with experiences of outdoor education under the teacher education programmes. Hence, we intentionally excluded students in their first two years of education. Because of differences in the structures of the teacher education programmes in the two countries, no fifth-year student teachers could be recruited in the Norwegian context.

In sum, 32 Norwegian student teachers (29 female, 3 male) and 66 Finnish student teachers answered the questionnaire (54 female, 12 male). The student teachers had somewhat different experiences of outdoor education from their teacher education programmes. The Finnish students had mainly experienced outdoor education in the science courses, but also to some extent in the physical education and mathematics courses. The Norwegian students' main experiences were from the educational sciences and science courses, and, to some extent, from mathematics, Norwegian, and physical education. About 50% of both the Finnish and Norwegian students had their own teaching experiences of outdoor education. They both had the most experience teaching outdoor education in environmental studies, mathematics, and physical education, while the Norwegian students also had experience teaching outdoor education in cross-disciplinary subjects.

Participation was voluntary and anonymous, and the students signified informed consent on the web questionnaire. The study follows the general ethical standards approved by the scientific communities in the two countries: the Finnish National Board on Research Integrity (2019) and the Norwegian National Research Ethics Committees (2016). In order to increase the response rate, three reminders were sent to the students in Finland and two reminders to those in Norway. In Finland, three movie tickets were raffled off among the respondents, while, due to ethical directives (permission from the Research Council of Norway), this was not possible in Norway. Despite this effort, the response rate was quite low, especially in Norway.

Data analysis

The data was analysed both quantitatively and qualitatively. The quantitative data was prepared and analysed in the Statistical Package for the Social Sciences SPSS (version 26). The coding of the negative statements was reversed, and the sum variables were calculated for the student teachers' perceptions of teaching outdoors and in the classroom. The reliability of the sum variables was checked by calculating the values of Cronbach's alpha (cf. Huck, 2012). The alpha value for the sum variable regarding teaching outdoors was 0.72, which indicates a scale of moderate, nearly high, reliability (Hinton, McMurray, & Brownlow, 2014). The alpha value of the scale teaching in the classroom was 0.57. By removing one of the items ('teaching in the classroom is demanding') from the scale, the value was increased to 0.63. Since the sum variables were normally distributed, the comparisons between the Finnish and Norwegian student teachers' perceptions were done by using an independent samples t-test and calculating effect values (Cohen's d) (cf. Huck, 2012).

The students' responses to the open-ended questions were analysed in an inductive manner and by content analysis (Boeije, 2010; Schreier, 2014). All researchers participated in the analytical process, although one of the authors had the main responsibility and analysed the responses through an inductive coding process. In the first phase, the researcher familiarised herself with the data by reading and re-reading the students' responses to the open-ended questions. The researcher then focused on one open-ended question at a time and tried to find the essence of the students' responses by distinguishing the key points and identifying initial potential themes. In the next phase, the researcher did a systematic coding of the key points and themes in relation to each open-ended question and assigned newly emerging, inductive categories containing units of meaning. The researcher further reviewed all the categories, identified their specific aspects, looked for connections between them, and compared the results with the original data in terms of the student teachers' responses to the open-ended questions. Finally, the researcher labelled the categories,

attempting to capture the key dimensions of the student teachers' experiences and perceptions of outdoor education. By further counting the student teachers' responses in the categories related to each open-ended question, the qualitative data was made broader and more reliable for the sake of the analysis (Creswell, 2013). In order to ensure the trustworthiness of the study, a peer debriefing between the authors was carried out in relation to all phases of the analytical process. The results are presented below, as well as the original excerpts from the students' responses to the open-ended questions, shown in italics.

Results

The results in relation to the two research questions are presented below. The categories identified in the inductive analysis are described and illustrated with original extracts from the data. The responses were translated into English by the authors. The frequencies and percentages pertaining to the Finnish (F) and Norwegian respondents (N) in a category are reported in parentheses (e.g. F41/62%; N16/50%, wherein the first figure is the frequency).

