‘Reading Woods’ with Teachers in Icelandic Schools in the 21st Century

Brynjar Olafsson, University of Iceland
Gisli Thorsteinsson, University of Iceland

Abstract
The curriculum development project, ‘Reading Woods with Schools’, focused on cross curricular outdoor education in Icelandic woods. The participants were 105 teachers from twenty-two elementary schools: these teachers were trained via an in-service teaching course and given a woodland area prior to the project. The aim was to ascertain how teachers could utilise woodland in enabling students to gain an understanding of the ecosystem of the woods, use of the woods in craft, learn about sustainability and understand that woods are resources that influence the wellbeing of the human race.

The article outlines the curriculum project ‘Reading Woods with Schools’ and reports on a survey that was undertaken in order to examine teachers’ views and experiences, in terms of the use of local woods in projects. One teacher from each of the participating schools reflected on the project and answered the survey. The main aims of the survey were to examine how the activities were organised, to what extent the woods were used, hindrances in using the woods for schools, knowledge gained via the project and what kind of support the schools required in running the project. The survey concluded that the activities were mostly dependant on teachers’ initiative, as outdoor education is not a part of the Icelandic National Curriculum (Menntamalaraduneyti, 2010). Furthermore, teachers must have access to outdoor education training, educational materials, good facilities and it is important to establish an online database, featuring a collection of different projects, for teachers to access during their courses.

Key words
curriculum development, local woods, outdoor education, nature, elementary schools, survey

Introduction

Utilising woodland in education enables schools to work in a lively environment, with access to multiple opportunities that can easily involve different subjects within a cross curricular context. It also provides students with the opportunity to work in real live settings.

The curriculum development project ‘Reading Woods with Schools’ was established in 2001 in Iceland (Johannsdottir, 2007). 105 teachers from twenty-two elementary schools participated in the project: an in-service training course was provided to prepare the teachers for the project and to establish their collaboration. The main aims of the project were to encourage cross-curricular outdoor education in the Reykjavik district and to gain knowledge and understanding for the underpinning of further approaches.

From the beginning, there was an emphasis on cooperation between local educational authorities and Icelandic forestry institutions working together in assisting schools to take care of the woods in their neighbourhood and in utilising them. This was expected to become a way of identifying methods for increasing relationships between school societies and the concept of exploiting woods for use in elementary school classes, within a cross-curricular context.

Using the woods as a basis for school activities, it was intended that students would benefit from an adventurous learning environment, in accordance with their level of attainment, through examining and experiencing woodland. Such a context usually supports students’ self-confidence, social skills and increases their physical strength (Torsney, 2008).

A survey was undertaken in the final stages of the project, which focused on the teachers’ reflections and views on incorporating the local woodlands in outdoor education. The aim of the survey was to gain knowledge and understanding of the teachers’ work, in order to enable further development in Icelandic schools. The survey took the form of an online questionnaire and consisted of twenty-five questions. One teacher from each of the participating schools answered the questionnaire, thus ensuring that the results were trustworthy. The data was analysed through the use of frequency tables and an analysis of the answers provided.

The article firstly describes the curriculum development project ‘Reading Woods with Schools’. Secondly, it looks into related literature. Then the authors explain the research methodology and report its outcome. Finally, they discuss the results and make their conclusions.

Reading Woods with Schools in Reykjavik

The concept of ‘local woods for learning’ is the basis of the curriculum development project ‘Reading Woods with Schools’ (Johannsdottir, 2007). This concept refers to the use of woodland near schools as a systematic educational environment. In utilising such woodland, schools support individualised learning and diversification in teaching. Teachers can set up workshops in woods, using benches, tables and fireplaces, and the woods can also be used in their natural state. Local woods for learning may include

‘Reading Woods’ with Teachers in Icelandic Schools in the 21st Century

Figure 1: One of the local woods used by elementary schools in Reykjavik

gardens, or young wooded areas. However, an old multiform wood is preferable for teaching and outdoor activities, as it offers better weather conditions and more possibilities for multiple activities. Other activities organised by schools are also expected to take place in woods, such as school opening ceremonies, birthdays and exhibitions.

The definition of a local wood used in the curriculum development project was as follows:

- the wood is part of the school environment and its neighbourhood
- a place for short or long-term study
- one of the school classrooms
- located within a 10 minute walk from school.

The idea behind the project ‘Reading Woods with Schools’ was to link together knowledge of woods and woodland and knowledge from various subject areas, in order to make the woods a basis for miscellaneous education. Thus, it was considered important to link human beings and nature together, within an educational context, in order to meet different needs of students.