Student teachers' experiences of outdoor education

In order to get an overall view of the experiences of outdoor education among the student teachers, the respondents were asked to estimate how often their teachers in grades 1–6/7, on average, carried out teaching outdoors. Of course, this is by no means a watertight measure, considering that it has been many years since the respondents were that age, but it provides a general indication of the amount of time spent with outdoor learning during primary education. Most of the respondents (F41/62%; N16/50%) reported that they had experiences of outdoor learning a few times per school year during primary school. Approximately one-fifth (F13/20%; N5/16%) remembered that outdoor learning took place once a month, and a third of the Norwegian respondents stated that they had experienced outdoor learning several times a month, while that proportion was under a tenth among the Finnish students. Overall, the figures showed that the amount of time spent learning outdoors, according to the teacher students' memories, was greater among the Norwegian students. Only a small fraction of both the Norwegian and the Finnish students reported that they had never experienced outdoor learning as pupils in primary school.

When analysing student teachers' experiences of outdoor education from their primary school education, eight categories were identified. The most prominent form of outdoor education was visits to the forest (F19/29%; N15/47%). Students went to the forest with their teacher and did various kinds of activities, such as picking berries, building things, or just observing nature. *We did a quadrant in nature . . . and then we put trash into the quadrant that does not break down, as well as trash that does break down, in order to learn how to keep nature clean*. During outdoor education, the pupils were also in the schoolyard doing experiments, observing things, and receiving station teaching (F15/23%; N7/22%). Some students had also experienced that the teacher only took the teaching out to the schoolyard but did the same thing as in the classroom. *We had mathematics outdoors in the school yard*. Some students (F13/20%; N2/6%) mentioned that they had physical education outdoors. *We often had our lessons in physical education outside the school; we skated, orienteered, and played sports in an arena*. Some students (F10/15%; N12/38%) experienced playing in their outdoor education; for some of them, play was the central learning activity during the lesson, while for others, play was only one part of the lesson.

For some students, special days or weeks were devoted to outdoor education, and during those days, the teaching was done outside (F9/14%; N3/9%). *We had theme days, and I chose such a course when we were outside for the whole week*. Seven student teachers mentioned that during the lessons, they went out into nature in order to observe or collect various kinds of plants (F7/11%; N0/0%). However, no Norwegian student teachers mentioned this kind of activity. As part of their outdoor education, some students did study visits or excursions (F7/11%; N4/12%). *We visited a neighbouring*

farm and learnt about animals. Finally, 34 student teachers (F20/30%; 14/44%) mentioned that they had experiences of outdoor education in other subjects. Except for physical education, the students referred to different school subjects and their experiences of outdoor education within those subjects. The Norwegian students had the most experiences of outdoor life, and eight of them explicitly mentioned outdoor life when referring to outdoor education. Other situations the students referred to included *math tasks, cooking*, and *experiments in science.*

Student teachers' perceptions of outdoor education

The descriptive statistics show that the Finnish and Norwegian student teachers' perceptions of teaching indoors were more positive than their perceptions of teaching outdoors. The analysis was based on two questions focusing on how students perceive teaching in an 'ordinary' classroom and in an outdoor classroom. When comparing the mean values of teaching indoors in the classroom, it can be concluded that the values were almost the same in the Finnish and the Norwegian population, and no significant differences were found. However, when comparing the perceptions of teaching outdoors, the independent samples t-test indicated that Norwegian student teachers had a significantly more positive perception than the Finnish students ($p = 0.021$). The effect size was moderate (Cohen's $d = 0.54$).