Plans were established to ensure the correct utilisation of woods, such as drawing maps of the woods, noting the condition of trees, including quantity, length, age, density and thickness, and describing the landscape and the soil. There was also a focus on teaching students about woods and the utilising of wood in craft.

The project established contracts between schools and the owners of the woods, declaring how such woods should be used by schools. The contracts outlined the privileges of schools in using woodland for learning, such as students and parents playing an active role in school activities. Consequentially, the local woods gained a new pedagogical role, in encouraging teachers and students to spend their time outdoors, within the school neighbourhood.

The main aims of the curriculum development project were:

1. To encourage cross-curricular outdoor education in all elementary school classes within the Reykjavik district.
2. To increase students’ and teachers’ knowledge of the value of woodland, in terms of nature, human beings, culture, society and the economy.
3. To develop an appropriate pedagogy in enabling teachers to conduct outdoor education.

The objectives were:

1. To increase students’ knowledge of green ecology and sustainability
2. To support students’ creativity, by utilising trees from local woods in craft
3. The support of cross-curricular education through outdoor education in Icelandic woods
4. To increase the use of woodland by schools within the Reykjavik area
5. To increase schools’ communication with local societies.

The Context of Outdoor Education

Outdoor education has been practiced throughout the history of humankind, as human life has been intertwined with nature throughout the centuries. However, both societies and natural surroundings have changed over time, as a result of industrialisation (Broda, 2007). The

origins of modern outdoor education can be found in the philosophical work of Comenius; John Dewey; Leopold; Locke; Rousseau; Thoreau and Pestalozzi. Initial work on the philosophy of outdoor education includes that of Hahn and Unsoeld (Olafsson and Thorsteinsson, 2009).

The term outdoor education appeared in the early 1940s, and was used to describe the use of natural areas in meeting student learning objectives through direct experiences within an educational context (Johnston, 2007). One early definition of outdoor education was 'education in, for, and about the outdoors' (Donaldson & Donaldson, 1958). In 1986, Priest redefined the concept as 'an experiential method of learning, with the use of all senses. It takes place primarily, but not exclusively, through exposure to the natural environment' (Priest, 1990, p.13).

Jordet (2003) has also defined the concept of outdoor education. According to Jordet, this is not a subject, but an educational approach. Outdoor education is based on theories from known academics, which in turn are based on many years' research on the value of outdoor education for teaching and learning (Schunk, 2009). True outdoor education is professional and organised, and must be systematically included in the school curricula. Furthermore, it has to be prepared and carried out like other educational undertakings, in relation to different subjects (Jordet, 2003).

The theory of outdoor education tends to emphasise the effect of natural environments on human beings and experiential learning, while experiential learning refers to the process of formulating meaning from direct experience and learning from experience (Priest and Gass, 2005). Kolb´s experiential learning theory is based on Dewey´s theories on learning by doing, Lewin´s theories on social psychology and Piaget´s theories on cognitive development. Kolb asserted that 'Learning is the process whereby knowledge is created through the transformation of experience' (1984:38). His theory consists of a four-stage learning cycle and students experience all four stages of the cycle. However, the learning cycle varies in accordance with individual learning styles and context. The stages of the learning cycle are experiencing, reflecting, thinking and acting (Beard and Wilson, 2006).

In outdoor education, direct contact with nature is important for students' experiences (Hurtig, 2002). When schools use the woods as a classroom, (Gilbertson et al., 2006) it becomes necessary for teachers to devote their time to the physical and mental preparation of students for outdoor experiences. As Dewey stated: 'A primary responsibility of educators is that they not only be aware of

Figure 2: A young student working in a wood, looking for inspiration in designing and formulating an art project in relation to mathematics and physics.

the general principle of the shaping of actual experience by environing conditions, but that they also recognize in the concrete what surroundings are conducive to having experiences that lead to growth. Above all, they should know how to utilise the surroundings, physical and social, that exist so as to extract from them all that they have to contribute to building up experiences that are worthwhile.' (1938, p. 40).

With outdoor education, students become more active in experiential education than in traditional classroom education (Gilbertson et al., 2006): they learn through direct experiences and the content of learning is somewhat controlled by the teacher. The most successful teaching method is the one that brings students directly to the subject through experience (Bunting, 2006): the focus of outdoor education is direct experience and the best place to learn about nature is amongst nature (Gilbertson et al., 2006).