Student teachers' positive perceptions of outdoor education

The analysis of student teachers' positive perceptions of outdoor education was based on an open-ended question concerning what advantages they find with practicing outdoor education. The results showed that most of the respondents (F57/86%; N26/81%) expressed that *enhanced learning* is a positive aspect of outdoor education, and they presented a variety of reasons for this. The respondents pointed out that learning is more active, concrete, hands-on, experience-based, and experimental outdoors, providing *concrete examples of things that we normally see in pictures in books*. In addition, all the senses are engaged in learning outdoors, which supports learning. *Students* can *touch natural objects, which makes it easier for them to learn concepts*. Hence, outdoor education promotes a connection between theory and practical work, as well as between school and 'real life'. According to the student teachers, outdoor education also brings *variation* and *versatility* (F20/30%; N6/19%) to learning methods and, by varying the learning environment, the teacher creates more opportunities for the students to learn. Furthermore, some of the students stated that outdoor learning can affect students' motivation and concentration positively. *It can enhance motivation among students.*

Health-related aspects were mentioned by just under a half of the respondents (F29/44; N15/47%). These student teachers brought up the positive aspects, such as fresh air, physical activity, better sleep quality, and establishing a habit of spending time outdoors, which combine to promote a healthy lifestyle among pupils. *First, outdoor education has beneficial effects on health among young people, due to the fresh air, movement, and variation in everyday life. The brain needs activity and air to function better*. A group of informants (F11/17%; N9/28%) also considered gaining *environmental consciousness* as a positive aspect of outdoor education. These student teachers emphasised that pupils learn how to spend time in nature and, in turn, gain respect for nature. Furthermore, teachers can include environmental education and learning about sustainable development in their outdoor education. *It is easier to integrate environmental education into the lessons and teach the pupils to think in terms of sustainability and taking care of nature*. Some of the informants (F7/11%; N8/25%) highlighted *freedom* as a positive aspect of outdoor education since it provides pupils much more space than indoors. *The pupils are not bound to their own seats but have more freedom*. Improved *social climate* is another positive aspect that some of the student teachers emphasised (F7/11%; N8/25%). Spending time outdoors together may contribute to a feeling of belonging and affect classroom unity positively. *I've experienced as a supply teacher that there are fewer conflicts between students outdoors, and the pupils spend more time together.*

Student teachers' negative perceptions of outdoor education

The analysis of student teachers' positive perceptions of outdoor education was grounded in an open-ended question concerning what advantages they find in practicing outdoor education. It was evident that almost all the student teachers expressed negative perceptions of outdoor education, and many (F26/39%; N13/41%) pointed out that outdoor education is *time consuming* and requires considerable planning and preparing. In the profession, teachers often experience a lack of time, and outdoor education entails extra work. The pupils must also adjust to new learning situations outside school, which takes time and increases the workload for the teacher. *It is time consuming since the pupils have to learn how to behave in learning situations outside the classroom*. According to several informants (F18/27%; N6/19%), there are also more risks with outdoor education involving *insufficient security*. It is difficult for the teacher to keep control in an outdoor environment, and a common fear is that of losing a pupil. *It's difficult to control a whole class in an area without boundaries*. In a city, the traffic arrangements can be demanding, and the teacher needs good planning to handle all kinds of situations with the class. The *classroom structure* can also be a challenge for outdoor education. According to some informants (F17/26%; N10/31%), the class size as well as the pupils' ages and special needs, influence the teaching. Further, it can be quite stressful for the teacher to handle unreliable and noisy pupils outside the everyday school context. In an outdoor environment, there are more *distracting factors* (F8/12%; N6/19%) that can be disturbing for lively pupils who need a stable setting in order to concentrate. *There can be many distractions for some pupils, which means that they cannot really concentrate and follow the teaching*. The teacher needs to take all the pupils into account and include them in the teaching, and this is not always easy to accomplish in outdoor education.

The *weather* (F16/24%; N3/9%) and *outdoor circumstances* (F8/12%; N3/9%) can be seen as negative aspects of outdoor education. The learning activities cannot be done in all kinds of weather conditions, for example when it is too cold or rainy. It can also be difficult to find suitable places for teaching that are not too far from the school. *If the school is located in a city centre, it can be difficult to find a good environment for outdoor education*. According to the student teachers, a *lack of resources* (F10/15%; N5/16%) also influences the quality of outdoor education. It is often demanding for one teacher to handle the whole situation in an outdoor environment, and it would be easier to manage if there were two teachers sharing the responsibility. Another aspect is the *equipment* (F5/8%; N2/6%), and it was experienced as problematic when pupils do not have the right equipment for the outdoor circumstances. *The pupils do not have suitable clothes for the weather*. Moreover, the informants (F9/14%; N6/19%) emphasised that outdoor education requires *training*, and the teacher can feel insecure in both teaching the material and handling the class. *I feel insecure as a teacher when I am outdoors with the pupils. I cannot control the external factors in the environment in the same way as in the classroom, and that's why it feels a little bit uncomfortable and scary*. Some informants also noted that *parents* (F3/5%; N1/3%) can be quite critical towards outdoor education, especially if they do not have their own experiences of it. This means that the teacher has to explain and justify the teaching method to parents and other external parties, adding pressure on the teacher's professionalism in outdoor education.

Discussion

The background of this article was the need for and interest in conducting more research about outdoor education in Finland and Norway (cf. Abelsen & Leirhaug, 2017; Gabrielsen, 2019; Jordet, 2010). The comparative approach offered the possibility to closely observe how outdoor education is characterised in the national contexts and understood by student teachers from two different teacher education programmes (cf. Blömeke & Paine, 2008).

Student teachers bring their own experiences to teacher education, including the amount of time they spent with outdoor learning during their primary education (e.g. Barrable et al., 2020; Blatt & Patrick, 2014). The traditions, conditions, and educational context are all similar in the

Nordic countries, and these factors influence student teachers' views on outdoor education in a similar way (Finnish National Board of Education, 2016; Kunskapsdepartementet, 2013; Natural Resources Institute Finland, 2013; Wold et al., 2020). Most of the Finnish and Norwegian student teachers had experienced outdoor learning a few times per school year in their primary school. Both student groups referred to various kinds of outdoor places, mostly the forest, but also nature in general and the schoolyard, and they mentioned special outdoor days or weeks. The activities were also quite similar, such as picking berries, building things, observing nature, and, according to the Finnish students, collecting plants. They did experiments, went on study visits and excursions, or just played outdoors. Both the Finnish and Norwegian student teachers had experienced outdoor education in physical education as well as in other subjects, while the Norwegians had the most experience of outdoor life in general. In contrast to Finland, the Norwegian curriculum (Kunskapsdepartementet, 2013) emphasises lifestyle and outdoor life, and, in the higher grades, Outdoor Life is an eligible subject. The focus on outdoor life in the Norwegian curriculum may explain that the amount of time spent learning outdoors was, in general, larger among the Norwegian than the Finnish student teachers (cf. Uitto et al., 2013). However, some students had also experienced that the teacher did the same thing outdoors as in the classroom. It is thus important to notice that the positive effects of outdoor education (i.e. Becker et al., 2017; Bølling et al., 2019; Dettweiler et al., 2015; Fägerstam & Blom, 2013; Kuo et al., 2018; Mygind, 2009; Richmond et al., 2018) can only be achieved when it is carefully planned, well carried out, and properly evaluated. Another prerequisite for achieving the potential benefits is that outdoor education is implemented regularly (cf. Kervinen et al., 2018).