'Reading Woods' with Teachers in Icelandic Schools in the 21st Century

Figure 3: Whittling was an interesting part of the project. Prior to the activity, students were taught to use basic tools, such as knives, saws and axes, in order to ensure their safety.

Orion and Hofstein (1991) observed 256 high school students, in an attempt to identify any issues that influenced their learning abilities during a science-based field trip within a natural environment. To optimise the opportunity for learning, Orion and Hofstein suggested that outdoor experiences be planned as a part of an integrated curriculum and that there should be a focus on maximising physical and psychological readiness for such experiences: this ensures that students become capable of dedicating their energies to the designed purpose of the experience. Through such training, students can embrace the overall learning experience, which will encourage future learning experiences (Torsney, 2008).

Neilson (2009) outlined the use of outdoor learning experiences within the context of the student-instructor relationship and the transference of content, as below:

> Taking the learning situation outdoors to a small urban park, the power dynamics change to allow teacher and students to become collaborative learners and together explore systems of oppression. Being outdoors, we are bombarded with new stimuli, the presence of other people…as well as the sun and wind, which provide opportunities for challenging the notion that students need to accept the oppression of the classroom (p.136).

Cornell (1998) considered it important that teachers focus on students' motivation and keep them active by asking questions about their undertakings. It is also important for students to experience nature through the different senses. If students are not used to being outside, it is beneficial to get them interested in some specific activities (Cornell, 1998).

Teachers' Experiences and Views of Outdoor Education

Many research projects have been undertaken outside Iceland, with regards to teachers and their job within the context of outdoor education. For example, a research study that examined outdoor education relating to Oxfordshire primary schools indicated teachers' lack of expertise in literacy and numeracy strategies. Furthermore, staff support was required for those who initiated developments (Wheatley-Price, 2002). In Fägerstam's research (2012a), teachers' lack of training and guidance for support staff meant that, occasionally, their role was supervisory rather than educative. In the research of Ross, Higgins and Nicol (2007), it was ascertained that teachers also felt that they lacked expertise, largely in relation to specialist knowledge of the natural environment to be studied.

According to Fägerstam's research (2012a), teachers perceived many barriers to outdoor teaching, such as lack of time, confidence and resources; however, they also identified potential advantages, such as the promotion of meaningful learning in real-life situations. In the research of Ross, Higgins and Nicol (2007), teachers also complained of a lack of equipment for outdoor educational activities.

Ross, Higgins and Nicol (2007) concluded that teachers' motivation and inspiration are important elements of outdoor education. Furthermore, they also stated that the flexibility of schools in enabling activities is also vital. The teachers expressed their belief that some topics/subject areas are more appropriate for outdoor learning and viewed direct experience of nature outdoors as valuable and often essential for learning, in addition to being beneficial for personal and social development. Similarly, Fägerstam (2012a) established that teachers saw potential advantages in outdoor education, such as promoting meaningful learning in 'real-life' situations.

‘Reading Woods’ with Teachers in Icelandic Schools in the 21st Century

Some researchers have identified the skills that teachers require in order to enhance pupil learning in outdoor education. Hattie (2009) and Nordenbo (2008) outlined three main areas in this; firstly, teachers’ must have good knowledge of the subject that students are studying and the didactics of the specific subjects taught. Secondly, teachers must possess leadership skills, in that they must be able to lead groups effectively, make decisions when required and demonstrate authority. Thirdly, teachers should possess social competence, in supporting student communication and collaboration (Hattie, 2009; Nordenbo, 2008).

Using local school woodland as an educational environment allows educators to implement cross-curricular school activities (Jordet, 2003). According to Dyment (2005), Jordet (2007) and Szczepanski, Malmer, Nelson & Dahlgren (2007), there does not appear to be a limitation on the type of subjects that can be taught outdoors. However, science appears to be the subject most regularly taught outdoors, according to Dyment. Acknowledging national differences in context and approach, the assumptions for the potential advantages of outdoor teaching and learning are general.

The concept of outdoor education may offer teachers increased and diverse opportunities for communication. It also has the potential to improve relationships between teachers. In Fägerstam’s research (2013a), teachers reported how outdoor learning facilitated communication. They perceived collaboration as an important educational aspect of school-based outdoor teaching and viewed the project as an opportunity to change the rather rigid boundaries between disciplines at the school. In a study undertaken under the aegis of King‟s College in London (Natural England, 2011), one of the themes that emerged from teachers’ interviews was the significance of ideas, inspiration and resources from others. In the majority of cases, such collaboration was talked about in terms of learning between schools. Furthermore, several teachers saw the opportunity to learn from foundation and from colleagues well experienced in outdoor learning. Moreover, some teachers also stated that they were constrained by not having access to information about locations or resources.

A Survey on the Use of Local Woods for Icelandic Elementary Schools

At the end of January 2011, a survey was undertaken in order to examine the realisation of using local woodland within elementary school education in Iceland. The aims of the survey were:

1. To gain knowledge and understanding of teachers’ work in outdoor education, in order to enable further development in Icelandic schools.

The objectives were:
1. To examine the use of local woodland in the project
2. To examine teachers’ experiences when participating in the project
3. To ascertain the drawbacks and benefits of running the project
4. To examine the teachers’ views of outdoor education
5. To observe the administration of outdoor educational activities
6. To determine how projects were organised.

The research questions were:
1. What are teachers’ attitudes towards using local woods for learning?
2. What are the drawbacks and benefits in using local woods for learning?
3. What kind of support would benefit teachers, in terms of running the project?

Outdoor education is relatively new in Iceland and the project ‘Reading Woods with Schools’ was the first big curriculum development project regarding outdoor education, incorporating twenty-two schools. Thus, the authors chose to use a survey in order to collect a significant amount of data on teachers’ views and their reflections. A survey is typically used to encompass a wide field of issues, populations, programmes, etc., in order to measure or describe any generalised features (Fereday & Muir-Cochrane, 2006; Cohen & Manion, 2005).

The survey consisted of twenty-five multiple choice questions, with an option for respondents to provide additional information. This was useful in obtaining in-depth data on facts, thus providing new insight, highlighting new examples or illustrations and allowing for different interpretations and a variety of responses (Cohen & Manion, 2005).

A questionnaire was set up on the internet and was made accessible to the 22 schools that participated in the project. The schools had all volunteered in the project and all of them agreed to participate in the survey. Therefore, the sample included all of the participating schools and the results subsequently reliable (Cohen, Manion and Morrison, 2005). One teacher from each school answered the questionnaire and all of them completed the survey. The quantitative data was analysed using SPSS. The written answers were examined using qualitative methods with detailed line-by-line analyses for each answer and by

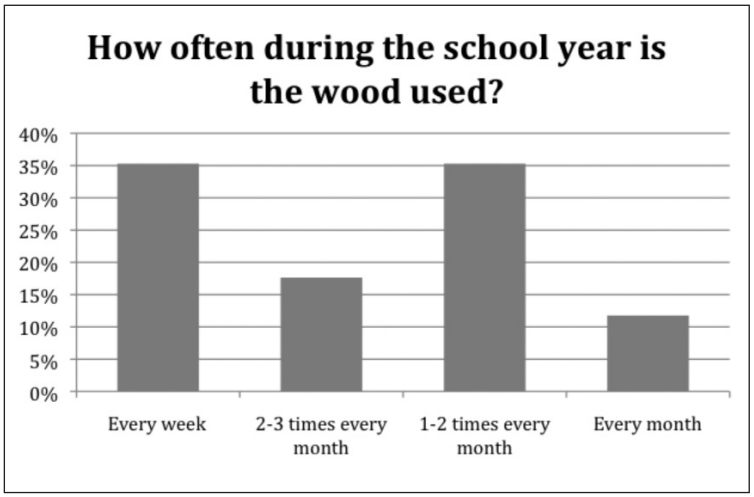

Figure 4: Pie chart shows how often schools used the woods

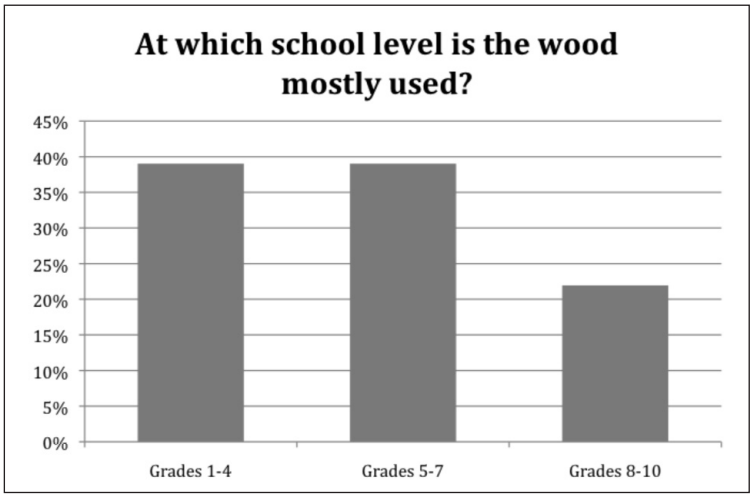

Figure 5: Pie chart showing at which school level the wood was mostly used

Figure 6: Pie chart displaying who took the initiative, in terms of teaching in the woods

comparing answers from different participants creating categories, where it was applicable (Creswell, 1998).