Overall, both the Finnish and Norwegian student teachers had a positive perception of outdoor education. In accordance with previous research, the students mainly focused on pupils when talking about the positive aspects of outdoor education. They noted that pupils' learning and motivation are enhanced due to the active, concrete, and varied teaching methods (Dettweiler et al., 2015; Fägerstam & Blom, 2013; Richmond et al., 2018). Furthermore, the environment offers good opportunities for pupils to learn in an experimental way, with a feeling of freedom and all their senses engaged (Kervinen et al., 2018). The students also noted that outdoor education gives pupils an opportunity to see the relation between school and real life, thus further enhancing their learning (Kervinen et al., 2018). Besides the positive effects on learning, the students mentioned a healthy lifestyle among the pupils as a result of outdoor teaching. Pupils are physically active (Mygind, 2007; Romar et al., 2019), and spending time outdoors supports their mental health (Szczytko et al., 2018). In addition, as previous research has shown (Becker et al., 2017; Bølling et al., 2019; Kuo et al., 2018; Mygind, 2009; Richmond et al., 2018), the students noted the opportunities outdoor education provides for improving the social climate and classroom unity. Finally, environmental consciousness was recognised as an important aspect of outdoor education. Through a close connection to nature, pupils learn to respect it and develop an understanding of sustainability-related issues (Gabrielsen & Korsager, 2018; Sandell & Öhman, 2010). However, the proportion of students missing this positive outcome was surprisingly high (83% and 72% of the Finnish and Norwegian informants, respectively). This finding can be attributed to the fact that the question was open-ended and more general positive outcomes were recalled by the students first. Nevertheless, the result is food for thought in relation to planning future content for outdoor education courses. Research-based favourable outcomes on environmental consciousness must be more strongly emphasised. In addition, the fact that the amount of time spent in nature predicts emotional affinity towards nature is related to nature-protective willingness and behavioural decisions (Kals et al., 1999). This insight underlines the need for spending more time in nature also during school days and strengthens the relevance of outdoor education—a central point for student teachers to take into consideration.

Despite the positive perspective on outdoor education in both student groups, it was evident that the Norwegian students had a significantly more favourable perception of teaching outdoors than the Finnish ones. This fact can be related to but not explained by their previous experiences. The sociocultural climate is quite similar in both countries, although the Norwegian outdoor life and

hiking (Wold et al., 2020) is well-known all over the world. This nature relatedness (Barrable & Lakin, 2020), explicitly apparent in the curriculum in terms of the eligible subject, Outdoor Life, may have affected the students' perceptions in a positive way.

Despite the many positive aspects, almost all the student teachers had some negative perceptions of outdoor education. The students' views are in line with previous research, according to which certain obstacles relate to teaching outdoors (Shume & Blatt, 2019). In this respect, the organisation of outdoor education was mentioned by the students, in addition to insufficient security, weather, and outdoor circumstances, as well as the pupils' lack of equipment. Moreover, teaching outdoors requires the teacher to have control in a totally different way than in classroom teaching. The traffic arrangements can be difficult, the weather might not be appropriate for the planned activity, a suitable place can be hard to find, and on the top of all this, the pupils may not have suitable clothes and equipment for the environmental circumstances (c.f. Waite, 2011). The different, and somewhat demanding, circumstances in teaching outdoors also influenced the students' views on teachers' work. Active and lively pupils, as well as pupils with special needs, may be challenging for the teacher to handle in a more unstable outdoor setting. The need for extra resources and training to handle the different teaching situations was thus seen by the students as necessary for a successful outdoor education. The students also expressed curriculum concerns (Waite, 2011). Teaching outdoors requires much extra work from the teacher, but also from the pupils. The lessons must be well planned and organised, and the pupils must adjust to the learning situations outside school. A crowded curriculum and too little time characterise the teacher's well-known dilemma, and since outdoor education, in many cases, is more time consuming than traditional classroom teaching, it would be easy to depend on that explanation. However, basic education in Finland and Norway is not controlled by any national exams, and, consequently, this should not be seen as an obstacle for outdoor education. Finally, the students mentioned anticipated resistance from others as an obstacle for outdoor education (Shume & Blatt, 2019). Parents can be quite critical towards this teaching method, adding increased pressure and workload on the teacher (cf. Glackin, 2018). Moreover, in line with previous research, teachers do not lose professionalism or status in teaching outdoors (Scott et al., 2013). Instead, pupils participate in a more active way outdoors, and the co-learning relationship that develops between the teacher and students in these settings may enhance their learning.

Both the Finnish and Norwegian student teachers have had previous experiences of outdoor education and expressed a positive view of this. In both countries, recreation in nature and nature activities play a central role among children and youth (National Natural Resources Institute Finland, 2013; Wold et al., 2020), thus supporting a positive view (Barrable & Lakin, 2020; Blatt & Patrick, 2014; Nisbet et al., 2009; Waite, 2011). However, in both countries, due to lifestyle changes, there is a decreasing amount of time spent outdoors, and children and youth therefore have less contact with nature (Skar et al., 2016). In order to increase the interest in being in nature, it is important to emphasise the positive influences of outdoor education, such as its calming and relaxing effects (Blatt & Patrick, 2014). The students also expressed some negative views on outdoor education, particularly in relation to the teaching profession, and there seems to be an insecurity about conducting outdoor education among the student teachers.

Waite (2011)stresses that there is a gap between the potential that teachers perceive with outdoor learning and the actual use of it. Keeping in mind the various benefits of outdoor learning that research in the area has found, teacher education has a key role to play in facilitating student teachers' use of outdoor learning in their future teaching. Blatt and Patrick (2014) conclude that student teachers with positive outdoor experiences often also have positive views of the environment, as well as intentions to teach outdoors in their future careers. Hence, Blatt and Patrick (2014) suggest that student teachers should be introduced to outdoor learning environments during their education through projects, field trips, and field studies, thereby building on their prior outdoor experiences and providing them with different methods to expose their future students to nature and the outdoors. This is particularly important for student teachers whose school experiences have not involved

outdoor education. For these individuals, it can be difficult to envision how outdoor learning would work in their future teaching (Barrable et al., 2020). Connection with nature is a foundation for engaging with outdoor education. Therefore, it would also be helpful for student teachers to interact with teachers working with outdoor learning in their classes in order to experience how these teachers overcome the barriers to outdoor teaching (Shume & Blatt, 2019). Students should have the opportunity to start by teaching small groups outdoors during their education, in order to gradually increase their confidence in outdoor teaching (Gross, McGee, James, & Hodge, 2019). A comparative study involving primary student teachers from four European countries showed that the experience of outdoor education both in school and in teacher education programmes increased the confidence of the students to implement outdoor activities in their own teaching (Lindemann-Matthies et al., 2011).

Limitations and further research

There are some methodological aspects worth taking into consideration in assessing the overall results of the study. Despite the different efforts to increase the response rate, the number of student teachers participating in the study was quite low, in total 66 Finnish students and 32 Norwegian students. The low response rate may mean that the respondents who chose to answer the questionnaire were generally interested in and held positive opinions of outdoor education. Furthermore, the respondents had little overall experience of teaching outdoors, which can contribute to a somewhat idealistic view of outdoor education. This might have influenced the results, as was the case, for example, with the low percentage of certain negative perceptions raised by the students.

There was also less Norwegian data than Finnish data, which may have affected the results of the quantitative analysis. The challenge with poor response rates is well known in web surveys compared to off-line survey methods (Siva Durga Prasad Nayak & Narayan, 2019). In this study, however, the results were mainly based on students' responses to open-ended questions and analysed in an inductive manner and by content analysis (Boeije, 2010; Schreier, 2014). The number of participants underlying the qualitative analysis can thus be considered as sufficient. The open-ended questions gave the students the opportunity to decide what positive and negative aspects to point out in their answers. Consequently, they may not have taken all possible aspects into consideration. This can be seen as a limitation of the study, but because our intention was to allow the students to describe their own views of outdoor education, the method can be regarded as appropriate.

The study, using both quantitative and qualitative data, offers a general overview and represents a first step in investigating Finnish and Norwegian student teachers' views on outdoor education as a teaching method. However, in order to ascertain a deeper and more nuanced insight into how outdoor education as a teaching method is understood by student teachers in Finland and Norway, future research could collect a larger sample from several institutions in both countries, combined with in-depth oriented qualitative interviews.

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