Findings

Half of the teachers agreed that the project had significantly influenced their teaching. 95% reported co-operation with teachers from various subject areas and cross-curricular studies were common.

Around 45% of the teachers reported that the 'Reading in Woods' project was established and documented in their school curriculum. However, the project was implemented differently in participating schools. In some schools, the project was implemented as a specific subject throughout the whole curricula, for all classes.

57% of the teachers used the woods during the whole year. Of those who accessed the woodland regularly, the majority utilised it throughout the whole school year. Others incorporated the woods in lessons at the beginning and end of term, as seen in Figures 4 and 5.

The survey also showed that utilisation of the woods was most popular amongst teachers that taught grades 1-4 and 5-7, as seen in Figure 6. Individual teachers took the biggest initiative in teaching, as seen in Figure 7.

The survey concluded that outdoor education activities were largely initiated by teachers. 52% of the teachers stated the activities were mainly initiated by teachers. 22% of the teachers viewed school managers as the originators of such projects, but 26% said it was cooperation between teachers and school managers.

One of the questions in the survey concerned what factors enabled the project, and there were three significant factors in this: facilities in the woods, motivation and inspiration and the flexibility of schools in enabling the activities. The teachers' knowledge was also seen as important, as was running the project throughout the whole school term.

The teachers were asked what kind of support they needed to develop the project further and many stated that better facilities were needed, in terms of tools. Some of them also claimed that the undertakings could have been done differently and in a different context, with others suggesting that in-service teacher courses in utilising woodland in education would have supported their teaching. They also mentioned general guidance for working in the woods with students and opportunities for sharing their experiences with teachers from other schools. Around 60% of the teachers agreed that their local school was sufficient, as an educational environment. 40% of the teachers underlined the importance of implementing the necessary facilities within woodland, such as toilets.

Publishing educational material for teachers and students was seen as important in supporting the dissemination of the project in Iceland: only a few appropriate books have been published for schools. Teachers missed not having learned about aspects of the course, such as the ideology of outdoor education, practical issues regarding health and safety, the context of art and craft and the establishing of conventional education in woodland. Sustainability was also mentioned and guidance was requested, with regards to how outdoor education could be included in the school's curriculum. Nevertheless, many of the teachers did enrol on obtainable courses at the Reykjavik Nature School and the University of Iceland.

Discussion

The research findings highlight the importance of teachers' knowledge and skills in different subject areas and their abilities in organising outdoor educational activities. It is also important that teachers are able to accomplish the context of teaching and learning in local woods. According to the teachers who partook in the research, three significant factors enabled the project: woodland facilities, teachers' motivation and their inspiration and skills. Knowledge of teachers was also cited as important. Similarly, Hattie (2009) and Nordenbo (2008) documented three main elements regarding the enabling of outdoor education; namely, that teachers must possess good knowledge of the subject, leadership skills and social competence, in order to support students' learning.

Around 50% of the teachers asserted that the project had influenced their methods of teaching. For example, cross-curricular studies were commonly undertaken and teachers from different subject areas worked together. Dyment (2005), Jordet, (2007) and Szczepanski et al. (2007) informed that educational activities within the context of outdoor education provide teachers with additional opportunities to implement cross-curricular studies. Furthermore, they considered that there are no limitations as to which subjects that can be taught outdoors. However, in the research of Ross, Higgins and Nicol (2007), teachers expressed their belief that some topics/subject areas are more suited towards outdoor learning. Nevertheless, the authors see the potential advantages of outdoor education as meaningful learning in 'real-life' situations.

Almost half of the teachers stated that the project was established and documented in their school curriculum as a cross-curricular activity. However, cross-curricular activities were implemented differently in the schools. This was probably due to the different backgrounds of the teachers and diverse school policies (Hattie, 2009; Jordet, 2003). Several schools, however, implemented the project as a single subject in their weekly timetable.

Teachers in classes 1-4 and 5-7 used the woodland more frequently throughout the whole year, while others used it at the beginning and end of term. It may be that the curriculum for the younger classes was more flexible than for the older classes, or was the result of lack of teacher specialisation. According to the Icelandic National Curriculum (2011), teachers have more flexibility when teaching younger children and this provides them with freedom in planning lessons. Ross, Higgins and Nicol (2007) concluded that flexibility is vital in order to enable outdoor educational activities.

22% of the teachers surveyed viewed school managers as the originators of the project, while 26% stated the project was based on cooperation between teachers and school managers. However, individual teachers took the biggest initiative in using local woodland for learning. It is possible that these teachers had a different understanding of the value of the project and were thus more motivated towards outdoor education. Ross, Higgins and Nicol (2007) found that teachers' motivation is a significant factor in outdoor education and concluded that flexibility is an importance aspect of enabling outdoor activities.

Teachers also reported that outdoor education is valuable and often essential for learning, and that there is a direct link between such learning and personal and social development. Similarly, Fägerstam's (2012a) research highlighted the potential advantages of outdoor education, such as the promotion of meaningful learning in 'real-life' situations.

Many teachers also mentioned that being provided with general guidance, in terms of working in woodland with students, would have been beneficial. They also stated that better facilities were required, in order to develop the

project further. Similarly, in the research of Ross, Higgins and Nicol (2007), educators asserted that a lack of appropriate equipment and facilities limited their teaching. In the project 'Local Woods for Learning', many of the teachers underlined the importance of adequate facilities within woodland. However, it is likely that this problem was the result of the project being in the initial stages.

A significant number of teachers considered collaboration and the opportunities for sharing their experiences with other teachers as beneficial to the project. In Fägerstam's research (2013a), teachers mentioned collaboration as an important educational aspect of school-based outdoor teaching, while, in a research project undertaken at King's College in London (Natural England, 2011), teachers underlined the significance of ideas, inspiration and the opportunity to learn from foundation and other school colleagues.

Teachers highlighted that they had not been educated upon certain aspects of the course, such as the ideology of outdoor education, practical issues regarding health and safety, the context of art and craft and the establishment of conventional education in a woodland. Indeed, outdoor education in Iceland is in its initial stages, with only a few books on outdoor education published for schools. Teachers in Fägerstam's (2012a) research perceived many barriers to outdoor learning, including lack of published material on outdoor education. However, they saw potential advantages in holding their school activities within local woodland, in the context of meaningful learning in 'real-life' situations. Ross, Higgins and Nicol (2007) also informed that teachers reported a lack of published material, with regards to outdoor education.

Teachers requested guidance in sustainability, in terms of how outdoor education may be included in the curriculum. Sustainability is relatively new as a general element within the National Curriculum in Iceland (2011) and few books have been published on the topic. Nevertheless, many of the teachers did enrol on related courses at the Reykjavik Nature School and the University of Iceland.

Conclusion

The survey highlighted the importance of educating teachers in preparation for the provision of outdoor education. Furthermore, it is vital to provide teachers with the necessary facilities in order to enable outdoor activities and further material on outdoor education in Iceland and sustainability within this context is required. Teachers must also be allowed the flexibility and freedom to organise cross-curricular outdoor educational activities and must be willing to enrich their teaching via collaboration with other teachers.

The survey also indicated a positive influence on teaching and students were able to learn from real-life situations within a cross-curricular context. It is obvious that the Icelandic National Curriculum is supportive of outdoor learning, particularly in terms of younger pupils. Teachers are provided with the necessary flexibility and freedom, thus allowing them to adapt to different circumstances.

In general, teachers were motivated, viewing the undertakings as meaningful school activities and students direct experiences as valuable. They also understood the value of the possibility of collaboration with other teachers and the project experience, in terms of developing their teaching and the course content.

Many academics have addressed the importance of children spending time in a natural environment. The woods are a place away from the adult world, where children get the chance to experience a sense of wonder, joy, exuberance, awe and even fear and trepidation; the raw aspects of normal and healthy development (Louv, 2008; 2011).

It is essential to understand that connection to nature is not just about students and teachers having physical contact with woodland, but also refers to the close proximity of a living eco system; it is about experiencing the character and nature of a wood. 'Reading Woods with Schools' presents interesting educational opportunities for schools in the 21st century and is relevant for students, of all ages, throughout the modern world.

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brynjar@hi.is

cdt@hi.is

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